MT 26
International Conference on Magnet Technology

Vancouver, Canada | 2019

September 22–27, 2019
Hyatt Regency Hotel
Downtown Vancouver

MT26.triumf.ca

Stanley Park Seawall—Photo by Gabriel Santiago

Hosted by

TRIUMF

Sponsored by

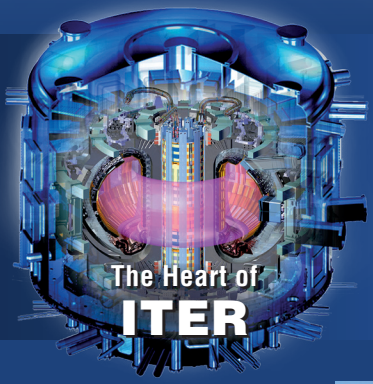
IEEE CSC Council on Superconductivity

IEEE Advancing Technology for Humanity

GENERAL ATOMICS

INNOVATIVE SOLUTIONS FOR SUPERCONDUCTING MAGNET TECHNOLOGIES

GA can meet a wide variety of needs in magnetics by combining cutting-edge research and manufacturing capabilities to cover the full life cycle of magnet design, fabrication and testing.

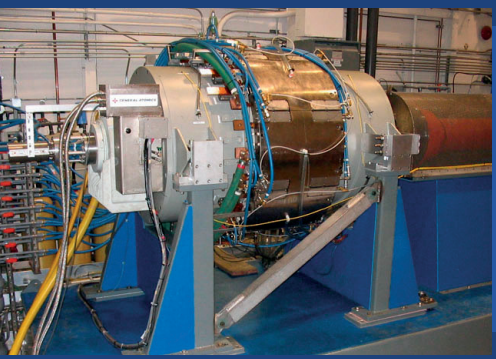


◄ ITER CENTRAL SOLENOID

- World's largest pulsed superconducting magnet
- 13.1 Tesla peak field strength
- 5.5 gigajoules of stored energy capacity

MAGNETICALLY LEVITATED ROCKET SLED ►

World's fastest maglev at Holloman Air Force Base High-Speed Test Track



◄ HOMOPOLAR MOTOR

First Superconducting Homopolar Motor developed for Office of Naval Research as direct-drive ship propulsion

Visit us at booth #202

http://www.ga.com/magnet-technologies

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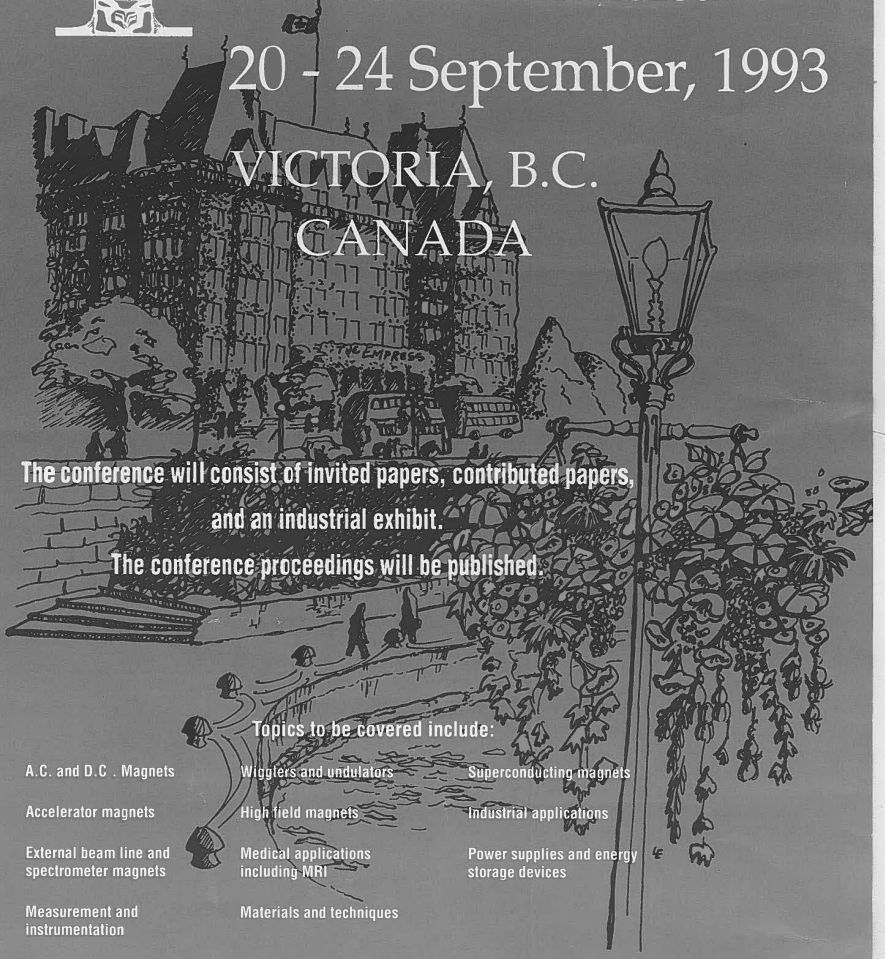
THIRTEENTH INTERNATIONAL CONFERENCE ON MAGNET TECHNOLOGY

MT 13

20 - 24 September, 1993

VICTORIA, B.C.

CANADA



The conference will consist of invited papers, contributed papers, and an industrial exhibit.

The conference proceedings will be published.

Topics to be covered include:

- A.C. and D.C . Magnets
- Accelerator magnets
- External beam line and spectrometer magnets
- Measurement and instrumentation
- Field and stress calculations
- Wigglers and undulators
- High field magnets
- Medical applications including MRI
- Materials and techniques
- Permanent magnets
- Superconducting magnets
- Industrial applications
- Power supplies and energy storage devices

Hosted by TRIUMF

For further information please contact:

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WELCOME TO MT26

Welcome to MT26! On behalf of everybody involved in the organization of MT26, I would like to welcome you to beautiful Vancouver and the 26th Magnet Technology Conference!

This is the second time that the conference is hosted in Canada and by TRIUMF. On the left, you can see the conference poster from 26 years ago, when it was held on Vancouver Island, in Victoria. TRIUMF has a deep connection to magnet technology; it starts at its core, the 520 MeV cyclotron, the largest in the world that powers a large portion of TRIUMF's scientific program and ends at resistive and superconducting magnets used for its beamlines and detectors.

Six MT26 Plenary lectures address advances in practically all aspects in magnet technology including accelerators, fusion, rotating machinery, ultra-high field magnets, successful conductor selection. We hope that the conference attendees will be excited by the Friday Plenary *"Commercialization of Superconducting Technologies - CFS, MIT and High-field Fusion"*. On Wednesday, six invited Young Scientists will each pitch their research in five minutes during the Young Scientist Plenary Session. The Tuesday Special session will discuss status, magnet and conductor technology needs for future ultra-high magnetic field applications. We are excited to showcase TRIUMF on Friday during public tours.

We hope that you will also be enjoying our great city with its cultural, culinary and natural attractions. Situated between the mountains and the sea, protected by Vancouver Island there is a plethora of things to do: taking the small ferries to Granville Island, strolling through Stanley Park, enjoying the Vancouver Art Gallery, taking a dip in the ocean, hiking the local mountains and many, many more.

The IEEE Council on Superconductivity is underwriting MT26. The International Organizing Committee is steering the long-term direction of the conference series, but the event would not have been possible without the many people taking responsibility and putting their hearts and effort into it. You can find their names in the committee's section of this booklet. Special thanks go to Centennial Conferences for their professional management of MT26, Jana Thomson as LOC Chair, Michael Parizh as Program Committee Chair, Luisa Chiesa as Editor in Chief and Michael Coffey as Exhibit Chair.

We wish you a great conference and stay in Vancouver. Come back soon!

R. Picker, Chair

SUPPORTERS & ADVERTISERS

These supporting organizations significantly enhance the Conference through their participation.

The MT26 Organizing Committee wishes to express its appreciation to the following:

www.alliedmet.com

www.asgsuperconductors.com

www.bruker.com

www.cryomagnetics.com

www.cryomech.com

www.fujikura.com

www.ieeecsc.org

www.ga.com

www.tesla.co.uk

www.triumf.ca

CONFERENCE ORGANIZATION

International Committee

Rüdiger Picker (Chair)	Canada	TRIUMF
Mark Bird	USA	NHMFL
Pierluigi Bruzzone	Switzerland	CRPP
Luis Garcia-Tabares	Spain	CIEMAT
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Haigun Lee	Korea	Korea University
Ziad Melhem	United Kingdom	Oxford Instruments
Neil Mitchell	France	ITER
Riccardo Musenich	Italy	INFN
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Subrata Pradhan	India	IPR
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Antti Stenvall	Finland	TUT
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Herman ten Kate	The Netherlands	University of Twente
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Vitaly Vysotsky	Russia	VNIIKP
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Michael Parizh	Program Committee Chair
Jana Thomson	LOC Chair
Luisa Chiesa	Editor-in-Chief
Michael Coffey	Exhibit Chair
Bruce Strauss	Travel Support Chair
Dana Giasson	Website Design
Francis Pau	Treasurer
Diana Castaneda	Logo Design

Travel Support Committee

Bruce Strauss (Chair)	USA	DoE IEEE
Mathias Noe	Germany	KIT
Vitaly Vysotsky	Russia	VNIIKP

Conference Management

Centennial Conferences
Ph: 1-303-499-2299 | Fax: 1-303-499-2599
E-mail: mt@centennialconferences.com
Website: www.centennialconferences.com

IEEE AWARDS

The following IEEE Awards will be presented following the plenary session on Monday, September 23, 2019.

Description of the Awards and past honorees can be found at www.ieeecsc.org/awards.

The IEEE Dr. James Wong Award for Continuing and Significant Contributions to Applied Superconductivity Materials Technology, presented to:

Prof. Kozo Osamura

Citation
For continuing and significant contributions in the field of superconductivity materials research, in particular:

- for his development of new techniques to determine the local strain in technical superconductors;
- for advancing the understanding of the impact of strain on superconductor properties, for introducing new methods to improve the mechanical properties of superconducting composites; and,
- for his leading role in the creation of international standards for superconducting materials technology.

The IEEE Award for Continuing and Significant Contributions in the Field of Superconductivity (Large Scale), presented to:

Prof. Vitaly Vysotsky

Citation
For continuing and significant contributions in the field of large scale applications of superconductivity, in particular:

- for pioneering experimental and theoretical research of the superconducting cable stability in AC conditions, and proven cable design approaches;
- for development and testing of the world's first hybrid energy transfer systems combining liquid hydrogen and superconducting MgB_2 power cable; and,
- for leading production and on-time delivery of the challenging superconducting cables for ITER that met or exceeded all technical requirements.

The IEEE Max Swerdlow Award for Sustained Service to the Applied Superconductivity Community, presented to:

Dr. Antonio della Corte

Citation

For sustained leadership and exceptional service to the applied superconductivity community, in particular:

- for his founding and gifted leadership of the Italian Consortium for Applied Superconductivity (ICAS);
- for enthusiastic leadership of the Superconductivity Laboratory of the Italian National Research Agency, ENEA, and his tireless and successful efforts in motivating and stimulating its young scientists and engineers; and,
- for recognized leadership within the applied superconductivity community as researcher, member, and President of the IEEE Council on Superconductivity.

IEEE CSC Graduate Study Fellowship in Applied Superconductivity

Full Class of 2019

Lorenzo Bortot, *Technische Universität Darmstadt*	Large Scale
Tahereh Jabbari, *University of Rochester*	Electronics
Federica Pierro, *Tufts University*	Materials
Nicolò Riva, *Karlsruhe Institut für Technologie/École polytechnique fédérale de Lausanne*	Materials
Emily Toomey, *Massachusetts Institute of Technology*	Electronics
Abigail Wessels, *University of Colorado Boulder*	Large Scale

PLENARY SPEAKERS

Monday, September 23, 2019; 08:05 – 08:50

Herman ten Kate (CERN)
Topic: "SUPER-Conductors for Successful Magnets"

Tuesday, September 24, 2019; 08:00 – 08:45

Helene Felice (CEA Paris-Saclay)
Topic: "Advances in Nb_3Sn Superconducting Accelerator Magnets"

Wednesday, September 25, 2019; 08:00 – 08:45

Alessandro Bonito-Oliva (Fusion for Energy)
Topic: "Towards Completion and Delivery of the First EU ITER Magnets"

Thursday, September 26, 2019; 08:00 –08:45

Timothy Coombs (University of Cambridge)
Topic: "Advances in Superconducting Rotating Machinery"

Friday, September 27, 2019; 10:30 – 11:15

Brandon Sorbom (Commonwealth Fusion Systems)
Topic: "Commercialization of Superconducting Technologies - CFS, MIT and High-field Fusion"

Friday, September 27, 2019; 11:15 – 12:00

Mark Bird (NHMFL/FSU)
Topic: "Recent Advances in Ultra-High Field Magnet Technology"

Please visit the MT26 website at **mt26.triumf.ca/#plenaries** for more information.

YOUNG SCIENTIST PLENARY SPEAKERS

Come to hear the engaging 5-minute presentations from these outstanding Young Scientists in Magnet Technology!

Wednesday, September 25, 08:45 – 09:30

Ernesto Bosque (ASC / NHMFL)
”Bi-2212 High Field Magnet Development”

Ibrahim Kesgin (Argonne National Laboratory)
”Development of Superconducting Undulators”

Franco Julio Mangiarotti (CERN)
”Superconducting Magnet Testing: The Art of Giving Feedback on Magnet Design”

Federica Pierro (Tufts University)
”Electro-mechanical Characterization of HTS Tapes and Conductors for the next Generation High-field Magnets”

Federico Scurti (North Carolina State University)
”Rayleigh-scattering Interrogated Optical Fibers for Quench Detection”

Yusuke Sogabe (Kyoto University)
”Mitigation of Shielding-current-induced Field in a Magnet Wound with Coated Conductors for Accelerator Systems”

Please visit the MT26 website at **mt26.triumf.ca/#plenaries** for more information.

SPECIAL SESSION

Magnet Technology and Conductor for Future High-field Applications

Tuesday, September 24, 2019, 16:00 – 18:30

Session Moderator: Joseph Minervini, Massachusetts Institute of Technology

The Special session will discuss status, magnet and conductor technology needs for future very high magnetic field applications. Possible potentially-commercial or large-volume applications include imaging, rotating machinery, fusion and accelerator technology. In these applications, high fields promise the system performance improvements beyond magnetic field-generating assembly, compact devices and reduced weight. Several presentations will address status of the high-field, >10 tesla, ReBCO, BSCCO and TMC conductors. HTS and TMC conductor needs will be discussed including technical characteristics and manufacturing demands. The magnet technology challenges include but not limited to interactions with the system components, high forces and stresses, quench protection, operation at high currents, high voltage insulation, manufacturing issues.

Speakers are as follows:

1. Introduction
2. **Michael Parizh** (GE Global Research)
   Topic: "MRI"
3. **Zachary (Zach) Hartwig** (Commonwealth Fusion Systems)
   Topic: "Ultra-high-field Fusion – CFS"
4. **Mathias Noe** (KIT)
   Topic: "Advantages and Challenges in High-field Rotating Machinery"
5. **Bernardo Bordini** (CERN)
   Topic: "High-field Accelerator Magnets"
6. **Bernd Seeber** (scMetrology SARL)
   Topic: "TMC - A Low-cost High Field Conductor"
7. **Satoshi Awaji** (Tohoku University)
   Topic: "Status of High-field ReBCO Conductor"
8. **Michael Sumption** (The Ohio State University)
   Topic: "Conductor Technology Needs"
9. **Naoyuki Amemiya** (Kyoto University)
   Topic: "Key Issues in HTS Magnet and Conductor Technology Toward Various Applications"
10. **Ramesh Gupta** (BNL)
    Topic: "Magnet Technology Development for High-field Accelerator Magnets"
11. Questions & Discussion

Please visit the MT26 website at **mt26.triumf.ca/#special** for more information.

SPEAKER PREPARATION INFORMATION

Presentation Upload Requirement

- **All presenters must** upload an electronic copy of their talk or poster in PDF (or PPT(X)) format to the Indico site prior to the session in which their presentation is scheduled.
- By participating at MT26 and submitting your presentation, you implicitly agree to publish the content of your presentation on the public Indico site.

If you need to withdraw your presentation from the program, please advise the staff in the Publication Office in the Dover/Tennyson Room (Level 4).

Oral Presentation Guidelines

- **Presenters of oral presentations are REQUIRED to submit an electronic version of their talk at least one day prior to their presentation to the Speaker Preparation Room (Dover/Tennyson Room, Level 4).** Files are reviewed, scanned for viruses and loaded onto the appropriate computers in the session rooms. Changes to submitted files will not be allowed.
- Presentations will be given using the computers provided by the Conference. Presenters' personal computers **cannot** be used.
- Using removable media (USB drives) is prohibited on the computers in oral session rooms. Saving data to and from them is not possible.
- Files transferred to the session computers cannot be copied by anyone and will be deleted after the Conference. Anyone wishing to receive a copy of the slides should contact the presenter, not MT26.
- Presentations must be submitted in Microsoft Power Point 2016 or PDF format. Acceptable media include CD and USB flash drive. Macintosh computers will not be available in any of the session rooms. Authors using a Macintosh must ensure their presentations operate correctly using Microsoft Office 2016 or Adobe Acrobat in the Windows environment.
- All session rooms are equipped with an LCD projector, computer, microphones, laser pointer, timer and screen. The laptops in the oral session rooms are not equipped to accommodate audio sound.
- **The session rooms will have a screen for 16:9 presentation format.**
- Contributed oral presentations are 15 minutes; arrange your talk so that your presentation lasts 12 – 13 minutes with 2 – 3 minutes available for questions.
- Most invited presentations are 30 minutes; arrange your talk so that your presentation lasts 25 minutes with 5 minutes available for questions. If your invited talk is less than 30 minutes, you will be notified.
- Arrive a few minutes before the session and introduce yourself to the session moderators before the start of the session.
- There will be no rearrangement of papers within an oral session to accommodate absences or cancellations. The time assigned to an oral presentation within the oral session is fixed.

Speaker Preparation Room is located in the Dover/Tennyson Room on Level 4 and the Hours of Operation are:

Sunday, September 22	14:00 – 19:00
Monday, September 23	07:00 – 18:30
Tuesday, September 24	07:00 – 18:00
Wednesday, September 25	07:00 – 18:00
Thursday, September 26	07:00 – 18:00
Friday, September 27	07:00 – 10:00

Poster Presentation Guidelines

- Poster boards are numbered 1 through 121. Each poster has been assigned a poster board number which can be found to the right of the presentation ID (*see number in brackets, for example: Mon-Mo-Po1.05-02 [55] or Wed-Mo-Po3.09-01 [63])*.
- **Your poster must correspond to the title and content of the abstract you submitted.**
- If you have more than one poster and they are not side by side, please spread your time over all poster presentations and add a note on the poster board your other location(s) and the time you expect to be present.
- NOTE: It will **NOT** be acceptable to merely post a copy of your paper. Such submitted manuscripts will be marked by session moderators as "No-Show".
- MT26 accepts no responsibility for material that may be left behind, lost, stolen, or damaged.

Poster presenters must setup or tear down their presentations as follows:

Day	Setup	Session	Tear Down
Monday September 23	07:00 – 09:15 13:30 – 14:30	09:15 – 11:15 14:30 – 16:30	11:15 – 13:30 18:15 – 20:15
Tuesday September 24	07:00 – 08:45 12:30 – 14:00	08:45 – 10:45 14:00 – 16:00	10:45 – 12:30 16:00 – 16:30
Wednesday September 25	07:00 – 09:30 13:00 – 14:00	09:30 – 11:15 14:00 – 16:00	11:15 – 13:00 16:00 – 16:30
Thursday September 26	07:00 – 08:45	08:45 – 10:45	10:45 – 11:00

Presentation Requirement

Presentation at MT26 is required for a paper to be considered for peer review. For posters, the word presented means that an author must be present at the poster during the entire session. **Attendance will be taken by the session moderators.** If an author is not available to answer questions and discuss the poster during the session, the paper written from this poster will not be considered for peer review or published in the IEEE TRANSACTIONS ON APPLIED SUPERCONDUCTIVITY (TAS).

PRESENTATION UPLOAD GUIDELINES

ALL AUTHORS must upload their Poster and Oral Presentations prior to their scheduled presentation time.

By participating at MT26 and submitting your presentation, you implicitly agree to publish the content of your presentation on the public Indico site.

Presenters of oral talks must also submit their presentation files to the Speaker Preparation Room one (1) day prior to their scheduled presentation.

To upload your presentation to the Indico site, please make sure you are logged in, see the "Sign in" button in the upper right corner.

Click on "My Contributions" below "Presentations(s)" on the left.

Click on the title of your presentation.

Scroll down to "Presentation Materials" and click on the pencil.

Select the appropriate link to add your file(s) and follow the instructions. Please be sure to not "protect" your files or your presentation will not be visible to other attendees.

INFORMATION FOR SESSION MODERATORS

If a scheduled presentation has a no-show presenter and the presentation was not given, the corresponding manuscript, if submitted, will not be considered for peer review and published in the IEEE TRANSACTIONS ON APPLIED SUPERCONDUCTIVITY (TAS).

Session Moderators for **ORAL SESSIONS** have several responsibilities.

Prior to the session start:

- Please go to the **Speaker Preparation Room (Dover/Tennyson Room, Level 4)** prior to the session to check whether all presentations have been submitted.
- Take a roll-call of all speakers.
- Familiarize yourself with lighting controls, computer, laser pointer, slide controls, microphones, and the general layout of the room viewing angles, doors, noise, etc. If there are any issues, please advise the conference staff.
- Talks should be pre-loaded. Verify that talks are there.
- PowerPoint tip: F5 will start the presentation, ESC exits.
- Acrobat tip: Ctrl – L will enter full-screen mode, ESC exits.

Beginning of and during sessions:

- Announce the title of the session. If the session is sponsored, please also acknowledge the sponsor.
- Introduce yourselves.

- *Explain the ground rules:*
  - Invited oral = 25 min (warn at 22) + 5 min for questions. Contributed oral = 12 min (warn at 10) + 3 min for questions.
- You should introduce the presenting author and the title of each presentation.
- Be polite but firm when enforcing these guidelines: Stand, ask the speaker to conclude. Keep control of the session time!
- At your discretion, talks may encroach into question time, but then you should defer questions to private discussion.
- Monitor noise, audience, etc.
- The session moderator is encouraged to ask a first question if the audience does not have one. This helps start a discussion.
- Every presentation must be exactly as scheduled. If a speaker does not show on time for his/her presentation, the next speaker shall not begin the presentation until the scheduled time. Session Moderators may fill the time before the next presentation starts by allowing more questions or initiating discussion on the subject of the session.
- **Complete and return the Session Moderator Report**. Check off presentations as they are given. Also estimate the audience size. This information must be returned to the **Publications Office (Dover/Tennyson Room, Level 4)**.
- The two moderators can alternate this task.
- **Do not let anyone walk away with the laser pointer!**

POSTER SESSIONS do not require introduction of the authors or of the presentations.

- Session Moderators are asked to record any posters that were not presented. One of the authors must be present at most, if not all, times with the poster presentation.
- Walk the session multiple times. Note that in some cases, an author may need to attend to more than one poster, and thus might not be present during your first survey, so you may have to return later. Poster presenters will be instructed to leave a note on their posters to say when they will return.
- Posters that have been mounted but do not have an attendant, or posters that are missing entirely, must be recorded on the Session Moderator Report. Please take note of the policies that follow when completing this form. Estimate audience size.
  - Poster policy #1: If a poster is placed on the poster board but an author is not available for the entirety of the session, this is not considered as having been presented. Please make a note on the Session Moderator Report in the No-Show column.
  - Poster policy #2: Posters that simply consist of a posted copy of the manuscript even if enlarged are not considered to be poster presentations. Please mark the poster as a No-Show in the Session Moderator Report.
- Poster papers turned in but that are not presented will not be considered for peer review or published in the IEEE TRANSACTIONS ON APPLIED SUPERCONDUCTIVITY (TAS).

REMINDER

Session Moderator Reports are due following your session or no later than 12:30 on Friday, September 27, in the Publications Office.

PUBLICATION OFFICE AND MANUSCRIPT UPLOAD ROOM

The Publication & Manuscript Upload Room is located in the **Dover/Tennyson Room on Level 4** and the **Hours of Operation** are as follows:

Sunday, September 22	14:00 – 19:00
Monday, September 23	07:00 – 18:30
Tuesday, September 24	07:00 – 18:00
Wednesday, September 25	07:00 – 18:00
Thursday, September 26	07:00 – 18:00
Friday, September 27	07:00 – 12:30

Manuscript Submission Deadline

23:59 PDT, Tuesday, September 24, 2019

Manuscript Validation Codes

Manuscript submission is validated by a unique code *(attendee registration confirmation number)*. Only the Full Conference, Student and Retiree Participant registrations include one (1) manuscript submission code. Other registration types do not include a manuscript submission code. Authors in these other categories must pay a fee of $600 CAD to receive a registration code.

A code belonging to a co-author may be used by the submitting author to validate a manuscript. Multiple co-authors who choose to submit multiple manuscripts may also judiciously allocate codes provided by their registration fees. However, **multiple use of a unique code will invalidate all submissions identified by that code**. Authors may submit multiple manuscripts provided that each submission is related to a presentation. If the author or a co-author cannot provide a unique code, additional codes can be obtained by paying the manuscript fee of $600 CAD for each code required.

Page Limits

Manuscript Type	Page Limit	Pages for References Only
Contributed Oral or Poster	4	+1 *
Invited Oral or Poster	6	+1 *
Plenary	12	no limit

*Page limits do not apply to References—**references may continue onto or entirely take up additional pages at no additional cost**. The additional page fee is **$150 CAD** per page.

IEEE Publications may re-format graphics to ensure compliance with the IEEE Graphics Guidelines. In some cases, this could result in the body text extending substantially beyond the allowed page limit. You may be contacted for payment of an additional page fee if this occurs. To avoid this potential problem, please ensure that your graphics comply with the IEEE Graphics Standards (http://graphicsqc.ieee.org/) and are sized appropriately, as indicated in the manuscript template.

Editorial Office / Contact Information

Centennial Conferences
Phone: 1-303-499-2299 | Fax: 1-303-499-2599 | Email: pubs@centennialconferences.com

REGISTRATION INFORMATION

Registration materials and name badges will be available at the Conference Registration Desk located on Level 2 (Sunday & Monday) and Level 3 (Tuesday-Friday).

Hours of Registration

Sunday, September 22	14:00 – 20:00
Monday, September 23	07:00 – 18:30
Tuesday, September 24	07:00 – 17:00
Wednesday, September 25	07:00 – 18:00
Thursday, September 26	07:00 – 17:00
Friday, September 27	07:00 – 11:00

Exhibitor Registration

Exhibitor Registration will take place on Sunday, September 22, 2019 in the Queen Charlotte Room on Level 3 between 14:00 and 17:00.

Admittance to Sessions and Social Events

All participants **MUST** have a badge for entry to all technical sessions and social events. Some events require tickets. **Tickets for social events are non-refundable.**

COFFEE BREAKS & SOCIAL EVENTS

All of the following social events are included in the full, student and retiree registration fees. Tickets will be provided in your registration packets. For guests/companions or one-day pass registrations, extra tickets can be purchased separately at the On-site Registration Desk.

Coffee Breaks

Coffee breaks are offered daily, Monday through Thursday during Poster Sessions, as well as Thursday afternoon and Friday morning on Level 2 and Level 3.

Welcome Reception

Date:	Sunday, September 22
Time:	18:30 – 20:30
Location:	Regency Ballroom, Level 3
Additional Ticket Fee:	$75 CAD

Exhibitor Reception

Date:	Monday, September 23
Time:	18:00 – 20:00
Location:	Level 2 and Level 3
Additional Ticket Fee:	$65 CAD

Banquet

Date:	Wednesday, September 25
Time:	18:30 – 23:00
Location:	Fairmont Hotel Downtown, Pacific & BC Ballrooms
Additional Ticket Fee:	$90 CAD*

The banquet will start with a 1-hour reception and light background music in the Pacific Ballroom of the Fairmont Hotel. Dinner will be served at 19:00 in the BC Ballroom with music and dancing at the conclusion of dinner in the Pacific Ballroom.

**Additional tickets for guests / companions / Exhibit Hall Only Representatives and One-Day participants may be purchased at the On-site Registration Desk by noon on Monday, September 23.*

TRIUMF TOUR

Date:	Friday, September 27
Time:	13:15 – 16:15
Location:	Meet at the Melville Street entrance
Ticket Fee:	$25 CAD

Tour is sold out. However, if you are still interested in attending, please go to the On-site Registration Desk to add yourself to the waiting list.

TRIUMF is home to the world's largest cyclotron particle accelerator and a system of high-energy rare isotope beams that enable a diversity of efforts in nuclear and particle physics, accelerator science, life science research and more! Tour participants get first-hand experience with many of TRIUMF's experiments and facilities as we follow the path of the proton from its origin bound in a hydrogen atom to its destination in targets and detectors.

The tour will last 60 minutes, with time for Q&A and photography throughout. The tour fee covers bus transportation between the Hyatt Regency Vancouver Downtown and TRIUMF.

ADDITIONAL INFORMATION

Internet

Complimentary wireless internet access is provided to MT26 attendees and exhibitors throughout the MT26 meeting space. The access information is as follows:

Network: *Hyatt_Meetings*
Wireless Network: *MT26*
Password: *magnets*

Networking Lounge

A Networking Lounge is available for attendees in the Turner Room on Level 4 of the Hyatt Regency.

Parking

Hyatt Regency Vancouver: $41.66/day Self Parking, $52.08/day Valet Parking
Fairmont Vancouver (Banquet evening): $62/day Valet

Mail and Messages During the Conference

Please send mail, fax and messages to your hotel and direct it to your room. Critical messages may be sent to the MT26 Organizers by email at mt@centennialconferences.com for delivery to you. Please use as subject "Urgent – Critical Message for [name]".

Special Needs

Every effort will be made to accommodate special needs of disabled participants. If assistance is required, please contact staff members at the MT26 Conference Registration Desk at the Hyatt Regency Vancouver. Contact the Hotel Concierge for information on special transportation needs. The Hyatt has elevators, restrooms (except for on the 34th floor), water fountains and concessions designed to accommodate the needs of those with physical and non-physical impairments.

Emergency Evacuation

In the case of an emergency, the emergency alarm system will be used to alert all clients, associates, visitors and contractors of the need to evacuate the building as determined by the location and type of emergency. Unless directed otherwise, ***please leave the building, utilizing the nearest exit or fire exit stairway***. ***Do not use elevators.***

Medical Response

In the case of a medical emergency, we ask that you dial 55 on any of the phones located at the Hyatt Regency and the manager on duty or security will assist you. You can also contact any of the Centennial Conferences staff members and they will assist you with contacting the hotel and emergency services.

You may contact the 24-hour security department by dialing extension 2638 from any in-house telephone or by calling 860-728-2638.

Security, Insurance and Medical Liability

The conference organizers will not accept liability for personal injuries sustained, or for loss of, or damage to property belonging to conference participants or accompanying persons, either during or as a result of the conference. Please check the validity of your own insurance.

Message Boards

The following daily updates can be found on Level 2:

- **Messages & Updates:** Last minute program changes/updates will be posted here and participants can post or receive messages here as well.
- **Job Postings and Resume Board:** Participants should post to this board as appropriate.

A message board will also be located in front of the Speaker Preparation/Publication Office (Dover/Tennyson Room, Level 4) for last minute Program Updates.

Please be sure to check the message board daily.

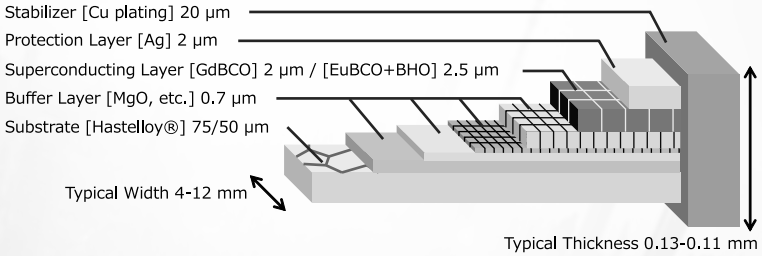
Fujikura

RE-based High-Temerature Superconductor

■ Characteristic Feature

- Superior in-field critical current and excellent mechanical properties applicable for magnet applications
- Original key manufacturing techniques of IBAD & PLD process enabling high superconducting performance
- Volume production available for future superconducting applications

■ Schematic of Typical Specification



■ Typical Specifications

Products	Width [mm]	Thickness [mm]	Substrate [μm]	Stabilizer [μm]	Critical Current [A]	
					77K, S.F.	20K, 5T*3
FYSC-SCH04	4	0.13	75	20	≥ 165	368
FYSC-SCH12	12	0.13	75	20	≥ 550	—
FYSC-S12 *1	12	0.08	75	—	≥ 550	—
FESC-SCH04 *2	4	0.11	50	20	≥ 85	514
FESC-SCH12 *2	12	0.11	50	20	≥ 250	—

*1 Specification without copper stabilizer is available in only 12mm wide for current lead applications.

*2 Artificial pinning specification for use at low temperature and high magnetic field

*3 Ic@20K, 5T is a reference value and no guarantee of the actual performance.

Japan and other areas

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Visit us at the MT26 conference, Booth 301

EXHIBITORS

The **MT26 Exhibit** will run concurrently with the 26th International Conference on Magnet Technology on Levels 2 & 3 of the Hyatt Regency Vancouver featuring suppliers of equipment and services to the industry. Early access for the exhibitors will be permitted.

Exhibit Setup & Registration

Sunday, September 22	14:00 – 17:00	
Location:	Queen Charlotte Room, Level 3	

Exhibit Hours:

Monday, September 23	09:00 – 16:30	
	18:00 – 20:00	Exhibitor Reception
Tuesday, September 24	08:30 – 16:00	
Wednesday, September 25	09:00 – 16:00	

Exhibitors

Advanced Conductor Technologies LLC	Booth: 215
Allied Metals Corporation	Booth: 302
American Magnetics, Inc.	Booth: 309
ASG Superconductors	Booth: 314
Brookhaven Technology Group, Inc.	Booth: 313
Bruker EST	Booth: 208
CAEN Technologies Inc.	Booth: 311
Cryogenic Limited	Booth: 218
Cryomagnetics, Inc.	Booth: 211
Cryomech, Inc.	Booth: 303
CSIC Pride (Nanjing) Cryogenic Technology Co., Ltd.	Booth: 216
Demaco Holland bv	Booth: 212
Fujikura Ltd.	Booth: 301
Furukawa Electric Co., Ltd.	Booth: 213
General Atomics	Booth: 202
Hyper Tech	Booth: 308
Japan Superconductor Technology, Inc.	Booth: 214
Luvata Superconductors	Booth: 217
M&I Materials	Booth: 307
Metrolab Technology SA	Booth: 207
Oxford Instruments NanoScience	Booth: 312
Shanghai Superconductor Technology	Booth: 210
Sigmaphi	Booth: 209
Sumitomo (SHI) Cryogenics of America, Inc.	Booths: 204 & 205
Sumitomo Electric Industries, Ltd.	Booth 206
Supercon, Inc.	Booth: 203
SuperOx Japan	Booth: 201
Tesla Engineering Ltd.	Booths: 305 & 306
THEVA Dünnschichttechnik GmbH	Booth: 304
Western Superconducting Technologies Co., Ltd.	Booth: 310

EXHIBITOR INFORMATION

Advanced Conductor Technologies LLC **Booth: 215**

Advanced Conductor Technologies' CORC® technology opens the door to new markets that require flexible, high-current density power cables and wires. High-temperature superconducting CORC® cables and wires also enable practical high-field magnets that operate at magnetic fields above 20 Tesla, or at temperatures exceeding 20 Kelvin.

Annemiek Kamphuis
3082 Sterling Circle, Unit B, Boulder, CO 80301, USA
Phone: 888-959-6405
Email: info@advancedconductor.com / Website: www.advancedconductor.com

Allied Metals Corporation **Booth: 302**

Allied Metals Corporation is a global leader in the supply of high purity iron for applications where efficiency, consistency, and cost of engineered technologies are critical. High saturation induction, high permeability, and low coercivity allow ALLIEDPUREIRON® to be suitable for components of resistive magnets, superconducting magnets, and magnetic shielding, among other magnetic technologies. The capability to supply Pure Iron in a diverse range of forms including sheet, plate, bar, wire, and forged parts (custom dimensions available) and the ability to supply material in trial quantities up to ~300 Metric Ton single heats, makes Allied Metals Corporation your ideal partner.

Mark Plückthun
2668 Lapeer Road, Auburn Hills, MI 48326, USA
Phone: 248-680-2400
Email: mplueckthun@alliedmet.com / Website: www.alliedmet.com

American Magnetics, Inc. **Booth: 309**

American Magnetics, Inc. (AMI), a veteran owned company in TN, has been a manufacturer of superconducting magnet systems and cryogenic equipment for over 45 years. Our custom solutions range from completely conduction cooled multi-axis systems combined with an integrated variable temperature insert to large room temperature bore zero boil off helium recondensing systems (ReconTM). When our innovative superconducting magnets, such as our multi-axis (MAxesTM) series are coupled with cutting edge cryostats, the customer is buying a winning combination.

Kurtis Fagan
112 Flint Road, Oak Ridge, TN 37830, USA
Phone: 865-482-1056
Email: kurtis.fagan@americanmagnetics.com / Website: www.americanmagnetics.com

ASG Superconductors **Booth: 314**

ASG Superconductors is a dynamic business reality, and a leading player in the international market of superconducting magnets systems design and manufacturing.

The ASG Superconductors group of companies has recently undergone re-organization to incorporate all elements of our activity into a single structure.

The aim is to bring together the capabilities within the three units to secure and improve our position as a world-class Italian company, already a worldwide leader in the production

of magnets both for scientific research and for the industrial sector and to develop more effectively the magnesium diboride (MgB_2) wire and MRI businesses.

Giovanni Grasso
Corso F.M. Perrone 73r, Genova, 16152, Italy
Phone: 39-0106489270
Email: grasso.gianni@as-g.it / Website: www.asgsuperconductors.com

Brookhaven Technology Group, Inc. **Booth: 313**

Brookhaven Technology Group, Inc. is developing a multilayer superconducting cable named ExoCable™. ExoCable™ is an innovative, multilayered High-Temperature Superconductor (HTS) wire architecture based on yttrium-barium-copper oxide that can be manufactured cost-effectively in essentially unlimited lengths. ExoCable™ combines high quench stability with low magnetization loss and high mechanical strength. The cables are designed for applications where fast ramping and good field quality are required.

Paul Farrell
1000 Innovation Road, Stony Brook, NY 10305, USA
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Email: pfarrell@brookhaventech.com / Website: www.brookhaventech.com

Bruker EST **Booth: 208**

Bruker Energy and Supercon Technologies (BEST) is a global leader in superconductor solutions, providing an unmatched range of products that meet the needs of healthcare, academic and industrial companies and organizations worldwide. In close cooperation with our customers, we design, develop and deliver product solutions that are at the heart of a majority of the superconductor magnets worldwide. They enable innovators to build leading edge healthcare and industrial products, as well as to conduct fundamental research, such as the search for the origins of the universe and sustainable clean energies.

Larry Masur
600 Milik Street, Carteret, NJ 07008, USA
Phone: 732-850-9311
Email: lawrence.masur@bruker.com / Website: www.bruker.com/best

CAEN Technologies Inc. **Booth: 311**

High current, high stability, highly accurate. Less than 1 ppm/K TC and < 0.01% setpoint current accuracy are among some of our specs. CAEN ELS magnet power supplies are designed with a completely digital control and feedback loop, allowing for software-based adjustment of PID parameters, synchronizing fully and behaving nicely with your reactive loads (up to 100 H). Home-grown DCCT current sensors are implemented within the supplies for aiding in such performance, or are available separately in various models with a complete digitizing current measurement system for your own setups. CAEN ELS is represented in the U.S. by CAEN Technologies.

Erik Soiman
1140 Bay Street, Staten Island, NY 10305, USA
Phone: 516-450-5720
Email: erik@caentech.com / Website: www.caenels.com

Cryogenic Limited **Booth: 218**

Cryogenic Limited leads the market in delivering high performance superconducting magnet systems for science researchers. Magnet configurations (up to 18T cryogen-free, 22T in low loss cryostats) include solenoids, split pair, vector, UHV and beam-line magnets. Our flagship integrated measurement and analysis platforms are Physical Property Characterization Systems and SQUID magnetometers. Measurements include: DC moment & AC susceptibility; specific heat, thermal transport; DC & AC electric resistivity, Dielectric/capacitance, Critical Current. Sample temperature (1.6-400K) can be augmented by Helium-3 (300mK) & Dilution Refrigerator (50mK) inserts, and furnace (700-1000K) inserts.

Danielle Portugal
3407 NW 56th Street, Seattle, WA 98107, USA
Phone: 805-320-6194
Email: danielle@cryogenic-usa.com / Website: www.cryogenic.co.uk

Cryomagnetics, Inc. **Booth: 211**

Cryomagnetics is a premier manufacturer of superconducting magnets, systems, related electronic instrumentation, and cryogenic accessories. Efficient magnet designs allow for smaller cryocooler use (dry) or less helium consumption (wet). Solenoids, split-pairs, and multi-axis magnets are available in a wide range of configurations with room temperature bore, variable temperature, or He_3 sample environments. In-house manufacturing of complete wet or dry systems by our team of certified fabricators assures the highest quality. Built for the unique demands of superconducting magnets, the Model 4G power supplies feature unrivaled performance and standard features. Also available: LM-510 Liquid Cryogen Level Monitor, Model 612/614 Temperature Monitors and GM-700 Gaussmeter.

Michael Coffey
1006 Alvin Weinberg Drive, Oak Ridge, TN 37830, USA
Phone: 865-482-9551
Email: sales@cryomagnetics.com / Website: www.cryomagnetics.com

Cryomech, Inc. **Booth: 303**

Cryomech' s superior products provide hundreds of customers with custom-built Cryocoolers, Helium Liquefiers, Liquid Nitrogen Plants and ULT Cryostats. We craft solutions that help our customers get things done.

We are the original innovators:

- The world's largest 4K Pulse Tube Cryocooler
- The world's largest single stage GM Cryocoolers for operation at 77 K and 30
- The most extensive line of GM and PT Cryocoolers on the planet
- Fully integrated, closed-cycle refrigeration for applications below 2K
- Open-cycle to closed-cycle helium conservation with our Helium Liquefiers and Recovery systems
- Ultra Low Vibration 1K and 4K Cryostats

Tabitha Sebastino
113 Falso Drive, Syracuse, NY 13211, USA
Phone: 315-455-2555
Email: tsebastino@cryomech.com / Website: www.cryomech.com

CSIC Pride (Nanjing) Cryogenic Technology Co., Ltd. **Booth: 216**

CSIC Pride (Nanjing) Cryogenic Technology Co., Ltd. (Pride Cryogenics) is a technology oriented company concentrated on the development and manufacturing of cryocoolers and cryogenic engineering application devices. Pride Cryogenics' products include 4 K GM cryocoolers, 10 K GM cryocoolers, 77 K GM cryocoolers, cryostats, helium reliquefier, gas recovery, purification and liquefaction systems and other customized cryogenic systems.

Zhezhen Xu

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Phone: 86-025-87133705

Email: xuzhezhen@724pride.com/Website: www.724pridecryogenics.com/en/index.asp

Demaco Holland bv **Booth: 212**

Demaco is the leading knowledge driven cryogenic infrastructure partner for industrial gas companies, scientific institutes and EPC contractors world-wide. Our team of cryogenic specialists, Cryogeniuses, is committed to supporting our partners in their daily effort to transport and condition all liquefied gasses. By advising on, designing, engineering, manufacturing, testing and installing customer specific vacuum insulated solutions of superior quality, we continuously provide the highest yielding infrastructure in the industry.

Rossi Mendez

Oester 2, Noord-Scharwoude, Noord-Holland, 1723 ZG, Netherlands

Phone: 31-0226332100

Email: rm@demarco.nl / Website: www.demaco.nl/en/

Fujikura Ltd. **Booth: 301**

Fujikura Ltd., has been the global leader of developing rare-earth-based 2nd Generation High-Temperature Superconducting wires over 20 years. We sustain this title by producing best performance wire with higher critical current, longer piece length and higher uniformity for longitudinal critical current distribution. Prospective applications of our superconducting wires are now widely spread from electrical/industrial equipment to medical and measuring instruments. Our superconducting wires are committed to not only be improving quality of human life but also have great potential for industrial innovation and saving natural resources.

Kunihito Kituchi

1440, Matsuzaki, Sakura-shi, Chiba, 285-8550, Japan

Phone: 81-43-484-3048

Email: Kunihito.kikuchi@jp.fujikura.com / Website: www.fujikura.com

Furukawa Electric Co., Ltd. **Booth: 213**

Furukawa Electric is the pioneer in superconductivity; Comprehensiveness from low-temperature superconductivity to high-temperature superconductivity. FEC can provide solutions to customer's issues.

Kota Katayama

2-3, Marunouchi 2 Chrome, Chiyoda-ku, Tokyo, 100-8322, Japan

Phone: 81-3-3286-3544

Email: kota.katayama@furukawaelectric.com / Website: www.furukawa.co.jp/en

General Atomics **Booth: 202**

General Atomics (GA) is a world leader in electromagnetics and superconducting magnet technology. GA is currently fabricating powerful pulsed superconducting magnet modules for ITER, an unprecedented international tokamak facility that aims to demonstrate the commercial feasibility of nuclear fusion. When completely assembled, the ITER Central Solenoid will have a peak field of 13.1 Tesla with 5.5 GJ of stored energy. Magnet research at GA has led to discoveries and spinoff technologies in medical diagnostics, cryogenics, energy storage, transportation, semiconductors, and defense applications. GA leverages its research for the U.S. government and private industry, delivering solutions ranging from next-generation nuclear reactors to remotely operated aircraft and electromagnetic systems including the EMALs systems to electromagnetically launch airplanes from aircraft carriers.

Julie Harris
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Phone: 858-455-2635
Email: julie.harris@ga.com / Website: www.ga.com/energy-group

Hyper Tech **Booth: 308**

Hyper Tech is a leading manufacturer of MgB2 and Nb3Sn superconductor wires. We have experience designing, manufacturing and testing coils using NbTi, Nb_3Sn, MgB_2, Nb_3Sn, BSCCO, and (Re) BCO superconductors. Hyper Tech is developing small diameter high amperage Cable-in Conduits (CIC) for several superconducting applications, using NbTi, MgB_2, and Nb_3Sn strands. We also have system design experience for developing superconducting MRIs, fault current limiters, motors, wind generators, SMES, DC and AC cable applications.

Michael Tomsic
539 Industrial Mile Road, Columbus, OH 43228, USA
Phone: 614-481-8050
Email: mtomsic@hypertechresearch.com / Website: www.hypertechresearch.com

Japan Superconductor Technology, Inc. **Booth: 214**

Japan Superconductor Technology, Inc. (JASTEC) is a manufacture of superconducting wire/magnet in Japan. We have been contributing to a variety of application fields; life science, medical, energy and other science & industries through our cutting-edge technologies. - Wire: Our high-performance NbTi and Nb_3Sn wires are used for NMR/MRI as well as ITER TF/CS. - Magnet: We supply high-field NMR magnets as well as special MRI magnets. We have also rich experience in cryogen-free magnets for academic and industrial applications.

Takeharu Sakuragi
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Phone: 81-3-5739-5210
Email: sakuragi.takeharu@kobelco.com
Website: www.jastec-inc.com/e_top/index.html

Luvata Superconductors **Booth: 217**

Luvata Superconductors have factories in three continents producing special copper products and low-temperature superconducting (LTS) wires, cables and hollow conductors for magnet applications. The products are generally designed for special applications in

mind and their features vary widely among various products offerings. Wires are produced for all applications in the LTS fields. Products include monolithic wires in round and rectangular shape as well as wire-in-channel or cable-in-channel integrated conductors.

Tae Pyon
2121 Thomaston Avenue, Waterbury, CT 06704, USA
Phone: 203-568-7226
Email: tae.pyon@luvata.com / Website: www.luvata.com

M&I Materials **Booth: 307**

Metrosil varistors are manufactured by M&I Materials Ltd, providing superfast, high energy discharge for many applications. For example, within superconducting, a typical protection approach to a quench event would be to switch-in a low resistive load to dissipate magnetic energy. However, the energy from the magnetic field can be extracted at a much faster rate using Metrosil varistors. Our assemblies have been tested on superconducting systems at CERN where a rapid current decay was favourably observed.

Gemma Shackleton
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Email: gemmashackleton@mimaterials.com / Website: www.metrosil.com

Metrolab Technology SA **Booth: 207**

Metrolab Technology SA is the global market leader for precision magnetometers, used to measure high-intensity magnetic fields to a very high degree of precision.
Our customers include: All MRI and magnet manufacturers, Accelerator and calibration labs, OEM customers. Our products include: NMR Precision Teslameters: The gold standard for magnetometers, NMR Magnetic Field Cameras: Map whole-body MRI magnets, Precision Digital Integrators: Measure or map complicated fields, 3-axis Hall Magneto-meters: Total field, quick and easy.

Anny Murtro
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Email: murtro@metrolab.com / Website: www.metrolab.com

Oxford Instruments NanoScience **Booth: 312**

Oxford Instruments NanoScience designs, supplies and supports market-leading research tools that enable quantum technologies, new materials and device development in the physical sciences. Our tools support research down to the atomic scale through creation of high performance, cryogen free low temperature and magnetic environments, based upon our core technologies in low and ultra-low temperatures, high magnetic fields and system integration, with ever-increasing levels of experimental and measurement readiness. Oxford Instruments NanoScience is a part of the Oxford Instruments plc group.

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Email: soma.deshprabhu@oxinst.com / Website: www.nanoscience.oxinst.com

Shanghai Superconductor Technology **Booth: 210**

Shanghai Superconductor Technology Co., Ltd. (SST) employs physical vapour deposition for mass production of custom and cost effective 2G-HTS conductors with superior mechanical properties and high critical current densities for all types of applications. We also provide peripheral products and services including coil winding, coil winding machines and vacuum deposition systems.

Amos Hong
Bldg. 25, 1388 Zhangdong Road, Pudong, Shanghai, 201203, China
Phone: 86-13642357543
Email: yiming.hong@shsctec.com / Website: www.shsctec.com

Sigmaphi **Booth: 209**

Sigmaphi has been providing turnkey systems and components for particle accelerators to major research labs and protontherapy system providers for more than 30 years.
Our 200 highly skilled employees can design, make and measure: Complete particle transport beam lines, from optics to installation and alignment; igh precision magnets: resistive, superconducting, permanent magnet based, in vacuum; Turnkey injection or extraction systems; Ultra stable power supplies; RF power solutions: Solid state amplifiers, Klystron modulators.

Jean-Luc Lancelot
Zi du Prat, Rue des Freres Montgolfier, Vannes, 56000, France
Phone: 33-297010880
Email: contact@sigmaphi.fr / Website: www.sigmaphi.fr

Sumitomo (SHI) Cryogenics of America, Inc. **Booths: 204 & 205**

The SHI Cryogenics Group, an integral part of the Precision Equipment Division of Sumitomo Heavy Industries, Ltd., is a leading worldwide provider of innovative cryogenic solutions to magnet technology and other research communities. With offices in Asia, Europe and the United States, it has been producing quality cryogenic equipment for over 50 years. SHI's renowned engineering departments continue to focus on the latest cryogenic technologies, including innovative Cryocooler, Pulse Tube, Shield Cooler and Helium Compressor designs. Sumitomo (SHI) Cryogenics of America, Inc. is the North American Division of the SHI Cryogenics Group, focusing on design, manufacturing, sales and service.

Sarah Mitchell
1833 Vultree Street, Allentown, PA 18103, USA
Phone: 610-791-6700
Email: smitchell@shicryogenics.com / Website: www.shircryogenics.com

Sumitomo Electric Industries, Ltd. **Booth: 206**

DI-BSCCO, 1st Grade superconductor, is the trade mark of Sumitomo Electric Industries (SEI). Using DI-BSCCO, researchers and manufactures from around the world have successfully manufactured superconducting cables, magnets, motors and current lead assemblies. Recently, SEI developed Type HT-NX, an extra high strength DI-BSCCO, superconductor wire design that is surpassing other HTS wires for high field (over 20T) magnet designs. DI-BSCCO Type G is widely used in magnet current lead designs especially for large application, for example, ITER and the particle accelerators.

Yuichi Yamada
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Phone: 81-6-6466-5537
Email: Yamada-yuichi@sei.co.jp / Website: www.global-sei.com/super

Supercon, Inc. **Booth: 203**

SUPERCON has been manufacturing low temperature NbTi and Nb_3Sn superconductors as standard and specially designed wire and cable since 1962. Many of Supercon's standard conductors, from 0.025 to 2.0mm diameter, are available from stock A wide variety of custom composite metal wires is also available. We can deliver research quantities to OEM requirements from stock.

David Frost
830 Boston Turnpike, Shrewbury, MA 01545, USA
Phone: 508-842-0174
Email: dfrost@supercon-wire.com / Website: www.supercon-wire.com

SuperOx Japan **Booth: 201**

SuperOx Japan (SOJ) was established in 2011 as a venture company. Currently there are two production facilities - Sagamihara Incubation Center and TechnoEast, which are located in the Sagamihara city, Japan. The company has 16 employees including 6 people with PhD degrees. SOJ developed the complete manufacturing cycle of 2G HTS wires starting from the Hastelloy substrate tape, including RF and DC magnetron sputtering, IBAD, pulsed laser deposition (PLD), electroplating and lamination processes. The company has started to sale the HTS wires in 2013, and in 2018 the production capacity reached 50 km of 12 mm tape.

Valery Petrykin
1880-2 Kamimizo Chuou-ku, Sagamihara, Kanagawa 2520243, Japan
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Email: valery.petrykin@superox.co.jp / Website: www.superox.co.jp

Tesla Engineering Ltd **Booths: 305 & 306**

The Tesla Engineering Ltd group of companies consist of Tesla Engineering Magnet Division, Tesla Engineering Gradient Division, Everson Tesla Incorporated and Futura Composites. This group of companies are dedicated to the design, manufacture and support of resistive and superconducting electromagnets, gradient coils, composite materials, generator coils, motors and consultancy to the science, medicine and industrial markets. We can utilise the skills, expertise and facilities of the group companies to offer a complete design and manufacturing solution, together with help and advice for system integration and outstanding service support.

Andy Ralston
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Email: ralston@tesla.co.uk / Website: www.tesla.co.uk

THEVA Dünnschichttechnik GmbH **Booth: 304**

THEVA has invested over fifteen years in development to build Germany's first commercial HTS production plant. Thanks to its very high energy density, THEVA Pro-Line superconductor can replace conventional copper cable in high-performance applications. It opens entirely new scope for the design of electrical components. Manufacturers of cables, power switches, large electric drives and power rails can rely on the high quality and performance of the material. THEVA stands for high-end solutions in coating technology and equipment engineering.

Sara Landvogt
Rote-Kreuz-Str. 8, Ismaning, 85737, Germany
Phone: 49-89-92334616
Email: landvogt@theva.com / Website: www.THEVA.com

Western Superconducting Technologies Co., Ltd. **Booth: 310**

WST was founded in China for developing large scale production of NbTi and Nb_3Sn superconducting wire for ITER in 2003. Currently, WST has already built an advanced level production line of superconducting wires with annual production capacity of 350 ton superconducting wire and 400 ton WIC superconducting conductor.

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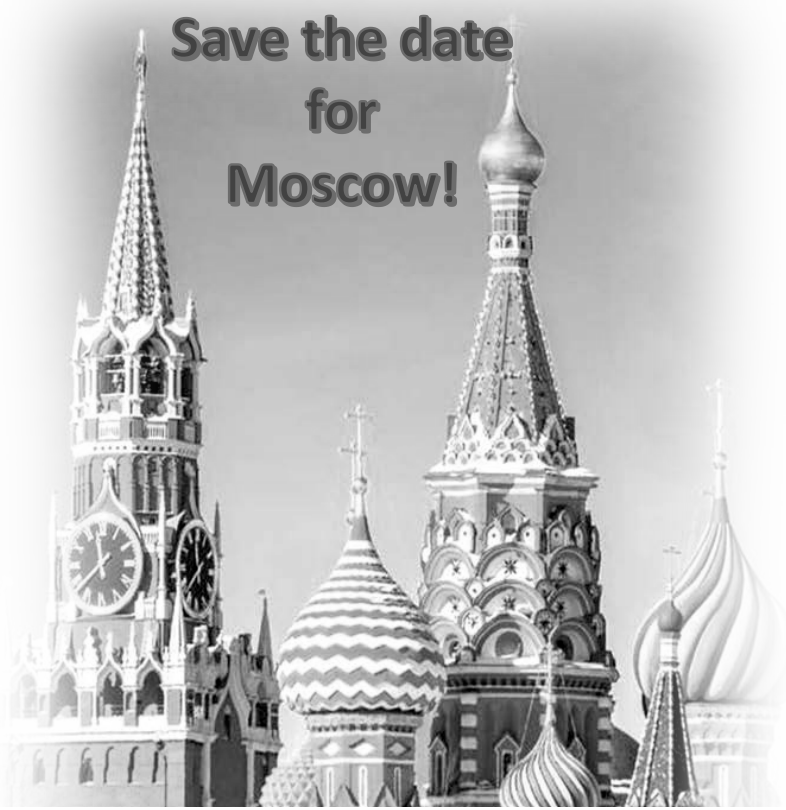
Phone: 86-29-89616812
Email: qinxing@c-wst.com / Website: www.c-wst.com

EUCAS

12-17 SEPTEMBER 2021

MOSCOW



15th European Conference on Applied Superconductivity

www.eucas2021.org

27th International Conference on

MAGNET TECHNOLOGY

November 15-19, 2021

Fukuoka International Congress Center, Fukuoka, Japan

Hosted by
Cryogenics and Superconductivity Society of Japan

https://www.csj.or.jp/MT27/

SUNDAY, SEPTEMBER 22, 2019

08:50 – 09:15 **Level 3, Regency Ballroom**
Welcome Reception

MONDAY, SEPTEMBER 23, 2019

08:00 – 08:05 **Regency Ballroom**
Opening & Welcome
Jonathan Bagger, Director (TRIUMF) & Rüdiger Picker, MT26 Conference Chair (TRIUMF)

08:05 - 08:50 **Regency Ballroom**
Monday Plenary
Session Moderator: Luisa Chiesa, Tufts University

08:05 **Mo-Mo-PL1-01: SUPER-Conductors for Successful Magnets**
Herman Ten Kate (*CERN*)

08:50 – 09:15 **Regency Ballroom**
IEEE Awards
Presented by Bruce Strauss, President, IEEE CSC

09:15 - 11:15 **Level 2 Posters 1**
Mon-Mo-Po1.01 - Quench Protection and Detection Systems I
Session Moderators: Konstantinos Bouloukakis, Victoria University of Wellington and Maxim Marchevsky, LBNL

Mon-Mo-Po1.01-01 [1]: A New Quench Detection Method for High-Temperature Superconducting Rotating Machinery
Seunghyun Song (*Korea Basic Science Institute*), Yojong Choi (*Yonsei University, Seoul, Korea*), SangGap Lee, Young Jin Hwang, Jae young Jang (*Korea Basic Science Institute*), Seungyong Hahn (*Seoul National University*), Minchul Ahn (*Kunsan National University*) and Tae Kuk Ko (*Yonsei University*)

Mon-Mo-Po1.01-02 [2]: Design and Evaluation of a Controllable Contact Resistance for Meter-Class REBCO No-Insulation Pancake Coils
Tao Wang (*Nanjing University of Science and Technology*), Ding Kaizhong, Zhou Chunlong (*the Institute of Plasma Physics, Chi-nese Academy of Science*) and Du Shuangsong (*the Institute of Plasma Physics, Chinese Academy of Science*)

Technical program content exported and prepared for inclusion in the MT26 program book by Dr. Srinivas Vanapalli, University of Twente.

Mon-Mo-Po1.01-04 [3]: Performance of the Large Hadron Collider's Cryogenic Bypass Diodes over the First Two Physics Runs, Future Projects and Perspectives

Giorgio D'Angelo, Zinour Charifoulline, Reiner Denz, Mathieu Favre, Dietrich Hagedorn, Arnaud Monteuuis, Felix Rodriguez Mateos, Andrzej Siemko, Krzysztof Stachon, Arjan Verweij (*CERN*), Andreas Will (*KIT - Karlsruhe Institute of Technology (DE)*) and Daniel Wollmann (*CERN*)

Mon-Mo-Po1.01-05 [4]: Quench protection method using current of magnetically coupled secondary coil for fast current reduction of superconducting magnet

Yojong Choi (*Yonsei University, Seoul, Korea*), Haeryong Jeon (*Yonsei University*), Junseong Kim (*Electrical and Electronic Engineering, Yonsei University*), Geonwoo Baek, Seunghak Han (*Yonsei University*), Young Gon Kim (*Electrical and Electronic Engineering, Yonsei University*) and Tae Kuk Ko (*Yonsei University*)

Mon-Mo-Po1.01-06 [5]: Voltage Signal rate change of Quench Detection by Real-Time Least squares for HTS Tape and Coil

Jie Chen (-), Jin Fang (*Beijing jiaotong University*) and Timothy Coombs (*University of Cambridge*)

Mon-Mo-Po1.01-07 [6]: Optimal Design and Performance Evaluation of Quench Protection System using Dual-capacitor Switching with Various Design Parameters for scale-up Test coil

Yojong Choi (*Yonsei University, Seoul, Korea*), Woo Seung Lee (*Massachusetts Institute of Technology, Francis Bitter Magnet Laboratory / Plasma Science and Fusion Center*), Seunghak Han (*Yonsei University*), Seunghyun Song (*Korea Basic Science Institute*), Haeryong Jeon and Tae Kuk Ko (*Yonsei University*)

Mon-Mo-Po1.01-08 [7]: Quench Protection of Multi-coil Low Temperature Superconducting Systems

James Bray, Michael Parizh, Anbo Wu and Minfeng Xu (*GE Global Research*)

Mon-Mo-Po1.01-09 [8]: Experimental Study on the Electrical Properties of Optical Fiber Encapsulated High Temperature Superconducting Tapes

Junjie Jiang (*Shanghai Jiao Tong University*), Z.Y. Li (-) and Zhijian Jin (*Shanghai Jiao Tong University*)

Mon-Mo-Po1.01-10 [9]: A Conceptual Design of "Magnetic Dam" as a Quench Protection System Using Electromagnetically Coupled Coils for NI HTS Magnet

Soobin An (*SeoulNationalUniversity*), Kibum Choi (*Seoul National University*), So Noguchi (*Hokkaido University*), Chaemin Im, Jeseok Bang, Uijong Bong and Seungyong Hahn (*Seoul National University*)

Mon-Mo-Po1.01-11 [10]: Experimental study on quench protection of HTS magnet composed of multiple pancake-coils by use of auxiliary resistive shunt loop method

Takuma Ichikawa (*university*), Akihiro Nomoto, Hifumi Toriyama, Tomoaki Takao, Kazuya Nakamura, Osami Tsukamoto (*Sophia university*) and Mitsuho Furuse (*National Institute of Advanced Industrial Science and Technolog*)

Mon-Mo-Po1.01-12 [11]: Cenceptual Design and Performance of Quench Detection System for Super High Field Magnet Using Multi Receivers via Wireless Power Transfer Technology

Yoon Do Chung (*Suwon Science College*), S.J. Lee (*JH Engineering, Co. Ltd.*), Eun Young Park (*Korea Christian University*) and Yojong Choi (*Yonsei University, Seoul, Korea*)

Mon-Mo-Po1.01-13 [12]: Dynamic quench protection framework for nuclear fusion energy devices based on superconducting magnet testing

Kun Wang (*Institute of Plasma Physics Chinese Academy of Sciences (ASIPP)*), Zhiquan Song, Peng Fu (*Institute of Plasma Physics, Chinese Academy of Sciences*), Hua Li (*Institute of Plasma Physics, Chinese Academy of Sciences*), Wei Tong (*Institute of Plasma Physics, Chinese Academy of Science; Science Island Branch, University of Science and Technology of China*), Shusheng Wang and Xiuqing Zhang (*Institute of Plasma Physics Chinese Academy of Sciences*)

09:15 - 11:15 **Level 2 Posters 1**

Mon-Mo-Po1.02 - Multiphysics Design and Analysis I

Session Moderators: Victor Bykov, Max Planck Institute for Plasma Physics, Greifswald, Germany and Walter Fietz, KIT

Mon-Mo-Po1.02-01 [13]: Parametric Sensitivity Characteristics of Numerical Simulations on EMF Free Bulging of Circular Sheet Metal

Evandro Paese (*Departamento de Engenharia Mecânica, Universidade de Caxias Sul, Campus Universitário da Região dos Vinhedos*), Martin Geier (*UNISINOS*), Rodrigo Rossi (*Departamento de Engenharia Mecânica, Universidade Federal do Rio Grande do Sul*), Pedro Rosa (*IDMEC, Instituto Superior Técnico, Universidade de Lisboa*) and Roberto Petry Homrich (*Departamento de Engenharia Elétrica, Universidade Federal do Rio Grande do Sul*)

Mon-Mo-Po1.02-02 [14]: Progress in Simulation Method of No-Insulation High Temperature Superconductor Magnets

Kabindra Bhattarai, Kwanglok Kim, Kwangmin Kim (*National High Magnetic Field Laboratory*), Jeseok Bang (*Seoul National University*), Soobin An (*SeoulNationalUniversity*) and Seungyong Hahn (*Seoul National University*)

Mon-Mo-Po1.02-03 [15]: Update of Joule Losses Calculation in the ITER Cold Structures during Fast Plasma Transients

Denis Bessette (*ITER IO*), Pierre Bauer (*ITER*), Francesca Cau (*Fusion for Energy*), Florent Gauthier (*ITER IO*), Alfredo Portone (*Fusion For Energy/European Commission*) and Salvatore Ventre (*Universita di Cassino e del Lazio Meridionale*)

Mon-Mo-Po1.02-04 [16]: Thermo-hydraulic computations on the TF magnet system during transient plasma scenarios with ANSYS

Francesca Cau, Menachilis Panagiotis and Alfredo Portone (*Fusion for Energy*)

Mon-Mo-Po1.02-05 [17]: Stress Distribution of Magnetically Controlled Reactor Core in Gaps Area under Simulated Service Conditions

Tong Ben, Long Chen (*China Three Gorges University*), Rongge Yan (*Hebei University of Technology*) and Qingxin Yang (*Tianjin University of Technology*)

Mon-Mo-Po1.02-06 [18]: Magneto-Mechanical Analysis of A Racetrack Superconducting Magnet Using Multiscale Approach

Qiang Hu (*Key Laboratory of Mechanics on Western Disaster and Environment, Ministry of Education, College of Civil Engineering and Mechanic, Lanzhou University, Lanzhou, China; Institute of Modern Physics of Chinese Academy of Science, Lanzhou, China;*), Xingzhe Wang (*Key Laboratory of Mechanics on Western Disaster and Environment, Ministry of Education, College of Civil Engineering and Mechanic, Lanzhou University, Lanzhou, China;*) and Mingzhi Guan (*The Institute of Modern Physics,Chinese Academy of Sciences*)

Mon-Mo-Po1.02-07 [19]: User Defined ANSYS Elements for 3D Multiphysics Modeling of Superconducting Magnets

Kathleen Edwards, Lucas Brouwer (*Lawrence Berkeley National Laboratory*), Jose Ferradas Troitino (*CERN*), Diego Arbelaez and Soren Prestemon (*Lawrence Berkeley National Laboratory*)

Mon-Mo-Po1.02-08 [20]: Accurate calculation of field expansion coefficients in FEM magnetostatic simulations

Vasily Marusov (*GSI Helmholtzzentrum für Schwerionenforschung GmbH*)

Mon-Mo-Po1.02-09 [21]: HTS magnetization current simulation using ANSYS iterative algorithm method and user defined element

Kai Zhang, Sebastian Hellmann, Marco Calvi (*Paul Scherrer Institut*) and Lucas Brouwer (*Lawrence Berkeley National Laboratory*)

Mon-Mo-Po1.02-10 [22]: Design and Optimization of a High-frequency Rotational Magnetizer for Nanocrystalline Alloys Based on Improved SVM and PSO Algorithms

Long Chen, Han Xiong, Tong Ben (*China Three Gorges University*), Li Qiu (-), Chengcheng Liu and Youhua Wang (*Hebei University of technology*)

09:15 - 11:15 **Level 2 Posters 1**

Mon-Mo-Po1.03 - High Field Magnets for Accelerators

Session Moderators: Karie Badgley, Fermilab and Peter McIntyre, Texas A&M University

Mon-Mo-Po1.03-02 [23]: Fracture Failure Analysis for MQXFA Magnet Aluminum Shell

Heng Pan (*Lawrence Berkeley Laboratory*), Giorgio Vallone (*Lawrence Berkeley National Lab. (US)*), Eric Anderssen (*Lawrence Berkeley National Lab (US)*), Eelis Tapani Takala, Paolo Ferracin (*CERN*), Daniel Cheng (-), Soren Prestemon (*LBNL*) and Giorgio Ambrosio (*Fermilab*)

Mon-Mo-Po1.03-03 [24]: Performance update of 2-m-long 11 T Nb3Sn dipole magnet models for HL-LHC

Gerard Willering, Marta Bajko, Hugo Bajas, Bernardo Bordini, Luca Bottura, Nicolas Bourcey, Arnaud Devred (*CERN*), Michal Duda (*Polish Academy of Sciences (PL)*), Paolo Ferracin, Lucio Fiscarelli, Jerome Feuvrier, Jerome Fleiter, Susana Izquierdo Bermudez, Christian Löffler, Jacky Mazet, Juan Carlos Perez, Herve Prin, Gijs De Rijk and Frederic Savary (*CERN*)

Mon-Mo-Po1.03-04 [25]: Analysis of quench in the HL-LHC 11 T dipole model magnets with 1-D and 2-D models

Marco Breschi (*University of Bologna*), Luca Bottura, Arnaud Devred (*CERN*), Enrico Felcini (*EPFL - Ecole Polytechnique Federale Lausanne (CH)*), Susana Izquierdo Bermudez (*CERN*), Federica Murgia, Giovanni Succi (*Universita e INFN, Bologna (IT)*) and Gerard Willering (*CERN*)

Mon-Mo-Po1.03-05 [26]: Geometrical Inspection and Analysis of the Impregnated Nb3Sn 11 T Coils

Dariusz Pulikowski, Friedrich Lackner, Jose Luis Rudeiros Fernandez (*CERN*), Salvador Ferradas Troitino (*Centro de Investigaciones Energéti cas Medioambientales y Tecno*), Frederic Savary, Luca Bottura and Arnaud Devred (*CERN*)

Mon-Mo-Po1.03-07 [27]: Analysis of the heater-to-coil insulation in MQXF coils.

Vittorio Marinozzi (*FNAL*), Giorgio Ambrosio (*Fermilab*), Maria Baldini (*Fermi national accellerator laboratory*), Guram Chlachidze (*Fermilab*), Paolo Ferracin (*CERN*), Piyush Joshi (*Brookhaven National Laboratory*), Steve Krave (*Fermilab*), Joseph F Muratore (*Brookhaven National Laboratory*), Fred Nobrega (*Fermilab*), Emmanuele Ravaioli (*CERN*), Tiina Salmi (*Tampere University of Technology, Finland*) and Stoyan Stoynev (*FNAL (US)*)

Mon-Mo-Po1.03-08 [28]: Vacuum impregnation of long Nb3Sn coils for the HL-LHC project

Jerome Axensalva, Friedrich Lackner (*CERN*) and Fred Nobrega (*Fermilab*)

Mon-Mo-Po1.03-09 [29]: Characterization of NbTi busbar for HL LHC Interaction Region Quadrupoles

Maria Baldini (*Fermi national accellerator laboratory*), Rodger Bossert (*Fermi National Accelerator Laboratory*), Guram Chlachidze (*Fermilab*), Sandor Feher (*Fermi National Accelerator Lab. (US)*), Vittorio Marinozzi (*FNAL*), Stoyan Stoynev (*FNAL (US)*) and Giorgio Ambrosio (*Fermilab*)

Mon-Mo-Po1.03-10 [30]: Design of a Compact Support Structure for a High Gradient Niobium Tin Superconducting Magnet for a Proposed Electron Ion Collider (EIC).

Brett Parker (*Brookhaven National Laboratory (US)*), GianLuca Sabbi (*LBNL*), John Cozzolino (*Unknown*), Stephen Plate, Andrew Marone (*Brookhaven National Laboratory*), Peter Wanderer (*Brookhaven Lab*), Jesse Schmalzle, Kathleen Amm (*BNL*), Tim Michalski (*JLab*) and Michael Anerella (*Brookhaven National Laboratory*)

Mon-Mo-Po1.03-11 [31]: Test of a single Nb3Sn sextupole coil for ECR ion source using a mirror structure

Yuquan Chen, Li Zhu, Enming Mei, Wei Wu, Xianjin Ou, Zhuoyue Du, Dongsheng Ni and Liangting Sun (-)

Mon-Mo-Po1.03-12 [32]: Final focus superconducting magnets for CEPC

Yingshun Zhu, Xiangchen Yang, Ran Liang, Mei Yang (*Institute of High Energy Physics, Chinese Academy of Sciences*), Fusan Chen, Chuang Shen (*Institute of High Energy Physics, Chinese Academy of Sciences; University of Chinese Academy of Science*), Miaofu Xu and Rui Ge (*Institute of High Energy Physics, Chinese Academy of Sciences*)

Mon-Mo-Po1.03-14 [33]: A High Precision Magnetic Field Shimming algorithm for Inclined 45° Continuous Cutting on Spiral Pole of SC Cyclotron

Ming Li, Tianjue Zhang, Chuan Wang and Shenglong Wang (*China Institute of Atomic Energy*)

Mon-Mo-Po1.03-15 [34]: Magnetic Field Measurement, Amending and Processing for 230MeV Superconducting Cyclotron Main Magnet

Tianjue Zhang, Ming Li, Chuan Wang, Yinlong Lv, Fei Wang, Lei Cao, Tao Cui, Zhiguo Yin, Jun Lin, Peng Huang, Hongru Cai, Zhenhui Wang, Jingyuan Liu, Tianjian Bian, Wei Fu, Shenglong Wang, Shizhong An, Suping Zhang and Zhaojun Jin (*China Institute of Atomic Energy*)

Mon-Mo-Po1.03-16 [35]: Preliminary Study of the High Temperature Superconducting Solution for 2GeV CW FFAG Magnet

Chuan Wang, Tianjian Bian, Ming Li, Wei Fu, Shenglong Wang, Shizhong An and Tianjue Zhang (*China Institute of Atomic Energy*)

09:15 - 11:15 Level 2 Posters 1

Mon-Mo-Po1.04 - High Field Magnets for Future Colliders

Session Moderators: Friedrich Lackner, CERN and Qingjin Xu, IHEP, CAS

Mon-Mo-Po1.04-02 [36]: 3D mechanical Analysis of the Block-coil Dipole option for the future Circular Collider

Chhon Pes, Clement Lorin, Maria Durante and Michel Segreti (*CEA*)

Mon-Mo-Po1.04-03 [37]: Engineering Design and Digital Twin of the Nb3Sn 16T main dipole magnet of the FCC accelerator

Charilaos Kokkinos (*FEAC Engineering P.C. & University of Patras*), Alessandra Pampaloni (-), BARBARA CAIFFI (*INFN - National Institute for Nuclear Physics*), Daniel Schoerling, Davide Tommasini (*CERN*), Demosthenes Polyzos (*University of Patras*), Dimitrios Rodopoulos (*FEAC Engineering P.C. & University of Patras*), Konstantinos Loukas (*FEAC Engineering & University of Patras*), Sotiris Kokkinos (*FEAC Engineering P.C. & University of Patras*), Stefania Farinon (*INFN e Universita Genova (IT)*) and Theodoros Gortsas (*FEAC Engineering P.C. & University of Patras*)

Mon-Mo-Po1.04-04 [38]: Electromagnetic and mechanical study for the Nb3Sn bending dipole short model for FCC

Riccardo Umberto Valente (*LASA-INFN (Milano, Italy)*), Alessandra Pampaloni, Alessandro Maria Ricci (-), Barbara Caiffi (*INFN e Universita Genova (IT)*), Giovanni Bellomo (-), Marco Statera (*INFN Milano - LASA*), Massimo Leone Sorbi (*Università degli Studi e INFN Milano (IT)*), Pasquale Fabbricatore (*INFN e Universita Genova (IT)*), Samuele Mariotto (*University of Milan - INFN Milan*) and Stefania Farinon (*INFN e Universita Genova (IT)*)

Mon-Mo-Po1.04-05 [39]: Quench protection study for F2D2, the Flared-end Block Dipole Demonstrator for the Future Circular Collider

Valerio Calvelli (*CEA*), Etienne Rochepault, Helene Felice (*Université Paris-Saclay (FR)*), Lucas Ramos Vieira (*EEIGM and CEA*) and Maria Durante (*CEA*)

Mon-Mo-Po1.04-06 [30]: Design study of the low-luminosity beam separation dipole for low-luminosity for FCC-hh

Kento Suzuki, Tatsushi Nakamoto, Toru Ogitsu and Michinaka Sugano (-)

Mon-Mo-Po1.04-08 [41]: Investigations into the preliminary Future Circular collider 16 Tesla dipole cryostat design.

Zoe Marie Townsend, Vittorio Parma (*CERN*), Valentina Venturi (*Wroclaw University of Science and Technology (PL)*) and Davide Tommasini (*CERN*)

Mon-Mo-Po1.04-10 [42]: Design of an 18 T arc dipole for an LHC energy doubler

Peter McIntyre, Jeff Breitschopf (*Texas A&M University*), Daniel Chavez, Joshua Kellams and Akhdiyor Sattarov (*Accelerator Technology Corp.*)

Mon-Mo-Po1.04-11 [43]: Long superconducting magnets for a 100 TeV centre-of-mass class hadron collider

Thomas Taylor (*CERN*)

Mon-Mo-Po1.04-12 [44]: Mechanical behavior of a dipolar support structure for sextupole-in-solenoid Magnet during assembly, cool-down and warm-up processes

Beimin Wu (*1Key Laboratory of Mechanics on Western Disaster and Environment, College of Civil Engineering and Mechanics, Lanzhou University, China; 2Institute of Modern Physics of Chinese Academy of Science, China*), Mingzhi Guan (*2Institute of Modern Physics of Chinese Academy of Science, China*), Xingzhe Wang (*1Key Laboratory of Mechanics on Western Disaster and Environment, College of Civil Engineering and Mechanics, Lanzhou University, China*), Qiang Hu (*1Key Laboratory of Mechanics on Western Disaster and Environment, College of Civil Engineering and Mechanics, Lanzhou University, China; 2Institute of Modern Physics of Chinese Academy of Science,China*), Canjie Xin (*2Institute of Modern Physics of Chinese Academy of Science*), Wei Wu (*2Institute of Modern Physics of Chinese Academy of Science, China*), Lizhen Ma (*2The Institute of Modern Physics of Chinese Academy of Science,China*), Liangting Sun (*2Institute of Modern Physics of Chinese Academy of Science,China*) and Hongwei Zhao (-)

Mon-Mo-Po1.04-13 [45]: Fabrication and High-field Performance of the First Iron-Based Superconductor Racetrack Coil

Zhan Zhang, Shaoqing Wei (*IHEP, Chinese Academy of Sciences (CAS)*), Chengtao Wang (*Institute of High Energy Physics, University of Chinese Academy of Sciences*), Yingzhe Wang, Da Chen, Ershuang Kong (-), Dongliang Wang (*Institute of Electrical Engineering, CAS*), Xianping Zhang (*Institute of Electrical Engineering, Chinese Academy of Science*), Fang Liu (*CAS Technical Institute of Physics and Chemistry*), Huajun Liu (*Chinese Academy of Sciences*), Zhen Zhang, Lingling Gong, Xiangchen Yang, Quanling Peng (-), Yanwei Ma (*Institute of Electrical Engineering, Chinese Academy of Sciences*) and Qingjin XU (*IHEP*)

Mon-Mo-Po1.04-14 [46]: Mechanical Design, Assembly and Strain Measurement Results of LPF2: a 12-T Hybrid Common-coil Dipole Magnet

Yingzhe Wang, Zhen Zhang, Chengtao Wang, Zhan Zhang, Ershuai Kong, Da Cheng, Shaoqing Wei, Lingling Gong, Quanling Peng, Xiangchen Yang, Jianxin Zhou, Zian Zhu and Qingjin XU (*IHEP, CAS*)

09:15 - 11:15 Level 2 Posters 2

Mon-Mo-Po1.05 - Fusion I: CFETR & JT-60

Session Moderators: Lance Cooley, ASC/NHMFL/FSU and Jinxing Zheng, Institute of Plasma Physics, Chinese Academy of Sciences

Mon-Mo-Po1.05-01 [54]: Safety Research of the 100 kA HTS Current Lead for CFETR

Kaizhong Ding, Kun Lu, Chenglian Liu, Yuntao Song and Quan Han (*Institute of plasma physics, Chinese academy of sciences*)

Mon-Mo-Po1.05-02 [55]: CFETR Central Solenoid Magnet System Structural Analysis

Aihua Xu (*institute of plasma physics Chinese academy of sciences*)

Mon-Mo-Po1.05-03 [56]: Fabrication Status of CFETR Central Solenoid Model Coil

Houxiang HAN (-), Dapeng Yin (*ASIPP*), Guanghui Ma (*Institute of Plasma Physics Chinese Academy of Sciences*), Huajun Liu (*Chinese Academy of Sciences*), Huan Jin (-), Jiangang Li (*ASIPP*), Jinggang Qin, Liang Guo (-), Teng Wang (*ASIPP*), Tong Li (*Institute of Plasma Physics Chinese Academy of Sciences*), Yanlan Hu (-) and Yu WU (*ASIPP*)

Mon-Mo-Po1.05-04 [57]: The application of TSTC based on ReBCO tapes in CFETR CS magnet design

Yong Ren, Dongquan Wang and Xinghao Wen (*Institute of Plasma Physics, Chinese Academy of Sciences*)

Mon-Mo-Po1.05-05 [58]: Seismic analysis of the CFETR central solenoid model coil

Fan Wu (*a. Institute of Plasma Physics, Chinese Academy of Sciences; b. University of Science and Technology of China*), Xiaogang Liu, Zhaoliang Wang, Yong Ren (*Institute of Plasma Physics, Chinese Academy of Sciences*), Junjun Li (*Institute of Plasma Physics Chinese Academy of Sciences*) and Xiang Gao (*Institute of Plasma Physics, Chinese Academy of Sciences*)

Mon-Mo-Po1.05-06 [59]: Optimization design and mechanical analysis of the CFETR TF coil

Xiaogang Liu, Fan Wu (*Institute of Plasma Physics, Chinese Academy of Sciences*), Zhaoliang Wang (-), Junjun Li (*Institute of Plasma Physics Chinese Academy of Sciences*), Yong Ren and Xiang Gao (*Institute of Plasma Physics, Chinese Academy of Sciences*)

Mon-Mo-Po1.05-07 [60]: The CFETR CSMC Nb3Sn coil heat treatment process research

Song Jian (*Institute of Plasma Physics Chinese Academy of Sciences*), Wu Yu (*Institute of Plasma Physics, CAS*) and Jinggang Qin (-)

Mon-Mo-Po1.05-08 [61]: Effects of Resonance Phenomenon caused by Power Supply on JT-60SA CS

Hirotakaka Meguro, Kazuya Nakamura, Shogo Sonoda, Keisuke Nasu (*Sophia university*), Haruyuki Murakami, Kyohei Natsume (*Quantum radiology Science and Technology*), Kazuma Fukui and Takaaki Isono (*National Institutes for Quantum and Radiological Science and Technology*)

Mon-Mo-Po1.05-09 [62]: Mechanical Compress Process for Pre-compression of JT-60SA Central Solenoid

Haruyuki Murakami, Katsuhiko Tsuchiya, Kaname Kizu (*National Institutes for Quantum and Radiological Science and Te*), Kazuhiro Nomoto and Yutaro Itashiki (*Mitsubishi Electric Corporation*)

09:15 - 11:15 **Level 2 Posters 2**

Mon-Mo-Po1.06 - Motors I

Session Moderators: Naoyuki Amemiya, Kyoto University and Qiuliang Wang, IEE CAS

Mon-Mo-Po1.06-01 [63]: Electromagnetic Performance Analysis of an Axial Flux Partitioned Stator Hybrid-excited less-rare-earth PM synchronous Machine

Wenjie Fan (*Jiangsu univeristy school of electrical and informantion engineering*), Xiaoyong Zhu (*School of Electrical and Information Engineering*), Lei Xu, Li Quan (*Jiangsu University*) and Xue Zhou (*Jiangsu univeristy school of electrical and information engineering*)

Mon-Mo-Po1.06-02 [64]: Study on Performance and Irreversible Demagnetization according to rotor-teeth of SPMSM

Seung-Gu Kang (*SungKyunKwan University*), Sang-Yong Jung (*Department of Electronic and Computer Engineering, Sungkyunkwan University*), Dohyun kang and SungChang Lee (*SungKyunKwan University*)

Mon-Mo-Po1.06-03 [65]: Analytical Investigation using Conformal Mapping for Fast Computation of Vernier Motor

Do Hyun Kang (*Sungkyunkwan University*), Sang-Yong Jung (*Department of Electronic and Computer Engineering, Sungkyunkwan University*), Dae-Woo Kim, Young-Yoon Ko (*Sungkyunkwan University*) and Yong-Jae Kim (*Chosun university*)

Mon-Mo-Po1.06-04 [66]: A Study on a New Structure Ferrite Magnet Motor with Improved Output Density and Mechanical Stability

Kidoek Lee, Se-Hyun Rhyu and Jeong-Jong Lee (*Korea Electronics Technology Institute*)

Mon-Mo-Po1.06-05 [67]: Design and Analysis of a New Synchronous Reluctance Machine with the Aid of Grain Oriented Silicon Steel Cores

Youhua Wang (*Hebei University of technology*), Jingguang Ma (*Hebei University of Technonlgy*), Chengcheng Liu (*Hebei University of Technology*), Gang Lei (*University of Technology Sydney*) and Jianguo Zhu (*University of Sydney*)

Mon-Mo-Po1.06-06 [68]: A Saddle-shaped Post-assembly Magnetizing Coil for a 300 kW 2-pole High-speed Permanent Magnet Rotor

Yiliang Lv, Dong Xia, Bangduo Xu and Liang Li (*Huazhong University of Science and Technology*)

Mon-Mo-Po1.06-07 [69]: Demagnetization Analysis and Design Optimization of Permanent Magnet Synchronous Motor for Electric Power Steering Applications

Weihua Huang, Junchen Zhao, Jin Wang and Libing Zhou (*State Key Laboratory of Advanced Electromagnetic Engineering and Technology, Schoole of Electrical and Electronic Engineering, Huazhong University of Science and Technology*)

Mon-Mo-Po1.06-08 [70]: A Study on the NVH Characteristic Analysis of a Teeth-Concentrated Winding Motor

Iksang Jang (*Hyundai Mobis*) and Won-Ho Kim (*Gachon University*)

Mon-Mo-Po1.06-09 [71]: A study on IE5 class synchronous reluctance motor design using Co-analysis

Jae-Kwang Lee (*hanyang university*), Hyunwoo Kim (-), Sol Kim (*Yuhan university*) and Ju Lee (*Hanyang University*)

Mon-Mo-Po1.06-10 [72]: A study on the design of BLDC Slot-less PM motor using Response Surface Method

Dong-Hoon Jung, Hyunwoo Kim (-), Hyungkwan Jang and Ju Lee (*Hanyang University*)

Mon-Mo-Po1.06-11 [73]: A Study on the Design of IPMSM for Reliability of Demagnetization Characteristics-based Rotor

Geochul Jeong (*Hanyang University*), Hyunwoo Kim (-), Hyungkwan Jang and Ju Lee (*Hanyang University*)

Mon-Mo-Po1.06-12 [74]: Design of Coreless PM motor using with non-magnetic tooth-slot structures using 3D printing technology

Dong-Hoon Jung, Hyunwoo Kim, Seungheon Lee (-) and Ju Lee (*Hanyang University*)

Mon-Mo-Po1.06-13 [75]: Design of High Torque Density Magnet Coupling Using Halbach Magnet Array Structure

Huai Cong Liu (*Hanyang Univ.*), Hyungkwan Jang (*Hanyang University*), Hyunwoo Kim (-), Ho-Joon Lee (*Busan Institute of Science & Technology University*) and Ju Lee (*Hanyang University*)

09:15 - 11:15 Level 2 Posters 2

Mon-Mo-Po1.07 - Motors II

Session Moderators: Naoyuki Amemiya, Kyoto University and Qiuliang Wang, IEE CAS

Mon-Mo-Po1.07-01 [76]: Study on Analysis Method of Asymmetric Permanent Magnet Assistance Synchronous Reluctance Motor Considering Magnetic Neutral Plane Shift

Hyunwoo Kim, Hyungkwan Jang and Ju Lee (*Hanyang University*)

Mon-Mo-Po1.07-02 [77]: Study on Inter-turn Fault Diagnosis of the Six-Phase Interior Permanent Synchronous Motor Using d-Axis Current

Hyunwoo Kim, Seungheon Lee and Ju Lee (*Hanyang University*)

Mon-Mo-Po1.07-03 [78]: A Study on the effect of Eddy Current Loss and Demagnetization Characteristics by the Direction of Magnet division

Byungchan kim and Dong-woo Kang (*Keimyung University*)

Mon-Mo-Po1.07-04 [79]: The Study on the rotor design for LSPMSM considering the Starting Torque and Magnetic Saturation

Won-Ho Kim (*Gachon University*)

Mon-Mo-Po1.07-05 [80]: Superconducting stage actuation

Gudrun De Gersem (*ASML Netherlands, B.V.*), Bart de Bruyn (*Prodrive Technologies*) and Roger Hamelinck (*Entechna*)

Mon-Mo-Po1.07-06 [81]: Comparison and Optimization of Permanent Magnet Assisted Synchronous Reluctance Machine

Ding Yuanbo, Sun Songjun and Yang Kai (*State Key Laboratory of Advanced Electromagnetic Engineering and Technology, Huazhong University of Science and Technology*)

Mon-Mo-Po1.07-07 [82]: Stator MMF Equation of Three-phase Motor Considering Sub-Harmonics for Analyzing Electromagnetic Vibration

Iksang Jang (*Hyundai Mobis*) and Won-Ho Kim (*Gachon University*)

Mon-Mo-Po1.07-08 [83]: Study on the Design Process of the Spoke Type Permanent Magnet Synchronous Motor Considering Magnetization Performance

Sung Gu Lee (*Busan University of Foreign Studies*), Won-Ho Kim (-), Jaenam Bae (*Dongyang Mirae University*) and Kwangsoo Kim (*Halla University*)

Mon-Mo-Po1.07-09 [84]: Design of SMC core in Axial-Flux Motor with 3D Printing

Hyun-Jo Pyo (*Gachon University*), Sung Gu Lee (*Busan University of Foreign Studies*), Suyeon Cho (*KATECH*), Hyung-Sik Kong, Min-Jae Jeong, Dong-Woo Nam and Won-Ho Kim (*Gachon University*)

Mon-Mo-Po1.07-10 [85]: Optimized design of segmented magnet considering demagnetization and vibration analysis of IPMSG for ISG

Byungchan Kim and Dong-woo Kang (*Keimyung University*)

Mon-Mo-Po1.07-11 [86]: Analysis of Characteristics of Permanent Magnet Synchronous Machines with Novel Topology of Fractional-Slot Concentrated Winding

Linwei Hu, Kai Yang and Songjun Sun (*Huazhong University of Science and Technology*)

Mon-Mo-Po1.07-12 [87]: Design and Experimental Verification of Limited Angle Rotary Torque PM Motor for Control Valve with Self-Alignment Characteristic

Gang-Hyeon Jang (*Chungnam National University, Korea*), Chang-Woo Kim, Sung-Won Seo, Ick-Jae Yoon, Hae-Won Lee (*Chungnam National University*) and Jang-Young Choi (*Department of Electrical Engineering, Chungnam National University*)

09:15 - 11:15 Level 3 Posters

Mon-Mo-Po1.08 - Cryostats and Cryogenics

Session Moderators: Hongyu Bai, NHMFL and Alexey Dudarev, CERN

Mon-Mo-Po1.08-01 [88]: Models Codes for the Sizing of a Cryogenic System for a dry-cooled SMES demonstrator

Luigi Affinito (*ENEA*), Antonio Morandi (-), Simonetta Turtu' (*ENEA/ICAS*), Umberto Melaccio (*UNIBO*), carlo ferdeghini (*CNR*), Matteo Tropeano (-) and Chiara Gandolfi (*RSE*)

Mon-Mo-Po1.08-02 [89]: The Cryogenic Thermosiphon for the CEPC Solenoid

Wang Meifen, Baotang Zhang (*State Key Laboratory of Particle Detection and Electronics, Institute of High Energy Physics, Chinese Academy of Science,*), Hou Zhilong (*State Key Laboratory of Particle Detection and Electronics, Institute of High Energy Physics, Chinese Academy of Science*), Ning Feipeng (*State Key Laboratory of Particle Detection and Electronics, Institute of High Energy Physics, Chinese Academy of Science,*), Yang Huan, Zhao Ling (*State Key Laboratory of Particle Detection and Electronics, Institute of High Energy Physics, Chinese Academy of Science*) and Zian Zhu (*IHEP Beijing*)

Mon-Mo-Po1.08-04 [90]: Development of Cryostats for Superconducting Magnets at IHEP

Miaofu Xu (*Institute of High Energy Physics, CAS*), Rui Ge (*IHEP,CAS*), Fusan Chen, Xiangzhen Zhang (*Institute of High Energy Physics, CAS*), Yingshun Zhu, Rui Ye (*Institute of High Energy Physics,Chinese Academy of Sciences*), Huihua Lu (*Institute of High Energy Physics, CAS*) and Shaopeng Li (*IHEP*)

Mon-Mo-Po1.08-05 [91]: Subcooled superfluid helium cryostat for Nb3Sn CICC model coil

Min Shi, Junjie Li and Zheng Rong Ouyang (*High Magnetic Field Laboratory, Chinese Academy Sciences*)

Mon-Mo-Po1.08-06 [92]: A solid nitrogen cooling system for HTS magnets

Zhen Luo, Guangtong Ma and Xingchao Nie (*Southwest jiaotong university*)

Mon-Mo-Po1.08-07 [93]: A 1-4 K cryogenic system with low vibration, low EMI, light weight and long life

Haizheng Dang (*State Key Laboratory of Infrared Physics, Shanghai Institute of Technical Physics, Chinese Academy of Sciences*)

Mon-Mo-Po1.08-08 [94]: A long-life, high-capacity and high-efficiency cryogenic system based on the Stirling-type pulse tube cryocooler developed for high-Tc superconducting applications

Haizheng Dang (*State Key Laboratory of Infrared Physics, Shanghai Institute of Technical Physics, Chinese Academy of Sciences*)

Mon-Mo-Po1.08-09 [95]: AC operation characteristics of conduction-cooled HTS magnet for ADR

Sangkwon Jeong, Bokeum Kim, Dohoon Kwon and Yejun Yang (*KAIST*)

Mon-Mo-Po1.08-10 [96]: Nab Spectrometer Magnet System

Roger Mitchell and Jeremy Good *(Cryogenic Ltd)*

09:15 - 11:15 **Level 3 Posters**

Mon-Mo-Po1.09 - Levitation and Magnetic Bearings I

Session Moderators: Guangtong Ma, Southwest Jiaotong University and Mochimitsu Komori, Kyushu Institute of Technology

Mon-Mo-Po1.09-01 [97]: 3D modeling and analysis of superconducting tape stack conductors for uniform trapped field

Yang Wenjiang, Liu Zhaoxin (-), Li Xiaodong and Zhu Jiahui (*China*)

Mon-Mo-Po1.09-02 [98]: Magnetic levitation using stacks of commercial superconducting tapes

Hanxin Ye and Wei Wang (*Sichuan University*)

Mon-Mo-Po1.09-03 [99]: Improvement of magnetic levitation force of YBCO superconductor

Sang Heon Lee (*Department of Electronic Engineering, Sunmoon University*)

Mon-Mo-Po1.09-04 [100]: Analysis to the forced vibration of a high temperature superconducting system with hysteresis

Zhao Xian-Feng, Tang Sheng-wen, Yuan Liu and Lu-Quan Yang (*Lanzhou Jiaotong University*)

Mon-Mo-Po1.09-05 [101]: Levitation characteristics of a magnetic bearing with a superconducting stator from CC tapes

Dmitry Abin, Sergei Pokrovskii, Maxim Osipov, Irina Anischenko, Alexandr Starikovskii, Alexsey Podlivaev and Igor Rudnev (*National Research Nuclear University MEPhI (Moscow Engineering Physics Institute)*)

Mon-Mo-Po1.09-06 [102]: Design and Analysis of Coaxial Magnetic Gears Considering the Electromagnetic Performance and Mechanical Stress

Jeong-In Lee, Kyung-Hun Shin (*Chungnam National University*), Tae-Kyoung Bang (*Republic of Korea /Chungnam National University*), Hoon Ki Lee (*ChungNam National Unversity*), Jeong-Hoi Gu (*Chungnam National University*) and Jang-Young Choi (*Department of Electrical Engineering, Chungnam National University*)

Mon-Mo-Po1.09-07 [103]: Design and Analysis of a Special Lateral Suspension Coil for a Spherical Superconducting Rotor

Hao Wang, Xinning Hu, Chunyan Cui, Hui Wang and Qiuliang Wang (*Institute of Electrical Engineering, Chinese Academy of Sciences*)

Mon-Mo-Po1.09-08 [104]: Structure and Electromagnetic Characteristics according to Pole Piece Supporter Material of Magnetic Gear

Eui-Jong Park (*Chosun University*), Sang-Yong Jung (*Sungkyunkwan university*) and Yong-Jae Kim (*Chosun university*)

Mon-Mo-Po1.09-09 [105]: Electromagnetic Analysis of Linear Magnetic Gears according to the Characteristics of their Flux-Modulation Poles

Sung-Won Seo, Gang-Hyeon Jang, Chang-Woo Kim (*Chungnam National University*), Jang-Young Choi and Ick-Jae Yoon (*Department of Electrical Engineering, Chungnam National University*)

Mon-Mo-Po1.09-10 [106]: Self-sensing Modeling of Rotor Displacement for Six-pole Hybrid Magnetic Bearing Based on Improved Particle Swarm Optimization Support Vector Machine

Tiantian Liu, Huangqiu Zhu and Mengyao Wu (*Jiangsu University*)

Mon-Mo-Po1.09-11 [107]: Parameter Optimization Design of Six-pole AC Hybrid Magnetic Bearings Considering Variable Stiffness

Mengyao Wu and Huangqiu Zhu (*Jiangsu University*)

Mon-Mo-Po1.09-12 [108]: Decoupling Control Based on Active Disturbance Rejection Control of Six-pole Radial-axial Active Magnetic Bearing

Shaoshuai Wang, Huangqiu Zhu and Mengyao Wu (*Jiangsu University*)

09:15 - 11:15 **Level 3 Posters**

Mon-Mo-Po1.10 - Levitation and Magnetic Bearings II

Session Moderators: Guangtong Ma, Southwest Jiaotong University and Mochimitsu Komori, Kyushu Institute of Technology

Mon-Mo-Po1.10-01 [109]: Optimal Design and Performance Analysis of Six-pole Hybrid Magnetic Bearing

Gai Liu (-), Huangqiu Zhu and Mengyao Wu (*Jiangsu University*)

Mon-Mo-Po1.10-02 [110]: Dynamic behaviors of the axial levitation force for the radial-type superconducting magnetic bearings

Liwang Ai, Guomin Zhang (*Key Laboratory of Applied Superconductivity, Institute of Electrical Engineering,Chinese Academy of Sciences*) and Li Wanjie (*Institute of electrical engineering, Chinese academy of science*)

Mon-Mo-Po1.10-03 [111]: Rotational test of integrated magnetic bearing using multiple HTS cubic bulk units.

Kazuhito YAMAGISHI (*Yokohama National University*) and Jun Ogawa (*Niigata University*)

Mon-Mo-Po1.10-04 [112]: Dynamic Characteristics in The Horizontal Direction for New Type SMB Using SC Bulk and SC Coil

Mochimitsu Komori, Ayako Wada, Asami Ken-ichi and Nobuo Sakai (*Kyushu Institute of Technology*)

Mon-Mo-Po1.10-05 [113]: Characteristics Comparison of Magnetic Gears According to Permanent Magnet Material

Eui-Jong Park (*Chosun University*), Sang-Yong Jung (*Sungkyunkwan university*) and Yong-Jae Kim (*Chosun university*)

Mon-Mo-Po1.10-06 [114]: Design, fabrication and testing of a 15-m long YBCO magnet-based linear synchronous motor for EDS train

Guangtong Ma, Zhengwei Zhao, Kang Liu, Tianyong Gong, Weihai Zhang, Jing Li, Le Han, Yao Cai, Yiyu Wang and Ruichen Wang (*Southwest jiaotong University*)

Mon-Mo-Po1.10-07 [115]: Design and optimization of closed-loop NI-HTS coils for a prototype EDS-Maglev system

Wei Wu (*Shanghai Jiao Tong University*), Xin Yu (*Shanghai Superconductor Technology Co., Ltd.*), Yunhao Pan, Jie Sheng, Xiao-Fen Li (*Shanghai Jiao Tong University*), Jiamin Zhu, Sikan Chen (*Shanghai Superconductor Technology Co., Ltd.*), Nan Shao, Dangwei Duan (*CRRC Changchun Railway Vehicles Co., LTD.*), Zhiyong Hong and Zhijian Jin (*Shanghai Jiao Tong University*)

Mon-Mo-Po1.10-08 [116]: Magnetic Levitation Characteristics of HTS bulk above new type of Electromagnets for HTS Maglev

Chaoqun Zhao, Ying Xin, Wei Hong, Yuyan Wen, Hui Jin and Wenxin Li (*Tianjin University*)

Mon-Mo-Po1.10-09 [117]: A quadratic approximation method for the limit value of magnetic stiffness in a high temperature superconducting levitation system

Xian-Feng Zhao, Zi-Yang Sun, Yuan Liu and Lu-Quan Yang (*Lanzhou Jiaotong University*)

Mon-Mo-Po1.10-10 [118]: Design of a Fan-shaped Electromagnetic Guideway for HTS Maglev and Analysis of its Performances

Wei Hong, Ying Xin, Chaoqun Zhao, Yuyan Wen, Tianhui Yang and Changqi Wang (-)

Mon-Mo-Po1.10-11 [119]: Demagnetization performance of Superconducting Permanent Magnets under Vibration in Electrodynamic-suspension Levitation System

Jie Sheng, Wei Wu, Zhen Huang, Zhijian Jin and Xiaofen Li (*Shanghai Jiao Tong University*)

11:15 - 12:45 **Regency AB**

Mon-Mo-Or1 - Fusion II: Projects Around the World

Session Moderators: Alfredo Portone, Fusion for Energy/ European Commission and Boris Stepanov, EPFL

11:15 **Mon-Mo-Or1-03: Challenges of Superconducting Magnet System and Development of TF Prototype Coil of CFETR**
Jinxing Zheng, Song Yuntao, Lu Kun, Liu Xufeng, Li Jiangang and Wei Jing (*Institute of Plasma Physics, Chinese Academy of Sciences*)

11:30 **Mon-Mo-Or1-01 [Invited]: The conceptual design of the DTT superconducting magnet system**
Aldo Di Zenobio, Luigi Muzzi (*ENEA*), Simonetta Turtu' (*ENEA/ICAS*), Luigi Affinito, Alessandro Anemona (*ENEA*), Roberto Bonifetto (*Politecnico di Torino*), Valentina Corato, Chiarasole Fiamozzi Zignani, Lorenzo Giannini, Giuseppe Messina, Luigi Morici, Gherardo Romanelli (*ENEA*), Laura Savoldi, Andrea Zappatore, Roberto Zanino (*Politecnico di Torino*), Lorenzo Zoboli and Antonio della Corte (*ENEA*)

12:00 **Mon-Mo-Or1-02: Design of the inter-coil structures and supports of the DTT magnet system**
Alessandro Anemona (-), Aldo Di Zenobio, Luigi Muzzi (*ENEA*), Simonetta Turtu' (*ENEA/ICAS*), Lorenzo Giannini (*ENEA*), Gherardo Romanelli (*Tratos*), Lorenzo Zoboli and Antonio della Corte (*ENEA*)

12:15 **Mon-Mo-Or1-04: Design of CFETR TF Prototype Coil**
Yu Wu, Yi Shi, Kun Lu (*ASIPP*), Jinggang Qin (-), Xufeng Liu (*ASIPP*), Qiangwang Hao (-), Junjun Li (*Institute of Plasma Physics Chinese Academy of Sciences*), Yanlan Hu, Yezhen Xiao, Guang Shen (*ASIPP*), Houxiang HAN (-), Jin Wei (*ASIPP*), Chao Fang (*Insitute of Plasma Physics Chinese Academy of Sciences*), Dapeng Yin and Jiangang Li (*ASIPP*)

12:30 **Mon-Mo-Or1-05: Updates on the conceptual design of the European DEMO superconducting magnet system**
Valentina Corato (*ENEA*), Alessandro Anemona (*ICAS*), Nadezda Bagrets (*Karlsruhe Institute of Technology – KIT*), Alberto Brighenti, Roberto Bonifetto (*Politecnico di Torino*), François Bonne (*CEA/SBT*), Daniela Boso (*University of Padova*), Pierluigi Bruzzone (*EPFL-SPC*), Vincenzo D'Auria (*EPFL - EPF Lausanne*), Mattia Dan (*Consorzio RFX*), Antonio della Corte

(*ENEA*), Aleksandra Dembkowska (*West Pomeranian University of Technology*), Ortensia Dicuonzo (*EPFL-SPC*), Aldo Di Zenobio (*ENEA*), Walter Fietz (*KIT*), Elena Gaio (*Consorzio RFX*), Lorenzo Giannini (*ENEA*), Reinhard Heller (*Karlsruhe Institute of Technology*), Christine Hoa (*CEA SBT*), Ilia Ivashov (*Forschungszentrum Jülich GmbH*), Mithlesh Kumar (*PSI - Paul Scherrer Institut*), Benoît Lacroix (*CEA IRFM*), Monika Lewandowska (*West Pomeranian University of Technology, Szczecin*), Alberto Maistrello (*Consorzio RFX*), Nicolas Mantel (*CEA*), Luigi Morici, Luigi Muzzi (*ENEA*), Sylvie Nicollet (*CEA IRFM*), Arend Nijhuis (*University of Twente*), Francois Nunio (*CEA*), Gherardo Romanelli (*Tratos*), Xabier Sarasola (*EPFL*), Laura Savoldi (*Politecnico di Torino*), Kamil Sedlak (*EPFL Lausanne*), Boris Stepanov (*EPFL-SPC*), Ion Tiseanu (*INFLPR*), Giordano Tomassetti (*ENEA*), Alexandre Torre (*CEA*), Simonetta Turtu' (*ENEA/ICAS*), Davide Uglietti (-), Christian Vorpahl (*EUROfusion*), Klaus-Peter Weiss (*KIT, Institute for Technical Physics*), Rainer Wesche (*EPFL*), Michael Wolf (*Karlsruhe Institute of Technology (KIT)*), Louis Zani (*CEA*) and Roberto Zanino (*politecnico di torino*)

11:15 - 12:45 **Regency CD**

Mon-Mo-Or2 - HTS Magnets I

Session Moderators: Satoshi Awaji, Tohoku University and Hubertus Weijers, NHMFL/FSU

11:15 **Mon-Mo-Or2-01: Technology for Compact CORC Multi-Layer Solenoid and Racetrack Coils**
Tim Mulder, Alexey Dudarev (*CERN*), Sander Wessel (*University of Twente*), Jeremy Weiss, Danko van der Laan (*Advanced Conductor Technologies*) and Herman Ten Kate (*CERN*)

11:30 **Mon-Mo-Or2-02: High-field magnets wound from CORC® cables and wires**
Jeremy Weiss, Danko van der Laan (*Advanced Conductor Technologies*), Dmytro Abraimov, James Gillman (*FSU, NHMFL, ASC*), Xiaorong Wang, H Higley (*Lawrence Berkeley National Laboratory*), Soren Prestemon (*LBNL*) and Ramesh Gupta (*BNL*)

11:45 **Mon-Mo-Or2-03: Critical Current and Quench Characteristics of a ReBCO 2G Roebel Cable Pancake Coil at Different Temperatures between 4.2K and 77K in an External Field up to 10T**
Yifeng Yang (*University of Southampton (GB)*), Edward Young (*University of Southampton*), Anna Kario (*GSI Helmholtzzentrum für Schwerionenforschung GmbH*), Alexander Usoskin (-) and Luca Bottura (*CERN*)

12:00 **Mon-Mo-Or2-04: Bi-2212 Coil Technology Development Efforts at the National High Magnetic Field Laboratory**
Youngjae Kim (*Applied Superconductivity Center, National High Magnetic Field Laboratory, Florida State University*), Ulf Trociewitz (*ASC-NHMFL*), Ernesto Bosque (*Applied Superconductivity Center, National High Magnetic Field Laboratory, Florida State University*), Daniel Davis

(*FSU/NHMFL*), Charles English, Jianyi Jiang, Eric Hellstrom (*Applied Superconductivity Center, National High Magnetic Field Laboratory, Florida State University*), S Imam Hossain (*National High Magnetic Field Laboratory, Florida State University, Tallahassee*), Yavuz Oz (*National High Magnetic Field Laboratory*), Shaon Barua (*National High Magnetic Field Laboratory, Florida State University*), James Gillman (*FSU, NHMFL, ASC*), George Miller (*Applied Superconductivity Center, National High Magnetic Field Laboratory, Florida State University*), Jun Lu (*National High Magnetic Field Laboratory*), Jeremy Levitan (*NHMFL*), David Larbalestier (*National High Magnetic Field Laboratory*) and Lance Cooley (ASC/NHMFL/FSU)

12:15 **Mon-Mo-Or2-05: 25T High Field Bi-2212 Magnet Development**
Michael Coffey (*CRYOMAGNETICS INC*) and Stephen Minter (*Cryomagnetics, Inc.*)

12:30 **Mon-Mo-Or2-06: Stress concentration for high field HTS insert: difficulties and countermeasures**
Jianhua Liu (*Institute of Electrical Engineering, Chinese Academy of Sciences*), Qiuliang Wang (-), Lei Wang, Yaohui Wang, Lang Qin and Hongbo Sun (*Institute of Electrical Engineering, Chinese Academy of Sciences*)

11:15 - 12:45 **Regency EF**

Mon-Mo-Or3 - Quench and Normal Zone Behavior I

Session Moderators: Fedor Gömöry, Institute of Electrical Engineering, Slovak Academy and Haigun Lee, Korea University

11:15 **Mon-Mo-Or3-06: Calibration, validation and application of a novel 1D thermal-hydraulic/electric model for the quench analysis of the Al-slotted core HTS conductor for fusion applications**
Andrea Zappatore (*Politecnico di Torino*), Andrea Augieri (*ENEA, Italy*), Roberto Bonifetto (*Politecnico di Torino*), Giuseppe Celentano (-), Laura Savoldi (*Politecnico di Torino*), Angelo Vannozzi (*ENEA, Italy*) and Roberto Zanino (*politecnico di torino*)

11:30 **Mon-Mo-Or3-01: Methods for performance diagnostics for Nb3Sn accelerator magnets in the CERN superconducting magnet test facility**
Gerard Willering, Marta Bajko, Hugo Bajas, Luca Bottura, Vincent Jeremy Desbiolles (*CERN*), Michal Duda (*IFJ PAN*), Jerome Feuvrier, Lucio Fiscarelli, Franco Julio Mangiarotti (*CERN*), Daniel Turi (*Hungarian Academy of Sciences (HU)*) and Marcus Wallin (*Linkoping University (SE)*)

11:45 **Mon-Mo-Or3-02: Overall critical current in tapes and devices made from superconductors with critical current fluctuating along the wire length**
Fedor Gömöry, Ján Šouc and Miroslav Adamek (*Institute of Electrical Engineering, Slovak Academy of Sciences*)

12:00 **Mon-Mo-Or3-03: Use of Silicon Carbide Varistors For Quench Protection of Superconducting Magnets in Cryogenic Environments**
Jeff Robertson (*M&I Materials*), Andrew Twin, David Warren (*Oxford Instruments*) and Dominic Coll (*M&I Materials*)

12:15 **Mon-Mo-Or3-04: Cable Quench Simulations and Current Sharing in REBCO Conductors Wound on Round Cores (CORC) for High Field Accelerator Magnet**
Honghai Song (*Brookhaven National Laboratory*) and H. Allen Hung (*Brookhaven National Laboratory, and Stony Brook University*)

12:30 **Mon-Mo-Or3-05: Quench Behaviour of Multi-Layer High Temperature Superconducting CORC Cables used in Hybrid Electric Aircraft**
Zixuan Zhu (-), Yawei Wang, Xiaoze Pei (*University of Bath*), Min Zhang and Weijia Yuan (*University of Strathclyde*)

14:30 - 16:30 Level 2 Posters 1

Mon-Af-Po1.11 - HTS Magnets II

Session Moderators: Ernesto Bosque, ASC - NHMFL and Yoshinori Yanagisawa, RIKEN

Mon-Af-Po1.11-01 [1]: Experiment and simulation of the magnetic field produced by the HTS magnet magnetized by the flux pump
Xi Yuan, Yinshun Wang, Wei Pi (*North China Electric Power University*), Chuanbing Cai (*Shanghai University*), Yukai Qiao (*North China Eletric Power University*) and Yueyin Wang (*North China Electric Power University*)

Mon-Af-Po1.11-02 [2]: A Concentrically Arranged Joint-less HTS Coil System for Persistent Current Mode Operation
Miyeon Yoon, Woo-Seok Kim, Seyeon Lee (*Korea Polytechnic University*), Ji-Kwang Lee (*Woosuk University*), Gye-Won Hong and Kyeongdal Choi (*Korea Polytechnic University*)

Mon-Af-Po1.11-03 [3]: A new way to solve the critical current degradation of YBCO coils by ice
Yunfei Tan (*Huazhong University of Science and Technology*)

Mon-Af-Po1.11-04 [4]: Progress in the Development of a 25 T All Superconducting Magnet with Small-Scale YBCO Insert Coil
Xintao Zhang (*the Institute of Plasma Physics, Chinese Academy of Sciences, University of Science and Technology of China*), Huajun Liu (*Chinese Academy of Sciences*), Yi Shi (*ASIPP*), Fang Liu, Hongjun Ma (*the Institute of Plasma Physics, Chinese Academy of Sciences*), Chao Tian and Huang Chen (*the Institute of Plasma Physics, Chinese Academy of Sciences*)

Mon-Af-Po1.11-05 [5]: Stress analysis of the 32 T superconducting magnet at the MagLab including screening current effects

Mark Bird (*FSU*), Hubertus Weijers (*NHMFL/FSU*), Frederic Trillaud (*Universidad Nacional Autónoma de México*), Francesco Grilli (*Karlsruhe Institute of Technology*), Victor Zermeno (*NKT*), Dylan Kolb-Bond, Iain Dixon (*NHMFL-FSU*) and Edgar Berrospe-Juarez (*UNAM*)

Mon-Af-Po1.11-06 [6]: HTS Solenoid for Neutron Scattering

Robert Weggel (*Particle Beam Lasers, Inc*) and Ramesh Gupta (*BNL*)

Mon-Af-Po1.11-07 [7]: Design and experimental results of a Bi2223 superconducting magnet cooling by a free-piston Stirling cryocooler

Chao Li (*WST*) and Wei Liu (-)

Mon-Af-Po1.11-08 [8]: Development of a Bi-2212 Solenoid Insert Coil in a 14T Superconducting Magnet

Huang Chen (*Institute of Plasma Physics, Chinese Academy of Sciences, University of Science and Technology of China*), Hua-jun Liu (*the Institute of Plasma Physics, Chinese Academy of Sciences*), Fang Liu, Yi Shi, Jinggang Qin, Hongjun Ma and Chao Tian (*Institute of Plasma Physics, Chinese Academy of Sciences*)

Mon-Af-Po1.11-09 [9]: Development of Bi-2212 high temperature superconducting magnet

Lifeng Bai, Qingbing Hao, Xiaoyan Xu, Guoqing Liu, Gaofeng Jiao and Chengshan Li (*Northwest Institute for Nonferrous Metal Research*)

Mon-Af-Po1.11-10 [10]: Screen-Current Overstressing of REBCO Coil: An Experimental and Analytical Study with Small REBCO Coils

Yi Li (*Francis Bitter Magnet Laboratory/Plasma Science and Fusion Center, Massachusetts Institute of Technology*), Dongkeun Park (*Massachusetts Institute of Technology*), Yoonhyuck Choi (*Francis Bitter Magnet Laboratory/Plasma Science and Fusion Center, Massachusetts Institute of Technology*), Juan Bascuñàn (*Francis Bitter Magnet Laboratory/Plasma Science and Fusion Center, Massachusetts Institute of Technology*) and Yukikazu Iwasa (-)

14:30 - 16:30 Level 2 Posters 1

Mon-Af-Po1.12 - Losses in Conductors and Coils I

Session Moderators: Juan Bascuñàn*, MIT and Pasquale Fabbricatore, INFN Genova*

Mon-Af-Po1.12-04 [11]: AC Loss Estimation of HTS coils wound stacked HTS conductors

Yungil Kim (*SuNAM Co.,Ltd*), Ji-Kwang Lee (*Woosuk University*), Seyeon Lee, Woo-Seok Kim (*Korea Polytechnic University*), Hunju Lee (*SuNAM Co., Ltd.*) and Kyeongdal Choi (*Korea Polytechnic University*)

Mon-Af-Po1.12-05 [12]: AC loss evaluation of a novel 2G HTS narrow-stacked wires with 1 mm width

Zhuyong Li (*Shanghai Jiao Tong University*), Yingying Lv (*Guangdong Power Grid Corporation*), Fei Gu, Mingyang Wang (*Shanghai Jiao Tong University*), Li Li, Yunsong Luo and Yajun Xia (*Guangdong Power Grid Corporation*)

Mon-Af-Po1.12-06 [13]: An Improved AC loss Calculation Method Based on H-formulation for HTS Magnets with Iron Core

Yu Zhang (*Huazhong University of Science and Technology*)

Mon-Af-Po1.12-07 [14]: Magnetization Loss estimation of HTS Solenoid Coils wound with striated CORC

Jisung Goo (*Korea Polytechnic University*), Ji-Kwang Lee (*Woosuk University*), Seyeon Lee (*Korea Polytechnic University*), Yungil Kim (*SuNAM Co.,Ltd*), Woo-Seok Kim and Kyeongdal Choi (*Korea Polytechnic University*)

Mon-Af-Po1.12-08 [15]: Numerical Modelling of Dynamic Resistance in Parallel Connected Stacks of ReBCO Tapes

Justin Brooks (*Robinson Research Institute, Victoria University of Wellington*), Mark Ainslie (*University of Cambridge*), Rod Badcock (*Robinson Research Institute, Victoria University of Wellington*), Chris Bumby (*Robinson Research Institute,The MacDiarmid Institute of Advanced Materials and Nanotechnology, Victoria University of Wellington,*), Zhenan Jiang and Stuart Wimbush (*Robinson Research Institute, Victoria University of Wellington*)

Mon-Af-Po1.12-09 [16]: Analysis of AC Loss of Annular Magnet Based on 3D Model and Reduced-Dimensional Inversion

Shuqiang Guo (-), Yuejin Tang, Ying Xu, Li Ren, Jing Shi and Jingdong Li (*Huazhong University of Science and Technology*)

Mon-Af-Po1.12-10 [17]: Additional AC loss properties of three-strand parallel conductors composed of Y-based superconducting tapes

Takuma Furukawa (*Kyushu University*), Miura Shun (*Kyushu Univ.*) and Iwakuma Masataka (-)

Mon-Af-Po1.12-11 [18]: Time constants of coupling currents in superconducting cables for accelerator magnets

Pasquale Fabbricatore (*INFN e Universita Genova (IT)*), Andrea Traverso (*INFN and Università di Genova*), Umberto Gambardella (*INFN - National Institute for Nuclear Physics*), Sergio Burioli (*INFN Genova*), Gerardo Iannone and Domenico D'Agostino (*INFN Sezione di Napoli*)

Mon-Af-Po1.12-12 [19]: Numerical Study on AC Loss of HTS Coil with AC Transport Current around Silicon Steel Sheet under an External Magnetic Field

Xiaoyong Xu and Zhen Huang (*Shanghai Jiao Tong University*)

14:30 - 16:30 Level 2 Posters 1

Mon-Af-Po1.13 - Magnets for NMR

Session Moderators: Hubertus Weijers, NHMFL/FSU and Yoshinori Yanagisawa, RIKEN

Mon-Af-Po1.13-01 [20 & 21] [Invited]: Towards a 1.3 GHz (30.5 T) NMR: Persistent-mode NMR magnet with superconducting joints between high-temperature super-conductors

Yoshinori Yanagisawa, Renzhong Piao, Yu Suetomi (*RIKEN*), Kazama Yamagishi (*Sophia University*), Toshio Yamazaki, Masato Takahashi (*RIKEN*), Takeshi Ueno, Tomoaki Takao (*Sophia University*), Kotaro Ohki, Takashi Yamaguchi, Tatsuoki Nagaishi

(*Sumitomo Electric Industries, Ltd.*), Hitoshi Kitaguchi (*National Institute for Materials Science*), Yasuyuki Miyoshi, Masatoshi Yoshikawa, Mamoru Hamada, Kazuyoshi Saito (*Japan Superconductor Technology, Inc.*), Kenichi Hachitani (*JEOL RESONANCE Inc.*), Yoshitaka Ishii (*Tokyo Institute of Technology*) and Hideaki Maeda (*Japan Science and Technology Agency*)

Mon-Af-Po1.13-02 [22]: Reaching Field Uniformity of One Part Per Billion and Below
Rainer Meinke and Shashi Manikonda (*AML*)

Mon-Af-Po1.13-03 [23]: Ultra-high field NMR superconducting magnet design with conduction-cooled cryostat system
Yaohui Wang (*Institute of Electrical Engineering, Chinese Academy of Sciences*), Qiuliang Wang (-), Hongyi Qu and Chaoqun Niu (*Institute of Electrical Engineering, Chinese Academy of Sciences*)

Mon-Af-Po1.13-04 [24]: Design and Analysis of a Multi-Bore NMR Magnet Array
Jaemin Kim, Jeonghwan Park, Jeseok Bang, Uijong Bong, Jung Tae Lee (*Seoul National University*), Soobin An (*SeoulNationalUniversity*), Chaemin Im, Seong Hyeon Park (*Seoul National University*), Young Jin Hwang, Jae young Jang, SangGap Lee (*Korea Basic Science Institute*) and Seungyong Hahn (*Seoul National University*)

Mon-Af-Po1.13-05 [25]: Design Methodology for Ferromagnetic Shimming of HTS NMR Magnets Using a Stacked Multilayer Shim
Hongmin Yang (*Kunsan National University*), Jae young Jang, Young Jin Hwang, SangGap Lee (*Korea Basic Science Institute*), Seungyong Hahn (*Seoul National University*) and Minchul Ahn (*Kunsan National University*)

Mon-Af-Po1.13-06 [26]: A Comparative Study on Inductance and Force Calculation of Multiple Coaxial Solenoid Coils for NMR/MRI Magnet
Quanyue Liu, Sangjin Lee (*Uiduk University, Gyeongju, Republic of Korea*), Yoonhyuck Choi and Dongkeun Park (*Francis Bitter Magnet Laboratory / Plasma Science and Fusion Center, Massachusetts Institute of Technology*)

14:30 - 16:30 Level 2 Posters 1

Mon-Af-Po1.14 - Electrical Insulation for Magnets

Session Moderators: Andries den Ouden, Radboud University and Chao Li, University of Cambridge

Mon-Af-Po1.14-01 [27]: A Study on the Dielectric Characteristics of Epoxy Resin according to Surface Roughness
Minkyung Jeong, Daewone Han, Onyou Lee, Hongseok Lee and Hyoungku Kang (*Korea National University of Transportation*)

Mon-Af-Po1.14-02 [28]: Transient Voltage Analysis of Air-Core Coils with Large Section
Chuan Li, Chengjin Qian, Jiawei Li and Pengyu Wang (*Huazhong University of Science and Technology, Wuhan, 430074, China*)

Mon-Af-Po1.14-03 [29]: New types of organic resins for insulation of warm magnets
Kazuhiro Tanaka, Hitoshi Takahashi and Erina Hirose (*KEK, High Energy Accelerator Research Organization*)

Mon-Af-Po1.14-04 [30]: Mechanical characterisation of Nb3Sn cable insulation systems at ambient and cryogenic temperature used for HL-LHC accelerator magnets.

Felix Josef Wolf, Arnaud Pascal Foussat, Sandra Tavares, Stefano Sgobba, Mickael Denis Crouvizier and Remy Gauthier (*CERN*)

Mon-Af-Po1.14-05 [31]: A Study on Improving the Electrical Stability of a High Voltage Superconducting Magnet

Onyou Lee, Minkyung Jeong, Daewone Han, Hongseok Lee and Hyoungku Kang (*Korea National University of Transportation*)

Mon-Af-Po1.14-06 [32]: A clean production line for conductors insulation preparation

Federico Quagliata Tamisari (*ICAS*), Massimo Seri (*TRATOS Cavi*), Alessandro Anemona (*ICAS*), Albano Bragagni (*TRATOS Cavi*), Sandro Chiarelli, Antonio della Corte (*ENEA*), Andrea Formichetti (*TRATOS Cavi*) and Luigi Muzzi (*ENEA*)

Mon-Af-Po1.14-07 [33]: Partial Discharge Characteristics and Endurance Under Repetitive Square Wave Voltage for PI firm Used in Inverter-fed HTS Motors in Liquid Nitrogen

Yuntian Zhang and Wei Wang (*Sichuan University*)

14:30 - 16:30 Level 2 Posters 1

Mon-Af-Po1.15 - Multiphysics Design and Analysis II

Session Moderators: Kozo Osamura, Research Institute for Applied Sciences and William Marshall, NHMFL

Mon-Af-Po1.15-01 [34]: PITHIA: An innovative BEM/FEM simulation software for field calculations of accelerator magnets

Dimitrios Rodopoulos (*FEAC Engineering P.C. & University of Patras*), Charilaos Kokkinos (*FEAC Engineering P.C.*), Sotiris Kokkinos (*FEAC Engineering P.C. & University of Patras*), Konstantinos Loukas (*FEAC Engineering & University of Patras*), Theodoros Gortsas (*FEAC Engineering P.C. & University of Patras*), Demosthenes Polyzos (*University of Patras*) and Stefanos Tsinopoulos (*Technical Univereisty of Patras*)

Mon-Af-Po1.15-02 [35]: An electric-circuit model on the inter-tape contact resistance and current sharing for REBCO cable and magnet applications

Aurora Cecilia Araujo Martinez (*Universidad de Guanajuato*), Xiaorong Wang (*Lawrence Berkeley National Laboratory*), Soren Prestemon (*LBNL*), Qing Ji (*Lawrence Berkeley National Laboratory*) and Georfrey Humberto Israel Maury Cuna (*Universidad de Guanajuato*)

Mon-Af-Po1.15-03 [36]: Magnetic Properties Measurement and Analysis of High Frequency Core Material Considering Temperature Effect

Ming Yang, Yongjian Li (*Hebei University of Technology*), Qingxin Yang (*Tianjin University of Technology*), Changgeng Zhang (*State Key Laboratory of Reliability and Intelligence of Electrical Equipment, School of Electrical Engineering, Hebei University of Technology*) and Shuaichao Yue (*State Key Lab of Reliability and Intelligence of Electrical Equipment, Hebei University of Technology*)

Mon-Af-Po1.15-04 [37]: Numerical Analysis of a fully HTS Magnetic Bearing Under High-speed Operation

Changqing Ye (*Hohai University*), Guangtong Ma, Tianyong Gong and Wenjiao Yang (*Southwest Jiaotong University*)

Mon-Af-Po1.15-06 [38]: Expansion of the magnetic field in toroidal harmonics and correlations with the current distribution

Laura Gambini, Andrea Cristofolini and Marco Breschi (*University of Bologna*)

Mon-Af-Po1.15-07 [39]: Numerical investigation on the thermo-electro-mechanical behavior of HTS tapes

Daniela Boso (*University of Padova*), Marco Breschi (*University of Bologna*) and Andrea Musso (*Department of Electrical, Electronic and Information Engineering, University of Bologna*)

Mon-Af-Po1.15-08 [40]: Critical Temperature Prediction for a Superconductor: A Bayesian Neural Network Approach

Thanh Dung Le (*École de technologie supérieure*), Huu Luong Quach, Ji Hyung Kim (*Jeju National University*), Rita Noumeir (*Ecole de Technologie Supérieure*) and Ho Min Kim (*Jeju National University*)

Mon-Af-Po1.15-10 [41]: Dynamic Analysis of Superconducting coils at the conduction of turn-to turn fault

Hongwei Liu (*North China Electric Power University*)

Mon-Af-Po1.15-11 [42]: The design of transcranial magnetic stimulation thin core coil based on multi-objective optimization

Chang Liu (*Huazhong University of Science and Technology*), Hongfa Ding (*Wuhan National High Magnetic Field Center, Huazhong University of Science and Technology*), Xiao Fang and Zhixun Wang (*Huazhong University of Science and Technology*)

Mon-Af-Po1.15-12 [43]: Design and Quench Analysis Study on a 9 T NbTi Superconducting Magnet for Large Bore EMPS

Jae young Jang, Young Jin Hwang and Yeon Suk Choi (*Korea Basic Science Institute*)

14:30 - 16:30 **Level 2 Posters 1**

Mon-Af-Po1.16 - Quench Protection and Detection Systems II

Session Moderators: Etienne Rochepault, CEA Paris-Saclay and Minfeng Xu, GE Global Research

Mon-Af-Po1.16-01 [44]: Design of a quench detection system by implementing an optimization procedure

Giordano Tomassetti, Giuseppe Messina, Luigi Morici, Chiarasole Fiammozzi Zignani and Antonio della Corte (*ENEA*)

Mon-Af-Po1.16-02 [45]: Quasi-3D Thermal Simulation of Quench Propagation of Superconducting Magnets

Jonas Christ, Laura D'Angelo and Herbert De Gersem (*Technische Universität Darmstadt*)

Mon-Af-Po1.16-03 [46]: Quench Detection of High-Temperature Superconducting Magnet using Unsupervised Learning Method

Haeryong Jeon (*Yonsei University*), Jae young Jang (*Korea Basic Science Institute*), Minchul Ahn (*Kunsan National University*), SangGap Lee (*Korea Basic Science Institute*), Seunghak Han (*Yonsei University*), Seunghyun Song (*Korea Basic Science Institute*), Seungyong Hahn (*Seoul National University*), Tae Kuk Ko (*Yonsei University*) and Young Jin Hwang (*Korea Basic Science Institute*)

Mon-Af-Po1.16-04 [47]: Protection Studies of the HL-LHC circuits with the STEAM Simulation Framework

Matthias Mentink, Bernhard Auchmann (*CERN*), Michal Maciejewski (*Technical University of Lodz(PL)*), Emmanuele Ravaioli, Arjan Verweij, Christoph Wiesner (*CERN*), Michal Wilczek (*Lodz Technical University (PL)*) and Daniel Wollmann (*CERN*)

Mon-Af-Po1.16-05 [48]: In-field experiments with Rayleigh-backscattering Interrogated Optical Fibers

Federico Scurti (*NCSU*), Sasha Ishmael (*Lupine Materials and Technology*) and Justin Schwartz (*Penn State University*)

Mon-Af-Po1.16-06 [49]: Working principle analysis and Parameter optimization of snubber circuit applied in 100kA quench protection system

Wei Tong (*Institute of Plasma Physics, Chinese Academy of Sciences, Science island Branch, University of Science and Technology of China*), Zhiquan Song, Peng Fu, Hua Li (*Institute of Plasma Physics, Chinese Academy of Sciences)*, Kun Wang (*Institute of Plasma Physics, Chinese Academy of Sciences; Science island Branch, University of Science and Technology of China*) and Chuan Li (*International Joint Research Laboratory of Magnetic Confinement Fusion and Plasma Physics, Huazhong University of Science and Technology*)

14:30 - 16:30 **Level 2 Posters 2**

Mon-Af-Po1.17 - Fusion III: ITER

Session Moderators: Marco Breschi, University of Bologna and Geonwoo Baek, Yonsei University

Mon-Af-Po1.17-02 [54]: Cold Testing of ITER Toroidal Field Winding Packs

Eckhard Theisen (*Babcock Noell*), Wolfgang Walter (*Bilfinger Noell GmbH*), Piergiorgio Aprili, Boris Bellesia (*Fusion for Energy*), Alessandro Bonito oliva (*F4E*), Paolo Barbero, Marco Bolla (*Simic spa*), Friedhelm Herzog, Thomas Kutz (*Messer GmbH*), Katrin Heyn, Martin Krichler, Holger Scheller and Achim Sendner (*Bilfinger Noell GmbH*)

Mon-Af-Po1.17-03 [55]: Comparison of FEM Predicted and Measured values of the TF coil closure welding distortion

Marc Jimenez (*Fusion for Energy*), Edoardo Pompa (*SETIS*), Gabriele D'Amico, Boris Bellesia and Alessandro Bonito-Oliva (*Fusion for Energy*)

Mon-Af-Po1.17-05 [56]: F4E Procurement of the Pre-Compression Rings made of pultruded composite material

Alessandro Bonito Oliva (*F4E*), Angela Hernandez Sanchez, Charalampos Kostopoulos, Eduardo Pozuelo, Eva Boter (*Fusion For Energy*), Jacques Silva Ribeiro (*CNIM*), Ken Libens (*Fusion for Energy*), Maria Paz Casas Lino (*Unknown*), Marie-Elise Bardon (*CNIM*), Narcis Pellicer, Samuli Heikkinen (*Fusion for Energy*) and Thierry Boutboul (*CERN*)

Mon-Af-Po1.17-06 [57]: ITER Pre Compression Ring Test Facility FEM analysis

Luigi Reccia (*Fusion for Energy*) and Luigi Semeraro (*F4E*)

14:30 - 16:30 Level 2 Posters 2

Mon-Af-Po1.18 - Fusion IV: Thermohydraulics, Mechanical, and AC Losses

Session Moderators: Lucas Brouwer, LBNL and Daniela Boso, University of Padova

Mon-Af-Po1.18-01 [58]: Advanced mechanical modeling of cyclically loaded cable-in-conduit conductors for fusion magnets

Rebecca Riccioli, Alexandre Torre (*CEA, Cadarache, France*), Damien Durville (*MSSAT, CentraleSupelec, Université Paris Saclay, France*), Marco Breschi (*Departement of Electrical, Electronic and Information Engineering, University of Bologna, Italy*), Frédéric Lebon (*University of Aix-Marseille, France*) and Vladimir Tronza (*Iter Organization*)

Mon-Af-Po1.18-02 [59]: CICCs coupling losses: Analytical COLISEUM model enhancement and experimental cross-checks

Maxime Chiletti (*CEA Cadarache*), Tomasso Bagni (*U. Twente*), Jean Luc Duchateau, Bernard Turck (*CEA*), Louis Zani (*CEA Cadarache*), Ajend Nijhuis (*U. Twente*), Frederic Topin (*AMU*), Alexandre Louzguiti (*CERN*), Denis Arranger, Manuel Tena, Julien Llorens and Guillaume Jiolat (*CEA Cadarache*)

Mon-Af-Po1.18-03 [60]: Effect of flow unbalance on the operational performance of the KSTAR PF1UL magnet with the parallel cooling channel

HyunJung Lee (*National Fusion Research Institute*)

Mon-Af-Po1.18-04 [61]: AC Loss Analysis on the KSTAR PF1L Coil Based on Long-Term Operation Data

Jung Tae Lee (*Seoul National University*), Jinsub Kim (*NFRI*), HyunJung Lee, Yong Chu (*National Fusion Research Institute*), Kwang Pyo Kim (*NFRI*), Jeseok Bang (*Seoul National University*), Kaprai Park (*NFRI*) and Seungyong Hahn (*Seoul National University*)

Mon-Af-Po1.18-05 [62]: Design of Quench Protection System for K-DEMO TF Magnet

Yong Chu (*National fusion research institute*)

Mon-Af-Po1.18-06 [63]: Quench analysis of the CFETR TF Coil Using the Gandalf Code

Xinghao Wen (*University of Science and Technology of China*), Junjun Li, Yong Ren and Dongquan Wang (*Institute of Plasma Physics, Chinese Academy of Sciences*)

Mon-Af-Po1.18-07 [64]: Thermal-hydraulic analysis of high temperature superconducting magnets in CFETR

Junjun Li (*Institute of Plasma Physics, Chinese Academy of Sciences*), Xinghao Wen (*University of Science and Technology of China*), Xiaogang Liu, Zhaoliang Wang, Yong Ren and Xiang Gao (*Institute of Plasma Physics, Chinese Academy of Sciences*)

Mon-Af-Po1.18-08 [65]: Operational Analysis of KSTAR CS Magnet

Yong Chu (-)

Mon-Af-Po1.18-09 [66]: A pressure drop model for helium flow in Cable-in-Conduit conductors based on porous media analogy

Zhicai Ma and Yuanwen Gao (*Lanzhou University*)

14:30 - 16:30 Level 2 Posters 2

Mon-Af-Po1.19 - Power Supplies and Flux Pumps I

Session Moderators: Daniel Davis, FSU/NHMFL and Patrick Noyes, Lockheed Martin

Mon-Af-Po1.19-01 [67]: Design and test of the power supply for a fast kicker magnet

Wenjie Han, Bin Qin, Xu Liu, Guanqun Li and Dong Li (*Huazhong University of Science and Technology*)

Mon-Af-Po1.19-02 [68]: The design and analysis of superconductor magnet power supply for high field MRI

Tianli Dai (*1.Institute of Plasma Physics,Chinese Academy. 2 University of Science and Technology of China*), Chao Zhou (*Institute of Plasma Physics, Chinese Academy of Sciences, Hefei, Anhui, China*), Jinggang Qin (-), Xiaoning Liu (*High Magnetic Field Laboratory,Chinese Academy of Sciences*) and Jiangang Li (*ASIPP*)

Mon-Af-Po1.19-03 [69]: Design and Implementation of SoC Embedded Waveform Acquisition System for Surveillance and Diagnostics of Pulsed Magnets Power Supplies

Chih-Yu Liao, Yung-Sen Cheng, Chun-Yi Wu, Demi Lee, Kuo-Hwa Hu and Kuo-Tung Hsu (*NSRRC*)

Mon-Af-Po1.19-04 [70]: Modelling and measurements of stator vs magnet width effects in high-Tc superconducting dynamos.

Ratu Mataira (*Robinson Research Institute, Victoria University of Wellington*), Rod Badcock (*Victoria University of Wellington*), Mark Ainslie (*University of Cambridge*) and Chris Bumby (*Victoria University of Wellington*)

Mon-Af-Po1.19-05 [71]: Study of stator design for rotating type HTS Flux pump

Jun Ma, Jianzhao Geng, Chao Li (*University of Cambridge*), James Gawith (-), Boyang Shen, Jiabin Yang and Timothy Coombs (*University of Cambridge*)

Mon-Af-Po1.19-06 [72]: Efficiency analysis and improvement of Transformer-rectifier flux pump for high current magnets

Qihuan Dong (*University of Cambridge*)

Mon-Af-Po1.19-09 [73]: Contactless Magnetizing Technology Based on YBCO High Temperature Superconducting Tape

Yujia Zhai and Ziwei Tan (*Hunan University*)

14:30 - 16:30 **Level 2 Posters 2**

Mon-Af-Po1.20 - Stability of Conductors and Coils I

Session Moderators: Etienne Rochepault, CEA Paris-Saclay and Minfeng Xu, GE

Mon-Af-Po1.20-01 [74]: Thermal, Electrical and Mechanical Behaviors of Metal-as-Insulation HTS Coils Wound with Commercial REBCO Tapes under High Background Magnetic Fields at 4.2 K

Jungbin Song (*LNCMI-CNRS*), Xavier Chaud (*LNCMI-EMFL-CNRS, Univ. Grenoble Alpes, INSA, UPS*), Benjamin Borgnic (*LNCMI-EMFL-CNRS*), Francois Debray (*CNRS*), Philippe Fazilleau (*cea*) and Thibault Lecrevisse (*Université Paris-Saclay (FR)*)

Mon-Af-Po1.20-02 [75]: Performance Study on the No-Insulation HTS Coil wound with Narrow-Stacked wire

Mingyang Wang, Zhuyong Li (*Shanghai Jiao Tong University*), Meng Song and NanNan Hu (*Guangdong Power Grid Corporation*)

Mon-Af-Po1.20-03 [76]: Improvement on Temporal Stability of HTS No-insulation Coil by Enhancing Transverse Resistivity

Yanqing Lu, Yinshun Wang and Xini Lou (-)

Mon-Af-Po1.20-04 [77]: Experimental Study of Quench Performance for YBCO Coated Conductors

Panpan Chen (-)

Mon-Af-Po1.20-05 [78]: Thermal and electric characteristics of no insulation REBCO coil with conduction plates and epoxy impregnation

Seokho Kim (*Changwon National University*), Chang-young Lee (*Korea Railroad Research Institute*), Jeongmin Mun (*changwon national university*), Changhyung Lee, Kideok Sim (*Supergenics*) and Minwon Park (*Changwon National University*)

Mon-Af-Po1.20-06 [79]: Study on the effect of metallic protection ring in no-insulation HTS coils

Daisuke Nishikawa, Hiroshi Ueda, Seokbeom Kim and Takahiro Tatsuta (*Okayama University*)

Mon-Af-Po1.20-07 [80]: Influence of coil size and operating temperature on transient stability in multi-stacked no-insulation REBCO pancake coil system

Atsushi Ishiyama, Haruka Onoshita, Yuka Yoshihara (*Waseda University*), So Noguchi (*Hokkaido University*) and Hiroshi Ueda (*Okayama University*)

Mon-Af-Po1.20-08 [81]: Evaluation on transient stability in no-insulation REBCO pancake coil with multiple defects

Atsushi Ishiyama, Haruka Onoshita, Mai Hamanaka (*Waseda University*), So Noguchi (*Hokkaido University*), Hiroshi Ueda (*Okayama University*), Tomonori Watanabe and Shigeo Nagaya (*Chubu.Electric.Power Co., Inc.*)

Mon-Af-Po1.20-09 [82]: Millisecond Dynamic Effects During Sudden Discharge and Cycling Characteristics of an HTS Stainless-Steel-Insulated Double Pancake Coil

Honghai Song (*Brookhaven National Laboratory*) and Magdelena Allen (*University of California*)

14:30 - 16:30 **Level 3 Posters**

Mon-Af-Po1.21 - Motors III

Session Moderators: Kyeongdal Choi, Korea Polytechnic University and Vicente Climente-Alarcon, University of Cambridge

Mon-Af-Po1.21-01 [88]: Optimization design of Stator Notch Shape of Brushless DC Motor by Response of Surface Method

Yongdae So and Dongwoo Kang (-)

Mon-Af-Po1.21-02 [89]: Analysis of Design and Mechanical Properties of AISG with Brush and Slip-Ring Structure

Jun-Young Kim (*University of Hanyang*), Dongwoo Kang (-), Hyun-Soo Seol (*Hanyang University*), Dong-Hoon Jung (-), Jongsuk Lim (*Hanyang university*), Myung-Sik Jung (*University of Hanyang*), Hyunwoo Kim and Ju Lee (*Hanyang University*)

Mon-Af-Po1.21-03 [90]: Study on Inter-turn Fault Diagnosis of Interior Permanent Magnet Synchronous Motor through Finite Element Analysis

Hyunwoo Kim, Seungheon Lee and Ju Lee (*Hanyang University*)

Mon-Af-Po1.21-04 [91]: A study on Improvement of Power Density and Efficiency of Permanent Magnet BLDC motor

Yeji Park, Seungheon Lee, Hyunwoo Kim (*Hanyang University*), Sang-Hwan Ham (*Kyungil University*) and Ju Lee (*Hanyang University*)

Mon-Af-Po1.21-05 [92]: Design and Analysis of a Multi-Flux-Modulated Permanent Magnet Motor

Weiling Pu (*jiangsu univeristy school of electrical and information engineering*), Li Quan (*School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China*), Xiaoyong Zhu (*School of Electrical and Information Engineering*), Zixuan Xiang (-) and Min Jiang (*Jiangsu univeristy school of electrical and information engineering*)

Mon-Af-Po1.21-06 [93]: Research on the positive airgap harmonics for a flux-modulated permanent magnet motor

Xiaoyong Zhu (*School of Electrical and Information Engineering*), Min Jiang (*Jiangsu univeristy school of electrical and information engineering*), Zixuan Xiang (-), Wenru Chen (*Jiangsu univeristy school of electrical and informantion engineering*), Weiling Pu (*jiangsu univeristy school of electrical and information engineering*) and Xue Zhou (*jiangsu university school of electrical and information engineering*)

Mon-Af-Po1.21-07 [94]: Experimental Verification and Semi-3D Analysis Techniques of BLDC Motor with Permanent Magnet Overhang and Housing-Integrated Rotor Core

Hyo-Seob Shin (*Chungnam National University*), Jang-Young Choi (*Department of Electrical Engineering, Chungnam National University*), Gang-Hyeon Jang (*Chungnam National University, Korea*), Kyung-Hun Shin, Seong-Tae Kim and In-Seong Song (*Chungnam National University*)

Mon-Af-Po1.21-08 [95]: Analysis and detection of demagnetization fault of Bearingless Permanent Magnet Slice Motor

Wei Zhang, Huangqiu Zhu, Ying Xu and Mengyao Wu (*Jiangsu University*)

Mon-Af-Po1.21-09 [96]: Design and Optimization of A Novel Axial-Radial Flux Permanent Magnet Machine for Higher Power Density and Lower Cogging Torque

Songjun Sun, Feng Jiang, Tianle Li, Baichuan Xu and Kai Yang (*State Key Laboratory of Advanced Electromagnetic Engineering and Technology， School of Electrical and Electronic Engineering， Huazhong University of Science and Technology*)

Mon-Af-Po1.21-10 [97]: Design of 8p12s IPMSM for Minimization of Electromagnetic Noise and Vibration

Iksang Jang (*Hyundai Mobis*) and Won-Ho Kim (*Gachon University*)

Mon-Af-Po1.21-11 [98]: A Study on the Improvement of the Correction Coefficient Considering the 3D Effect of Spoke Type Permanent Magnet Synchronous Motor

Sung Gu Lee (*Busan University of Foreign Studies*), Won-Ho Kim (-), Jaenam Bae (*Dongyang Mirae University*) and Kwangsoo Kim (*Halla University*)

Mon-Af-Po1.21-12 [99]: Design and Analysis of A Partitioned-Rotor and Staggered-Stator Hybrid Excited Flux Switching Permanent Magnet Machine for Hybrid Electric Vehicles

Xue Zhou (*jiangsu university school of electrical and information engineering*), Xiaoyong Zhu (*School of Electrical and Information Engineering*), Lei Xu (*Jiangsu University*), Wenjie Fan (*Jiangsu univeristy school of electrical and informantion engineering*) and Min Jiang (*Jiangsu univeristy school of electrical and information engineering*)

Mon-Af-Po1.21-13 [100]: Design of New Novel Shape Rotor by Inductance Changes for Power Improvement and Extended Operating Range

Hyungkwan Jang (*Hanyang University*), Chang-Sung Jin (*Wonkwang University*), Seung Heon Lee and Ju Lee (*Hanyang University*)

14:30 - 16:30 Level 3 Posters

Mon-Af-Po1.22 - Motors IV

Session Moderators: Kyeongdal Choi, Korea Polytechnic University and Vicente Climente-Alarcon, University of Cambridge

Mon-Af-Po1.22-01 [101]: Comparison of Different Stator Winding Structures on Rotating Performance of Fully High-Temperature Superconducting Induction/Synchronous Motor

Liangliang Wei, Taketsune Nakamura (*Kyoto University*), Masaaki Yoshikawa, Yoshitaka Itoh and Toshihisa Terazawa (*Imra Material R&D Company, Ltd., Japan*)

Mon-Af-Po1.22-02 [102]: Design and Evaluation of Prototype High-Tc Superconducting Linear Synchronous Motor for High-speed Transportation

Chang-Young Lee, Jin-Ho Lee (*Korea Railroad Research Institute*), Seokho Kim (*Changwon National University*), Yoon Do Chung (*Suwon Science College*), Jung-youl Lim, Kwan-Sup Lee, Suyong Choi, Jung-min Jo (*Korea Railroad Research Institute*) and Hunju Lee (*SuNAM Co., Ltd.*)

Mon-Af-Po1.22-03 [103]: Development of a New Axial Flux Machine with the Ability of Mechanical Flux Weakening

Youhua Wang, Jiawei Lu, Chengcheng Liu (*Hebei University of technology*), Gang Lei (*University of Technology Sydney*) and Jianguo Zhu (*University of Sydney*)

Mon-Af-Po1.22-06 [104]: Influence of architecture of composite superconducting tape-based stacks on AC demagnetization for electric machines application

Anis Smara, Vicente Climente-Alarcon, Nikolay Mineev (*ASCG, Department of Materials Science & Metallurgy, University of Cambridge*), Łukasz Tomków (*27 Charles Babbage Rd, Cambridge CB3 0FS, UK*) and Bartlomiej Glowacki (*ASCG, Department of Materials Science & Metallurgy, University of Cambridge*)

Mon-Af-Po1.22-07 [105]: A Novel Flux Reversal Claw Pole Machine with Soft Magnetic Composite Cores

Chengcheng Liu (*Hebei University of Technology*), Youhua Wang (*Hebei Univeristy of Technology*), Gang Lei (*University of Technology Sydney*) and Jianguo Zhu (*University of Sydney*)

Mon-Af-Po1.22-09 [106]: Active Magnetic Equivalent Circuit Analysis Method Considering Magnetic Saturation for Delta Typed Interior Permanent Magnet Traction Motor

Dongkyu Lee and JongSuk Ro (*Chung Ang University*)

Mon-Af-Po1.22-10 [107]: Dual-rotor permanent magnet motor as an alternative to HTS motor for turbo-electric propulsion

Philippe Masson, Rainer Meinke and T.A. Aravindakshan (*AML Superconductivity and Magnetics*)

Mon-Af-Po1.22-11 [108]: Design and Analysis of a Novel Low-Speed and High-Torque Synchronous Motors with PM and Reluctance Hybrid Rotor

Zhaoyu Zhang, Siyang Yu, Fengge Zhang, Shi Jin (*Shenyang University of Technology*) and He Zhang (*University of Nottingham*)

Mon-Af-Po1.22-12 [109]: Analytical and Experimental Study of Multiphysics on Starting of a 50 kW Class Fully HTS Induction/Synchronous Motor and Its Variable Speed Controllability

Masaya Okuno and Taketsune Nakamura (*Kyoto University*)

14:30 - 16:30 Level 3 Posters

Mon-Af-Po1.23 - Transformers

Session Moderators: Sergey Fetisov, Russian Scientific R&D Cable Institute and Roberto Zanino, Politecnico di Torino

Mon-Af-Po1.23-01 [110]: Temperature Change Effects on No-Load Loss Characteristics of Amorphous Alloy Cores

Huiqi Li, Ning Wang, Yalin Yan (*Department of Electric Power Engineering, North China Electric Power University*), Guang Ma (*Global Energy Interconnection Research Institute*) and Jun Li (*Baoding Jida Electrical Power Design Co. Ltd.*)

Mon-Af-Po1.23-02 [111]: Design and Analysis of 6.9/1.0 kV-10 MVA Lightweight Superconducting Transformers with REBCO Coated Conductors

Goki Kawasaki, Hiromasa Sasa, Shun Miura, Masataka Iwakuma (*Kyushu University*), Akira Tomioka (*Fuji Electric Co., Ltd*), Masayuki Konno (*Fuji Electric Co., Ltd.*) and Teruo Izumi (*Advanced Industrial Science and Technology*)

Mon-Af-Po1.23-03 [112]: Assessment of Dielectric Breakdown Characteristics of Nomex Paper under High Frequency Overvoltages for Superconducting Power Transformer Application

Sun-Jin Kim and Bang-Wook Lee (*Hanyang University*)

Mon-Af-Po1.23-04 [113]: A New Residual Flux Measurement Method in the Power Transformer

Huo Cailing, Chengcheng Liu and Youhua Wang (*Hebei University of Technology*)

Mon-Af-Po1.23-05 [114]: Performance Evaluation of Conductor on Round Core Cables Used in Superconducting Fault Current Limiting Transformer

Wenrong Li, Haosheng Ye, Derong Qiu (*Shanghai Jiao Tong University*), Jun Ma (*Cambridge Universitry*), Zhuyong Li and Jie Sheng (*Shanghai Jiao Tong University*)

Mon-Af-Po1.23-06 [115]: Winding Design and simulation of a 120kVA/6kV single-phase HTS transformer

Tengyan Wang (-), Wei Pi, Yiran Meng, Shuwen Ma, Ziqiu Liu, Yinshun Wang and Changtao Kan (*North China Electric Power University*)

Mon-Af-Po1.23-07 [116]: AC loss calculation on a 6.5 MVA HTS traction transformer with hybrid winding structure

Zhenan Jiang, Wenjuan Song, Mike Staines, Stuart Wimbush, Rodney Badcock (*Victoria University of Wellington*) and Jin Fang (*Beijing Jiaotong University*)

Mon-Af-Po1.23-08 [117]: Residual Flux Measurement and Reduction in the Single-phase Power Transformer

Ziwei Zhao and Youhua Wang (*Hebei University of technology*)

Mon-Af-Po1.23-09 [118]: Fault Current Limiting Characteristics of Three Phase Transformer Type Superconducting Fault Current Limiter using Two Insulated Secondary Circuits

Tae-Hee Han, Shin-Won Lee (*Jungwon University*), Sung-Hun Lim (*Soongsil University*) and Seok -Cheol Ko (*Kongju National University*)

Mon-Af-Po1.23-10 [119]: Current Limiting Characteristics of Three-Phase Transformer Type Superconducting Fault Current Limiter According to Secondary Winding Methods

Sung-Hun Lim, Min-Ki Park (*Soongsil University*), Tae-Hee Han and Seok -Cheol Ko (*Jungwon University*)

Mon-Af-Po1.23-11 [120]: HTS Coil Structure Suitable for High-Power Transmission in a Short-Time in Wireless Power Transmission System for Railway Vehicle

Ryota Inoue, Kenta Igarashi, Yoh Nagasaki, Daisuke Miyagi and Makoto Tsuda (*Tohoku University*)

16:30 - 18:00 **Regency AB**

Mon-Af-Or4 - Resistive and Pulsed High Field Magnet I

Session Moderators: Mark Bird, NHMFL and Anbo Wu, GE Global Research

16:30 **Mon-Af-Or4-01: Conceptual Design Optimization of a 60 T Hybrid Magnet**
Pierre Pugnat (*LNCMI-EMFL-CNRS, UGA*) and Hans J. Schneider-Muntau (*CS&T*)

16:45 **Mon-Af-Or4-02: Preliminary Analysis on the Failure of a 100 T pulsed magnet at the WHMFC**
Houxiu Xiao (-), Tao Peng (*Wuhan National High Magnetic Field Center*), Xiaofeng Li, Shuang Wang and Liang Li (-)

17:00 **Mon-Af-Or4-03: Pulsed-Magnet Developments at the Dresden High Magnetic Field Laboratory**
Sergei Zherlitsyn, Thomas Herrmannsdoerfer and Joachim Wosnitza (*Helmholtz-Zentrum Dresden-Rossendorf*)

17:15 **Mon-Af-Or4-04: Finite Element Method (FEM) Simulations for Pulsed Magnet Design Using COMSOL Multiphysics**
Doan Nguyen and Do Vo (*Los Alamos National Laboratory*)

17:30 **Mon-Af-Or4-05: Cold Spray materials for high field magnets at the LNCMI**
Olivier Jay, Francois Debray, Christophe Trophime, Romain Raison and Mickael Pelloux (*LNCMI-EMFL-CNRS, UGA, INSA, UPS*)

17:45 **Mon-Af-Or4-06: High strength - high conductivity silver nanowire-copper composite wires by spark plasma sintering and wire-drawing for non-destructive pulsed fields**
Simon Tardieu (*Laboratoire National des Champs Magnétiques Intenses, EMFL, CNRS-INSA-UGA-UPS*), David Mesguich, Antoine Lonjon (*Université de Toulouse, CIRIMAT, CNRS-INPT-UPS, Université Toulouse 3 Paul-Sabatier*), Florence Lecouturier, Nelson Ferreira (*Laboratoire National des Champs Magnétiques Intenses, EMFL, CNRS-INSA-UGA-UPS*), Geoffroy Chevallier (*Université de Toulouse, CIRIMAT, CNRS-INPT-UPS, Université Toulouse 3 Paul-Sabatier*), Arnaud Proietti (*Université de Toulouse, Centre de Microcaractérisation Raimond Castaing, UMS 3623, Espace Clément Ader*), Claude Estournès and Christophe Laurent (*Université de Toulouse, CIRIMAT, CNRS-INPT-UPS, Université Toulouse 3 Paul-Sabatier*)

16:30 - 18:00 **Regency CD**

Mon-Af-Or5 - Detector Magnets I

Session Moderators: Lance Cooley, ASC/NHMFL/FSU and Marco Marchetto, TRIUMF

16:30 **Mon-Af-Or5-01: Magnet Designs for the Future Circular Collider ee, eh and hh Detectors**
Herman Ten Kate, Alexey Dudarev, Benoit Cure and Helder Filipe Pais Da Silva (*CERN*)

16:45 **Mon-Af-Or5-02: Status of Performance Testing of the Mu2e Transport Solenoid Coils**

Karie Badgley, Giorgio Ambrosio (*Fermilab*), Joseph DiMarco (*Fermi National Accelerator Laboratory*), Daniel Evbota (*Fermilab*), Andy Hocker (-), Michael Lamm (*Fermi National Accelerator Laboratory (FNAL)*), Vito Lombardo (*Fermi National Accelerator Laboratory*) and Thomas Strauss (*FNAL*)

17:00 **Mon-Af-Or5-03: The ALPHA-g apparatus - A precision magnet system for antimatter gravity measurement**

Mostafa Ahmadi (*University of Liverpool (GB)*), Bruno Ximenez Rodrigues Alves (*Aarhus University (DK)*), Christopher Baker (*Swansea University (GB)*), William Alan Bertsche (*University of Manchester (GB)*), Andrea Capra (*TRIUMF (CA)*), Celeste Carruth (*University of California Berkeley (US)*), Claudio Lenz Cesar (*Federal University of of Rio de Janeiro (BR)*), Mike Charlton (*Swansea University (GB)*), Snir Cohen (*At.En. Comm., Nucl. Res. Cen. Negev (IL)*), Robert Andrew Collister (*TRIUMF (CA)*), Stefan Eriksson (*Swansea University (GB)*), Andrew Evans (*University of Calgary Dep. of Phys. and Astronomy (CA)*), Nathan Andrew Evetts (*TRIUMF (CA)*), Joel Fajans (*University of California Berkeley (US)*), Tim Friesen (*University of Calgary Dep. of Phys. and Astronomy (CA)*), Makoto Fujiwara, David Russell Gill (*TRIUMF (CA)*), Jeffrey Scott Hangst (*Aarhus University (DK)*), Walter Hardy (*TRIUMF (CA)*), Mike Hayden (*Simon Fraser University (CA)*), Eric David Hunter (*University of California Berkeley (US)*), Aled Isaac (*Swansea University (GB)*), Mark Andrew Johnson (*University of Manchester (GB)*), Jack Mccauley Jones (*Swansea University (GB)*), Steven Armstrong Jones (*Aarhus University (DK)*), Svante Jonsell (*Stockholm University (SE)*), Alexander Khramov (*TRIUMF (CA)*), Peter Knapp (*Swansea University (GB)*), Leonid Kurchaninov (*TRIUMF (CA)*), Niels Madsen, Daniel Thomas Maxwell (*Swansea University (GB)*), Joseph Mc Kenna (*Aarhus University (DK)*), Scott Menary, Juan Mario Michan (*TRIUMF (CA)*), Takamasa Momose (*University of British Columbia*), Justine Joyce Munich (*Simon Fraser University (CA)*), Konstantin Olchanski, Art Olin (*TRIUMF (CA)*), Petteri Pusa (*University of Liverpool (GB)*), Chris Rasmussen (*CERN*), Francis Robicheaux (*Purdue University (US)*), Rodrigo Lage Sacramento (*Federal University of of Rio de Janeiro (BR)*), Muhammed Sameed (*University of Manchester (GB)*), Elazar Sarid (*Soreq Nucl. Research Center (IL)*), Daniel De Miranda Silveira, Darij Markian Starko (*TRIUMF (CA)*), Graham Stutter (*Aarhus University (DK)*), Chukman So (*TRIUMF (CA)*), Tim Tharp (*Aarhus University (DK)*), Robert Thompson (*University of Calgary Dep. of Phys. and Astronomy (CA)*), Dirk Peter Van Der Werf (*Swansea University (GB)*) and Jonathan Syrkin Wurtele (*University of California Berkeley (US)*)

17:15 **Mon-Af-Or5-04: Madmax: design of a very large-scale 9 T dipole for dark matter experiment**
Walid Abdel Maksoud (*CEA*), Christophe Berriaud (*Université Paris-Saclay (FR)*), Francois Munio, Francois-Paul Juster, Guillaume Dilasser (*CEA*), Jean-Michel Rifflet (-), Loris Scola and Valerio Calvelli (*CEA*)

17:30 **Mon-Af-Or5-05: Design of the BabyIAXO superconducting detector magnet system**
Nikolay Bykovskiy, Alexey Dudarev, Helder Filipe Pais Da Silva and Herman H J Ten Kate (*CERN*)

17:45 **Mon-Af-Or5-06: Design and first tests of a unique, superconducting multipole magnet for the ultracold-neutron trap PENeLOPE**
Wolfgang Schreyer (*TRIUMF*), Dominic Gaisbauer (*TU München*), Stephan Paul (*Physik Department - Technische Universitaet Muen*) and Rüdiger Picker (*TRIUMF*)

16:30 - 18:00 **Regency EF**

Mon-Af-Or6 - Cable-in-Conduit Conductors

Session Moderators: Antonio della Corte, ENEA and Simonetta Turtù, ENEA

16:30 **Mon-Af-Or6-01 [Invited]: SuperCIC: enhancing winding current density for high-field windings of tokamaks**
Peter McIntyre, Jeff Breitschopf (*Texas A&M University*), Daniel Chavez, Joshua Kellams, Akhdiyor Sattarov (*Accelerator Technology Corp.*) and Thomas Brown (*Princeton Plasma Physics Laboratory, Princeton University*)

17:00 **Mon-Af-Or6-02: Manufacturing and Test of Next Generation 100 kA @ 10 T and 4.5 K ReBCO-CORC Cable-In-Conduit Conductors for Large-Scale Magnets**
Tim Mulder, Alexey Dudarev (*CERN*), Jeremy Weiss (*Advanced Conductor Technologies and University of Colorado, Boulder*), Danko van der Laan (*Advanced Conductor Technologies*) and Herman Ten Kate (*CERN*)

17:15 **Mon-Af-Or6-03: Effect of time duration and profile of applied magnetic field alterations and transport current on AC loss and current distribution in CICC conductors for fusion**
Arend Nijhuis and Tommaso Bagni (*University of Twente*)

17:30 **Mon-Af-Or6-04: AC Loss Measurements of the DEMO TF React&Wind Conductor Prototype no. 2**
Kamil Sedlak (*EPFL Lausanne*), Pierluigi Bruzzone, Boris Stepanov (*EPFL-SPC*) and Valentina Corato (*ENEA*)

17:45 **Mon-Af-Or6-05: The design and R&D work of high performanceCICCs for CFETR TF**
Qin Jinggang (*Institute of Plsama Physics, CAS*), Wu Yu (*Institute of Plsama Physics, CAS*) and Li Jiangang (*Institute of Plsama Physics, CAS*)

18:00 – 20:00 **Level 2 and Level 3**
Exhibitor Reception

08:00 - 08:45 **Regency Ballroom**

Tuesday Plenary

Session Moderators: Soren Prestemon, LBNL

08:00 **Tu-Mo-PL2-01: Advances in Nb_3Sn Superconducting Accelerator Magnets**
Helene Felice (*CEA Paris-Saclay*)

08:45 - 10:45 **Level 2 Posters 1**

Tue-Mo-Po2.01 - Magnets for X-Rays and Neutrons

Session Moderators: Iain Dixon, NHMFL and Hitoshi Kitaguchi, National Institute for Materials Science

Tue-Mo-Po2.01-01 [1]: A large scale cryogen-free magnet for neutron decay research
Roger Mitchell and Jeremy Good (*Cryogenic Ltd*)

Tue-Mo-Po2.01-02 [2]: Development of An 10 T Superconducting Split Magnet for X-ray Diffractometer
PengCheng Huang, WenGe Chen and ZhiYou Chen (-)

08:45 - 10:45 **Level 2 Posters 1**

Tue-Mo-Po2.02 - Pulsed Magnets Technology

Session Moderators: Jun Lu, NHMFL and Doan Nguyen, LANL

Tue-Mo-Po2.02-01 [3]: Design of a 70T Quasi-Continuous High Magnetic Field System with a Dual-Coil Magnet
Hongfa Ding, Dake Li, Yiliang Lv, Yun Xu, Liang Li, Peichen Li and Yuchao Fang (*Huazhong University of Sci. & Tech.*)

Tue-Mo-Po2.02-02 [4]: Research on Repeated Pulsed High Magnetic Field Control System Based on Pulsed Generator Power Supply
Yun Xu, Peichen Li, Chao Lu, Siqi Huang, Dake Li, Yuchao Fang and Hongfa Ding (*Huazhong University of Sci. & Tech.*)

Tue-Mo-Po2.02-03 [5]: A Design Method for Repetitive Pulse High Magnetic Field System Based on Multi-objective Optimization Algorithm
Yun Xu, Junyu Chen, Siqi Huang, Peichen Li, Chao Lu, Kaiwen He and Kun Xu (*Huazhong University of Sci. & Tech.*)

Tue-Mo-Po2.02-04 [6]: Research on a Combined Power Supply of Battery and Pulsed Generator System for High Pulsed Background Magnetic Field
Yun Xu, Peichen Li, Junyu Chen, Chao Lu, Zhangfei Zhao, Hongfa Ding and Tonghai Ding (*Huazhong University of Sci. & Tech.*)

Tue-Mo-Po2.02-05 [7]: Design and Implementation of DC Pulsed Power Supply Employing Self-excited Induction Generators and Flywheels for Toroidal Field Coils of a tokamak device, Plato

Masamichi Murayama (*Tokyo Institute of Technology*), Shuhei Kato (*Nihon University*), Akihide Fujisawa (*Kyushu University*), Keisuke Matsuoka (*National Institute for Fusion Science*), Hiroaki Tsutsui, Shunji Tsuji-Iio and Ryuichi Shimada (*Tokyo Institute of Technology*)

Tue-Mo-Po2.02-06 [8]: Trapped field properties of Stacked Annular REBCO Plates by Multiple Pulsing Field in Field Cooling

Yueyin Wang, Yinshun Wang, Wei Pi, Xi Yuan (*North China Electric Power University*) and Yukai Qiao (*North China Eletric Power University*)

08:45 - 10:45 **Level 2 Posters 1**

Tue-Mo-Po2.03 - Detector Magnets II

Session Moderators: Boris Bellesia, Fusion for Energy & Christophe Berriaud, CEA/Irfu

Tue-Mo-Po2.03-01 [9]: Conceptual Design of DUNE Near Detector Superconducting Magnet System

Vladimir Kashikhin, Alan Bross (*Fermilab*), Thomas Strauss (*FNAL*), Jay Theilacker (*Fermilab, APS-TD*), Terry Tope (*Fermilab*) and Gueorgui Velev (*FNAL*)

Tue-Mo-Po2.03-02 [10]: 2D and 3D Conceptual Magnetic Design of the MADMAX Dipole

Guillaume DILASSER, Valerio Calvelli (*CEA*), Christophe Paul Berriaud (*DAPNIA*), Francois Nunio, Francois-Paul Juster (*CEA*), Jean-Michel Rifflet (-), Loris Scola and Walid Abdel Maksoud (*CEA*)

Tue-Mo-Po2.03-04 [11]: Conductor development and Cold mass design for an ultra-thin 2T, 4m bore, 6m long detector solenoid for the FCC-ee IDEA detector

Tobias Kulenkampff, Alexey Dudarev (*CERN*), Veronica Ilardi (*Twente Technical University (NL)*), Matthias Mentink, Helder Filipe Pais Da Silva and Herman Ten Kate (*CERN*)

Tue-Mo-Po2.03-05 [12]: Performance of the new ALPHA-G conduction cooled solenoid

Cristian Boffo, Hong Wu and Thomas Gerhard (*Bilfinger Noell GmbH*)

Tue-Mo-Po2.03-07 [13]: Ioffe Trap Magnet for Project 8 Experiment

Alexey Radovinsky (*MIT*), Collaboration For the Project 8 (*project8.org*), Alec Lindman (*Project 8 Colaboration, Project8.org*), Joseph Minervini (*Massachusetts Insititute of Technology*) and Joseph Formaggio (*Massachusetts Institute of Technology*)

Tue-Mo-Po2.03-08 [14]: An investigation of the electromagnetic Interactions between the CLAS12 Torus and Solenoid Superconducting Magnets at Jefferson Lab

David Kashy, Ruben Fair, Probir Ghoshal (*Jefferson Lab*) and Renuka Rajput-Ghoshal (*Jlab*)

Tue-Mo-Po2.03-10 [15]: Design and Manufacturing Assessment of a Multi-purpose Detector for NICA Collider

Simone Grillo, Roberto Repetto, Martina Neri, Alessio Capelluto, Diego Ventura and Nicolò Valle (*ASG Superconductors SpA*)

08:45 - 10:45 Level 2 Posters 1

Tue-Mo-Po2.04 - Resistive Magnets for Accelerator and Fusion I

Session Moderators: Tenming Shen, LBNL and Reed Teyber, LBNL

Tue-Mo-Po2.04-01 [16]: Physical Design of Lambertson for HEPS/SR

Yuwen Wu, Jinhui Chen, Wen Kang, Yuanyuan Guo and Zhe Duan (*Institute of High Energy Physics, Chinese Academy of Sciences*)

Tue-Mo-Po2.04-02 [17]: Optimising a Magnetic Septum with Heating Jacket

Peter Rottländer (*GSI Darmstadt*) and Carsten Muehle (*GSI Helmholtzzentrum fuer Schwerionenforschung*)

Tue-Mo-Po2.04-04 [18]: Three-Dimensional Design of Massless Septum Magnets for High Intensity Synchrotrons with Slow Beam Extraction

Yasuhiro Fuwa (*Kyoto University*)

Tue-Mo-Po2.04-05 [19]: Optimization of a Solenoid for an Electron Lens in SIS18

Alexander Kalomov (*Peter the Great St. Petersburg Polytechnic University*), Carsten Muehle, David Ondreka, Kathrin Schulte-Urlichs and Peter-Jurgen Spiller (*GSI Helmholtzzentrum fuer Schwerionenforschung*)

Tue-Mo-Po2.04-06 [20]: Magnet design of the electron cooling System for HIAF

Lixia Zhao, Lizhen Ma, Qinggao Yao, Mingbang Lv and Xiang Zhang (-)

Tue-Mo-Po2.04-07 [21]: Design and Optimization of Eddy-Current Type Thin Septum Magnet for Beam Injection of Diffraction Limited Storage Ring

Jin Tong (*(SARI-CAS(Shanghai Advanced Research Institute Chinese Academy of Sciences), SINAP(Shanghai Institute of Applied Physics Chinese Academy of Sciences),UCAS (University of Chinese Academy of Sciences)*), Ming Gu, Bo Liu, Yongfang Liu and Ruiping Wang (*SINAP/SARI-CAS*)

Tue-Mo-Po2.04-08 [22]: Design of focusing solenoids for charged particle beam applications

Ye Bai, J. Scott Price, Vasile Neculaes (*GE Global Research Center*) and Ali Safdar (*GE aviation additive*)

Tue-Mo-Po2.04-09 [23]: Optimization of the compression coil configuration in magnetic trap type magnetic compression device

Yiliang Lv, Qinglong Zhang, Tian Wu and Liang Li (*Huazhong University of Science and Technology*)

08:45 - 10:45 **Level 2 Posters 1**

Tue-Mo-Po2.05 - Mechanical Behavior I

Session Moderators: Shintetsu Kanazawa, Muroran Institute of Technology and Hyung-Seop Shin, Andong National University

Tue-Mo-Po2.05-01 [24]: Analytical formulation of mechanical stresses in no-impregnated, multi-layer solenoids

Philippe Fazilleau, Mohamad ALHarake (*cea*) and Olivier Hubert (*ENS Paris-Saclay*)

Tue-Mo-Po2.05-02 [25]: Strain characteristic exploration for a 5 T superconducting split magnet system of a multi-field test facility

Beimin Wu (*1 Key Laboratory of Mechanics on Western Disaster and Environment, College of Civil Engineering and Mechanics, Lanzhou University; 2 Institute of Modern Physics of Chinese Academy of Science*), Mingzhi Guan (*2 Institute of Modern Physics of Chinese Academy of Science*), Xingzhe Wang (*1 Key Laboratory of Mechanics on Western Disaster and Environment, College of Civil Engineering and Mechanics, Lanzhou University*), Canjie Xin (*2 Institute of Modern Physics of Chinese Academy of Science*), Youhe Zhou (*1 Key Laboratory of Mechanics on Western Disaster and Environment, College of Civil Engineering and Mechanics, Lanzhou University; 2Institute of Modern Physics of Chinese Academy of Science*), Wei Wu, Dongsheng Ni and Lizhen Ma (*2 Institute of Modern Physics of Chinese Academy of Science*)

Tue-Mo-Po2.05-03 [26]: Performance Analysis and Testing of High Temperature Superconducting Magnet Impregnated with Composite Resin

Zhenming Li, Zheng Chen, Wei Liu, Hongjie Zhang and Ming Qiu (-)

Tue-Mo-Po2.05-04 [27]: An Analytic Study on Electromechanical Conditions for Compressive Electromagnetic Stress in an HTS Magnet

Jeonghwan Park and Seungyong Hahn (*Seoul National University*)

Tue-Mo-Po2.05-05 [28]: Tensile properties of DyBaCuO low porosity bulk material melt-processed in oxygen atmosphere

Akira Murakami (*National Institute of Technology, Ichinoseki College*) and Akifumi Iwamoto (*National Institute for Fusion Science*)

Tue-Mo-Po2.05-06 [29]: Frictional Force Effects Between Superconducting Tapes on Stress–Strain Characteristics of GdBCO Magnets

Jimin Kim, Haigun Lee, Young-Gyun Kim, Kihyun Kim and Hyun Sung Noh (*Korea University*)

Tue-Mo-Po2.05-07 [30]: Micromechanical properties evaluation of BaHfO$_3$-doped EuBCO coated conductors using a microcantilever beam method

Shogo Muto, Wataru Hirata, Shinji Fujita, Yasuhiro Iijima and Masanori Daibo (*Fujikura Ltd.*)

Tue-Mo-Po2.05-08 [31]: Numerical evaluation on electromagnetic force and stress due to screening current in REBCO coil

Hiroshi Ueda, Keisuke Tokunaga, Eisuke Morikawa and SeokBeom Kim (*Okayama University*)

Tue-Mo-Po2.06 - MRI Magnets II

Session Moderators: Lionel Quettier, CEA Paris-Saclay and Shoichi Yokoyama, Mitsubishi Electric Corporation

Tue-Mo-Po2.06-01 [32]: Several Key Issues in 14 Tesla Whole body MRI Magnet development

Chao Dai (*Institute of Plasma Physics, CAS*), Yu Wu (*ASIPP*), Yongliang Zhang (*Chinses Academy of Science*) and Yi Shi (*ASIPP*)

Tue-Mo-Po2.06-02 [33]: Magnetic and Finning Force behavior on Nb3Sn Strands Subjected to Transverse Deformation for 14 T MRI Superconducting Magnet

Shi Yi (*Institute of Plasma Physics, China*)

Tue-Mo-Po2.06-03 [34]: An optimal design approach for 14T actively shielded magnetic resonance magnets

Kaihong Wu, Yu Wu, Yi Shi and Yongliang Zhang (*Institute of Plasma Physics,Chinese Academy of Science*)

Tue-Mo-Po2.06-04 [35]: Magnet design of a 7 T animal MRI scanner

Yaohui Wang (*Institute of Electrical Engineering, Chinese Academy of Sciences*), Qiuliang Wang (-), Hongyi Qu and Chaoqun Niu (*Institute of Electrical Engineering, Chinese Academy of Sciences*)

Tue-Mo-Po2.06-05 [36]: FEM modelling of superconducting whole body, actively shielded 7 T MRI segmented coil magnets wound using Nb3Sn strands

Milan Majoros, Mike Sumption (*The Ohio State University*), Xuan Peng (*Hyper Tech Research Inc.*), David Doll (*Hypertech*), Michael Tomsic (*Hyper Tech Research*) and Edward Collings (*The Ohio State University*)

Tue-Mo-Po2.06-06 [37]: Analysis of Gradient-Induced Eddy Current in a superconducting MRI Magnet

Chaoqun Niu, Qiuliang Wang, Hongyi Qu and Yang Liu (*Institute of Electrical Engineering, Chinese Academy of Sciences*)

Tue-Mo-Po2.06-07 [38]: An Optimal Target Field Approach for Passive Shimming In Superconducting MRI

Hongyi Qu, Yaohui Wang, Chaoqun Niu, Yang Liu and Qiuliang Wang (*Institute of Electrical Engineering, Chinese Academy of Sciences*)

Tue-Mo-Po2.06-08 [39]: Design of the Superconducting Main Coils Based on Variable Density Method in MRI

Hongyi Qu, Yaohui Wang, Chaoqun Niu, Lang Qin, Yang Liu and Qiuliang Wang (*Institute of Electrical Engineering, Chinese Academy of Sciences*)

Tue-Mo-Po2.06-09 [40]: On the Accurate Calculating of Coil-tissue Interactions for Ultra-high Field MRI RF Coils Using a Hybrid MoM/FDTD Algorithm

Yang Liu, Qiuliang Wang, Chaoqun Niu and Hongyi Qu (*Institute of Electrical Engineering, Chinese Academy of Sciences*)

08:45 - 10:45 **Level 2 Posters 1**

Tue-Mo-Po2.07 - MRI Magnets III

Session Moderators: Lionel Quettier, CEA Paris-Saclay and Shoichi Yokoyama, Mitsubishi Electric Corporation

Tue-Mo-Po2.07-01 [41]: Design of a Tabletop Liquid-Helium-Free, Persistent-Mode 1.5-T/90-mm MgB2 "Finger" MRI Magnet for Osteoporosis Screening

Dongkeun Park, Yoonhyuck Choi, Yi Li, Juan Bascuñàn, Yukikazu Iwasa (*Francis Bitter Magnet Laboratory / Plasma Science and Fusion Center, Massachusetts Institute of Technology*) and Hideki Tanaka (*Hitachi, Ltd.*)

Tue-Mo-Po2.07-02 [42]: Design, manufacturing and testing of a high-field 2 + 3 T MgB2 dry magnet demonstrator

Julien Avronsart (*CEA*), Christophe Paul Berriaud (*DAPNIA*), Frédéric Bouillault (*Geeps*) Clément Hilaire (*CEA*), Raphael Pasquet (*Sigmaphi*), Edouard Pepinter (*CEA*) and Thierry Schild (*ITER IO*)

Tue-Mo-Po2.07-03 [43]: Charging, Discharging, and Over-current Characteristics of Partially Insulated MgB2 Magnet Using Cr-coated MgB2 Wires

Young-Gyun Kim, Haigun Lee (*Korea University*), Jiman Kim (*Kiswire Advanced Technology*), Byeongha Yoo, Kihyun Kim (*Korea University*), Duck Young Hwang (*Kiswire Advanced Technology Co*), Ji Hyung Kim and Ho Min Kim (*Jeju National University*)

Tue-Mo-Po2.07-04 [44]: Suitable Excitation Method of REBCO MRI Magnet for Suppressing Screening Field Attenuation

Yoh Nagasaki, Masatoshi Kanamaru, Kazuki Asao, Daisuke Miyagi, Makoto Tsuda (*Tohoku University*), Hideaki Miura and Shoichi Yokoyama (*Mitsubishi Electric Corporation*)

Tue-Mo-Po2.07-05 [45]: A No-insulation YBCO Magnet using Multiple Flux Pumps as Sources to Improve Central Magnetic Field

Xueqing Wang and Wei Wang (*Sichuan University*)

Tue-Mo-Po2.07-06 [46]: A Study on the Effects of Iron Diffusion Barrier on the Magnetic Field Characteristics of MgB2 Coil

Jiman Kim (*Kiswire Advanced Technology*), Haigun Lee, Young-Gyun Kim, Byeongha Yoo and Hyun Sung Noh (*Korea University*)

Tue-Mo-Po2.07-07 [47]: Trapped filed Optimization of Superconducting Ring-shape Magnet Using Changing Waveform

Jinhong Shi, Jie Sheng, Zihao Wang and Chunjiang Guo (-)

Tue-Mo-Po2.07-08 [48]: Development and construction of an actively shielded zero boil-off 7T/700 bore magnet.

Giovanni Masullo, Martina Neri, Alessio Capelluto, Roberto Marabotto (*ASG superconductors*), Jung Soo Shin and Soon Jin Kwon (*Magnex Ms Inc.*)

Tue-Mo-Po2.08 - Resistive Magnets for Accelerator and Fusion II

Session Moderators: Helene Felice, CEA Paris-Saclay and Michele Modena, CERN

Tue-Mo-Po2.08-01 [54]: Design and Manufacture of CSNS/RCS AC Quadrupole Magnets

Changdong Deng, Wen Kang, Lei Liu, Changjun Ning, Mei Yang, Li Li, Huamin Qu, Xuwen Dai and zhanjun Zhang (-)

Tue-Mo-Po2.08-02 [55]: Radiation resistant magnets for the Super-FRS of the FAIR project

Hanno Leibrock (*GSI Helmholtzzentrum für Schwerionenforschung GmbH*), Carsten Muehle (*GSI Helmholtzzentrum fuer Schwerionenforschung*), Peter Rottländer (*GSI Darmstadt*) and Alexander Kalimov (*Peter the Great St. Petersburg Polytechnic University*)

Tue-Mo-Po2.08-03 [56]: The New Magnet System for the East Area at CERN

Roberto Lopez and Jaime Renedo Anglada (*CERN*)

Tue-Mo-Po2.08-04 [57]: The upgrade of the CERN Proton Synchrotron Booster transfer line magnets

Antony Newborough (*CERN*)

Tue-Mo-Po2.08-05 [58]: The Design and Manufacture of the 90 Degree bending Magnets for Proton Beam Therapy

Zhihong Liu, Jiefeng Wu, Jianli Wang, Liming Peng, Qiuyue Xiong and Xin Luo (-)

Tue-Mo-Po2.08-06 [59]: Design and Test of an Octupole Scanning Magnet for Proton Therapy

Lianhua Ouyang, Shengli Wang (*Shanghai Institute of Applied Physics, CAS*), Manzhou Zhang (*Shanghai Institute of Applied Physics,CAS*) and Bolei Jia (*ShanghaiTech University*)

Tue-Mo-Po2.08-07 [60]: Consideration of misalignment and fringe field of beamline elements in a proton therapy facility

Qushan Chen, Bin Qin, Lige Zhang, Wenjie Han and Xu Liu (*Huazhong University of Science and Technology*)

Tue-Mo-Po2.08-08 [61]: Correction magnet with Permanent magnets

Yoshihisa Iwashita, Yasuhiro Fuwa Yasuhiro, Masashi Abe, Tomoki Yako (*Kyoto University*) and Nobuhiro Terunuma (-)

Tue-Mo-Po2.08-09 [62]: Magnetic Property of Praseodymium Permanent Magnet at Cryogenic Temperature

Yasuhiro Fuwa (*Kyoto University*), Yoshihisa Iwashita (-), Akihiro Kondo (*University of Tokyo*) and Sagawa Masato (*Intermetallics CO., LTD.*)

08:45 - 10:45 **Level 2 Posters 2**

Tue-Mo-Po2.09 - REBCO Wires & Cables I

Session Moderators: Tetsuo Oka, Shibaura Institute of Technology and Vitaly Vysotsky, Russian Scientific R&D Cable Institute

Tue-Mo-Po2.09-01 [63]: Influence of GdBCO stoichiometry on the superconducting properties of industrial 2G HTS wire in magnetic field

Pavel Degtyarenko (*JIHT RAS*), Sergey Gavrilkin (*LPI RAS*), Alexander Molodyk, Anton Markelov (*SuperOx*), Alexey Ovcharov (*NRC Kurchatov Institute*), Samoilenkov Sergey (*JSC Superox*) and Alexey Tsvetkov (*LPI RAS*)

Tue-Mo-Po2.09-02 [64]: Mechanical properties of BaHfO3-doped EuBCO coated conductors fabricated by hot-wall PLD on IBAD template

Shinji Fujita, Shogo Muto, Yasuhiro Iijima, Masanori Daibo (*Fujikura Ltd.*), Tatsunori Okada and Satoshi Awaji (*Tohoku University*)

Tue-Mo-Po2.09-03 [65]: Design and electromagnetic characteristics study of YBCO cable for fast cycled accelerator magnet applications

Zhuoyue Du, Lizhen Ma, Wei Wu, Yuquan Chen, Enming Mei, Shijun Zheng, Xianjin Ou and Xudong Wang (*Institute of Modern Physics, Chinese Academy of Sciences*)

Tue-Mo-Po2.09-04 [66]: Determination of the thermal resistance between pressed copper-copper and copper-stainless steel interfaces for high current HTS Cable-in-Conduit Conductors

Reinhard Heller, Nadezda Bagrets, Walter H Fietz (*Karlsruhe Institute of Technology – KIT*), Laura Savoldi (*Politecnico di Torino*), Klaus-Peter Weiss, Michael J Wolf (*Karlsruhe Institute of Technology (KIT)*), Roberto Zanino and Andrea Zappatore (*Politecnico di Torino*)

Tue-Mo-Po2.09-05 [67]: Numerical Study on AC Loss of Quasi-isotropic Superconducting Strand in AC Magnetic Fields at Low Temperature

Wei Pi, Yiran Meng (*North China Electric Power University*), Tengyan Wang (-), Ziqiu Liu, Shuwen Ma, Yinshun Wang and Changtao Kan (*North China Electric Power University*)

Tue-Mo-Po2.09-06 [68]: Mechanical and electro-mechanical investigations of assembled HTS CroCo triplets

Daniel S. Nickel, Alan Preuss, Quoc H. Pham, Michael J. Wolf (*Karlsruhe Institute of Technology (KIT)*), Klaus-Peter Weiss (*KIT, Institute for Technical Physics*) and Walter H. Fietz (*KIT*)

Tue-Mo-Po2.09-07 [69]: Study on Mechanical properties of Superconducting conductor on Round Core at 77K

Wenrong Li, Haosheng Ye, Derong Qiu (*Shanghai Jiao Tong University*), Jun Ma (*Cambridge Universitry*), Zhuyong Li and Jie Sheng (*Shanghai Jiao Tong University*)

Tue-Mo-Po2.09-08 [70]: Performance Degradation of YBCO Tape with Different Stabilizing Layers under Cyclic Mechanical Stress

Ying Xu, Guilun Chen, Li Ren (*Huazhong University of Science and Technology*), Wenfu Wu (-), Jingdong Li, Jing Shi and Yuejin Tang (*Huazhong University of Science and Technology*)

Tue-Mo-Po2.09-09 [71]: Performance Degradation of YBCO Tape Under Overcurrent Considering Different Heat Exchange Conditions

Guilun Chen, Li Ren, Ying Xu, Jing Shi, Yuejin Tang and Jingdong Li (*Huazhong University of Science and Technology*)

Tue-Mo-Po2.09-10 [72]: Investigation for Thermal Stability of Quasi-isotropic Superconducting Strand Stacked by 2mm Wide REBCO Tapes With Different Sheaths

Wei Pi, Ziqiu Liu (*North China Electric Power University*), Tengyan Wang (-), Shuwen Ma, Yiran Meng, Yinshun Wang and Changtao Kan (*North China Electric Power University*)

08:45 - 10:45 **Level 2 Posters 2**

Tue-Mo-Po2.10 - REBCO Wires & Cables II

Session Moderators: Tetsuo Oka, Shibaura Institute of Technology and Vitaly Vysotsky, Russian Scientific R&D Cable Institute

Tue-Mo-Po2.10-01 [73]: Structural Modelling of HTS Cable-in-Conduit Conductor with Helically Slotted Aluminum Core for High-Field Magnet Applications

Federica Pierro, Luisa Chiesa (*Tufts University*), Giuseppe Celentano (-) and Antonio della Corte (*ENEA*)

Tue-Mo-Po2.10-02 [74]: Electromechanical analysis of simplified CORC® cable configurations: experiments and FE modeling

Anvar V A (*University Of Twente*), Varun Cherian Baby (*T.K.M. College of Engineering*), Peter G.M. Buitelaar, Rik Schrijver, Wouter Verbruggen (*University of Twente*), Tim Meulenbroeks (*Eindhoven University of Technology*), Timothy Haugan (*U.S. Air Force Research Laboratory*), Jeremy Weiss, Danko van der Laan (*Advanced Conductor Technologies*), Rijo Jacob Thomas (*T.K.M. College of Engineering*), Md Shahriar Hossain (*University of Wollongong*) and Arend Nijhuis (*University of Twente*)

Tue-Mo-Po2.10-03 [75]: Relevance of current density in copper stabilizer for quench protection of coated conductors

Xijie Luo (-), Satoru Inoue and Naoyuki Amemiya (*Kyoto University*)

Tue-Mo-Po2.10-04 [76]: Direct Measurement of Modified Interconductor Contact Resistance Values in Coated Conductor Stacks and Roebel Cables

Chris Kovacs, Mike Sumption, Milan Majoros and Edward Collings (*The Ohio State University*)

Tue-Mo-Po2.10-05 [77]: In-Field Current Transport Properties in Long Length IBAD-PLD REBCO Tapes under the Influence of Local Ic Variation

Takanobu Kiss, Kohei Higashikawa, Shohei Noda, Yukihisa Kumagai, Takumi Suzuki, Kazutaka Imamura (*Kyushu University*), wataru Hirata, Shinji Fujita, Yasuhiro Iijima (*Fujikura Ltd.*), Akira Ibi, Takato Machi (*AIST*) and Teruo Izumi (*Advanced Industrial Science and Technology*)

Tue-Mo-Po2.10-06 [78]: Extra fine filamentation with width below 100 μm by ESPC method in RE123 split wire

Shintetsu Kanazawa, Toshihiro Kuzuya, Naoki Momono, Yukihiro Kawamura and Chihiro Sekine (*Muroran Institute of Technology*)

Tue-Mo-Po2.10-07 [79]: High-field electrical transport properties of THEVA GdBa2Cu3O7 coated conductors

Mayraluna Lao, Jens Haenisch, Yingzhen Liu (*Karlsruhe Institute of Technology*), Tara Benkel (*CNRS*), Xavier Chaud (*LNCMI-EMFL-CNRS, Univ. Grenoble Alpes, INSA, UPS*), Markus Bauer (*THEVA Dünnschichttechnik GmbH*) and Bernhard Holzapfel (*KIT Karlsruhe*)

Tue-Mo-Po2.10-08 [80]: Improved performance at low temperatures of CSD-grown YxGd1-xBa2Cu3O7-BaHfO3 nanocomposite films

Manuela Erbe (*Karlsruhe Institute of Technology (KIT)*), Jens Haenisch (*Karlsruhe Institute for Technology*), Bernhard Holzapfel (*KIT Karlsruhe*), Thomas Thersleff (*Stockholm University, Department of Materials and Environmental Chemistry*), Hannes Rijckaert Rijckaert (*Ghent University, SCRiPTS, Dept. of Chemistry*) and Pablo Caydo (*Karlsruhe Institute of Technology (KIT)*)

Tue-Mo-Po2.10-09 [81]: The study of quench behavior of REBCO cables under different twist pitch and perpendicular magnetic field

Zhang Haiyang (-)

Tue-Mo-Po2.10-10 [82]: Electromechanical Performance of Practical REBCO CC tapes for Superconducting Wind Power Applications

Hyung-Seop Shin and Mark Angelo Diaz (*Andong National University*)

08:45 - 10:45 Level 3 Posters

Tue-Mo-Po2.11 - Motors V

Session Moderators: Alessandro Anemona, ENEA and Vitaly Vysotsky, Russian Scientific R&D Cable Institute

Tue-Mo-Po2.11-01 [88]: Design and Analysis of an HTS Synchronous Motor with a Hybrid Magnets Rotor

Luning Hao, Zhen Huang and Xiyuan Teng (*Shanghai Jiao Tong University*)

Tue-Mo-Po2.11-02 [89]: A Persistent-Current HTS Magnet in Solid Nitrogen Cooling at 30-40 K for Maglev Applications

Fangliang Dong, Zhen Huang, Luning Hao and Zhijian Jin (*Shanghai Jiao Tong University*)

Tue-Mo-Po2.11-03 [90]: Dynamic Characteristics Analysis Considering Instantaneous Inductance According to Mover Position of Flat-type Permanent Magnet Linear Oscillating Machines

Chang-Woo Kim (*Chungnam National University*), Gang-Hyeon Jang (*Chungnam National University, Korea*), Kyung-Hun Shin (*Chungnam National University*), Sang-Sub Jung (*R&D Dept., LG Electronics*), Junghyo Nah and Jang-Young Choi (*Department of Electrical Engineering, Chungnam National University*)

Tue-Mo-Po2.11-04 [91]: Experimental Verification and Analytical Study of Influence of Rotor Eccentricity on Electromagnetic Characteristics of Permanent Magnet Motor

Hoon Ki Lee (*ChungNam National Unversity*), Kyung-Hun Shin, Jeong-In Lee (*Chungnam National University*), Tae-Kyoung Bang (*Republic of Korea /Chungnam National University*), Dong-Wan Ryu (*ChungNam National Unversity*) and Jang-Young Choi (*Department of Electrical Engineering, Chungnam National University*)

Tue-Mo-Po2.11-06 [92]: Research on a High Torque Density Outer Rotor Flux-Modulated Machine with Sandwiched-Permanent-Magnet Topology

Zixuan Xiang, Xiaoyong Zhu and Li Quan (*School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China*)

Tue-Mo-Po2.11-07 [93]: Comparative research for a novel dual stator synchronous machine with permanent magnet-reluctance composite rotor

Yue Zhang (*Queens University Belfast*), Siyang Yu and Fengge Zhang (*Shenyang University of Technology*)

Tue-Mo-Po2.11-08 [94]: Experiments and Comparative Study of Rotor Vibration of Permanent Magnet Machines with Two Different Fractional pole/slot combinations

Tae-Kyoung Bang (*Republic of Korea /Chungnam National University*), Kyung-Hun Shin, Jeong-In Lee, Hoon Ki Lee, Han-Wook Cho, Pan-Gun Park (*Chungnam National University*) and Jang-Young Choi (*Department of Electrical Engineering, Chungnam National University*)

Tue-Mo-Po2.11-09 [95]: Unbalanced magnetic force and vibration analysis of dual mechanical port flux switching PM machine considering rotor eccentricity

Yifeng Hua (*Jiangsu univeristy school of electrical and information engineering*), Xiaoyong Zhu (*School of Electrical and Information Engineering*), Lei Xu, Li Quan (*Jiangsu University*) and Wenjie Fan (*Jiangsu university school of electrical and information engingeering*)

Tue-Mo-Po2.11-10 [96]: Cogging Force Reduction of Tubular Flux Switching Permanent Magnet Motor by Using Unsymmetrical Design Method

Shaopeng Wang, Youhua Wang, Chengcheng Liu (*Hebei University of Technology*), Gang Lei (*University of Technology Sydney*) and Jianguo Zhu (*University of Sydney*)

Tue-Mo-Po2.11-11 [97]: Investigation of High Temperature Superconducting Flux-Switching Motors with Different Secondary Structures

Ruiwu Cao (-), Lu Minghang and Shen Danni (*Nanjing University of Aeronautics and Astronautics*)

Tue-Mo-Po2.11-12 [98]: A Study on the Shape Design of a Magnetic-Geared Synchronous Motor for Improvement of Performance and Securing Rigidity

Geochul Jeong, Hyungkwan Jang (*Hanyang University*), Hyunwoo Kim (-) and Ju Lee (*Hanyang University*)

08:45 - 10:45 **Level 3 Posters**

Tue-Mo-Po2.12 - Motors VI

Session Moderators: Alessandro Anemona, ENEA and Vitaly Vysotsky, Russian Scientific R&D Cable Institute

Tue-Mo-Po2.12-01 [99]: Efficiency Improvement of Permanent Magnet BLDC with Halbach Magnet Array for Drone

Yeji Park, Seungheon Lee, Hyunwoo Kim (*hanyang university*), Sang-Hwan Ham (*Kyungil University*) and Ju Lee (*Hanyang University*)

Tue-Mo-Po2.12-02 [100]: Optimization Design of Permanent Magnet Assisted Single Winding Bearingless Synchronous Reluctance Motor

Zongyou Ji, Huangqiu Zhu, Ying Xu and Mengyao Wu (*Jiangsu University*)

Tue-Mo-Po2.12-03 [101]: Design and Analysis of a BLDC Motor with Halbach array magnets

Soohwang Chae (*Hanyang University*), Seungheon Lee (-), Hyungkwan Jang (*Hanyang University*), Sang-Hwan Ham (*Kyungil University*) and Ju Lee (*Hanyang University*)

Tue-Mo-Po2.12-04 [102]: Analysis and Design of a New Type of Less-rare-earth Hybrid-magnet Motor with Different Rotor Topologies

Yunyun Chen, Jiahong Zhuang, Yu Ding (*School of Hydraulic, Energy and Power Engineer, Yangzhou University*) and Xue Wang (*School of Electrical and Information Engineering, Jiangsu University*)

Tue-Mo-Po2.12-05 [103]: Design and Electromagnetic analysis of 2 MW Fully-Superconducting Synchronous Motors Composed of REBa2Cu3Oy coated conductors for Turboelectric Propulsion System

Ryota Sugouchi, Takuya Aikawa, Masataka Komiya, Hiromasa Sasa, Shun Miura, Masataka Iwakuma, Teruyoshi Sasayama (*Kyushu University*), Akira Tomioka (*Fuji Electric Co., Ltd*), Masayuki Konno (*Fuji Electric Co., Ltd.*) and Teruo Izumi (*Advanced Industrial Science and Technology*)

Tue-Mo-Po2.12-06 [104]: Conceptual design and electromagnetic analysis of superconducting induction motors using REBa2Cu3Oy tapes

Koichiro Ozaki, Koichi Yosida, Shun Miura, Teruyoshi Sasayama, Masataka Iwakuma (*Kyushu University*), Akira Tomioka, Masayuki Konno (*Fuji Electric Co. Ltd*) and Teruo Izumi (*Advanced Industrial Science and Technology*)

Tue-Mo-Po2.12-07 [105]: Optimized Design of Permanent Magnet Considering Thermal Demagnetization Analysis of Synchronous Motor

Jonghun Lee and Dong-woo Kang (*Keimyung University*)

Tue-Mo-Po2.12-08 [106]: Design, Fabrication, and Testing of a YBCO Racetrack Coil for an HTS Synchronous Motor with Brushless Exciter

Yunfei Gao and Wei Wang (*Sichuan University*)

Tue-Mo-Po2.12-09 [107]: Proposed Commutation Method for Performance Improvement of Brushless DC Motor

Chang-Sung Jin (*Wonkwang University*), Hyungkwan Jang (*Hanyang University*), Hyunwoo Kim (-) and Ju Lee (*Hanyang University*)

Tue-Mo-Po2.12-10 [108]: A new linear permanent magnet switched reluctance motor with segmented primary for urban rail transit

Ruiwu Cao (-), Shen Danni and Lu Minghang (*Nanjing University of Aeronautics and Astronautics*)

Tue-Mo-Po2.12-11 [109]: Analysis and Optimization of Less-rare-earth Hybrid Excitation Flux-switching Machine

Yu Ding, Yunyun Chen and Jiahong Zhuang (*School of Hydraulic, Energy and Power Engineer, Yangzhou University*)

Tue-Mo-Po2.12-12 [110]: Design and Investigation of a Dual-Stator Flux-Modulated Permanent Magnet Motor with High Demagnetization Withstand Capability

Li Quan (*School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China*) and Deyang Fan (*Jiangsu University*)

08:45 - 10:45 **Level 3 Posters**

Tue-Mo-Po2.13 - Low Tc Wires and Cables

Session Moderators: Emanuela Barzi, Fermilab and Peter Lee, FSU/ASC

Tue-Mo-Po2.13-04 [111]: FEM modeling of stability and current sharing in Nb3Sn Rutherford cables

Milan Majoros, Mike Sumption and Edward Collings (*The Ohio State University*)

Tue-Mo-Po2.13-05 [112]: The Superconducting NbTi Wire for the Superconducting Dipole Magnet for CBM Experiment at FAIR

Yury Karasev (*JSC VNIINM (Bochvar Institute)*), Vladimir Korpusov, Anton Malchenkov, Igor Gubkin, Nikolay Salunin, Evgeniy Nikulenkov (*JSC VNIINM*), Ildar Abdyukhanov (*JSC VNIINM (Bochvar Institute)*), Pavel Lukyanov, Mariya Polikarpova (*JSC VNIINM*), Nikolay Mezentsev and Alexey Bragin (*Budker Institute of Nuclear Physics*)

Tue-Mo-Po2.13-06 [113]: Study on High Jc and Low AC Losses NbTi/Cu5Ni Superconducting Wire for HIAF Magnets during recently years in WST

Qiang Guo (*WST*), Jianfeng Li (*Western Superconducting Technologies Co., Ltd.*), Jiangwei Liu, Kaijuan Yan, Pingxiang Zhang, Ruilong Wang, Xianghong Liu, Xing Qin, Yanmin Zhu and Yong Feng (*WST*)

Tue-Mo-Po2.13-07 [114]: Effects of Processing Conditions on Critical Current Density and Flux Pinning for Nb3Al Wires Fabricated by Jelly Roll Method

Yong Zhao (*Fujian Normal University*), Chang Kun Yang (*Southwest Jiaotong University*), Da Jin Zhou (*Fujian Normal University*), Guo Yan (*National Engineering Laboratory for Superconducting Materials (NELSM), Western Superconducting Technologies (WST) Co., Ltd.*), Lian Xia (*Southwest Jiaotong University*), Ping Yuan Li (*Southwest Petroleum University*), Pingxiang Zhang (*Northwest Institute for Non-ferrous Metal Research*), Xiaguang Sun (*Superconductivity and New Energy R&D Center (SNERDC), Key Laboratory of Magnetic Levitation Technologies and Maglev Trains (Ministry of Education), Southwest Jiaotong University*), Xifeng Pan (*Western Superconducting Technologies Co. Ltd.(WST)*), Yong Feng (*WST*), Yong Zhang (*Southwest Jiaotong University*), Yongliang Chen (*Superconductivity and New Energy R&D Center (SNERDC), Key Laboratory of Magnetic Levitation Technologies and*

Maglev Trains (Ministry of Education), Southwest Jiaotong University) and Zhou Yu (*Southwest Jiaotong University*)

Tue-Mo-Po2.13-08 [115]: Investigation of the Tape Shaped RHQT-Processed Nb3Al Conductors

Akihiro Kikuchi, Yasuo Iijima (*National Institute for Materials Science*), Kyohei Yamada (*Sophia University*), Shigeki Nimori (*National Institute for Materials Science*), Kiyosumi Tsuchiya (*KEK*), Xudong Wang (*High Energy Accelerator Research Organization*), Norihito Ohuchi, Akio Terashima (*KEK*), Yoshimitsu Hishinuma, Kazuya Takahata (*National Institute for Fusion Science*), Toshiyuki Mito (*National Institute for Fusion Science (NIFS)*), Shinsaku Imagawa (*National Institute for Fusion Science*), Shinji Hamaguchi (*NIFS*), Hidetoshi Oguro (*Tokai Uiversity*) and Tomoaki Takao (*Sophia University*)

Tue-Mo-Po2.13-09 [116]: Phase structure and superconducting properties of RHQT Nb3Al wires fabricated by static and dynamic rapid heating

Zhou Yu, Lian Xia (*Superconductivity and New Energy R&D Center (SNERDC), Key Laboratory of Magnetic Levitation Technologies and Maglev Trains (Ministry of Education), Southwest Jiaotong University*), Changkun Yang, Xiaguang Sun, Yongliang Chen (*Superconductivity and New Energy R&D Center (SNERDC), Key Laboratory of Magnetic Levitation Technologies and Maglev Trains (Ministry of Education), Southwest Jiaotong University*), Xifeng Pan, Guo Yan, Yong Feng (*National Engineering Laboratory for Superconducting Materials (NELSM), Western Superconducting Technologies (WST) Co., Ltd.*), Zhang Yong (*Superconductivity and New Energy R&D Center (SNERDC), Key Laboratory of Magnetic Levitation Technologies and Maglev Trains (Ministry of Education), Southwest Jiaotong University*) and Zhao Yong (*College of Physics and Energy, Fujian Normal University*)

Tue-Mo-Po2.13-11 [117]: Dimensional Changes of Nb3Sn Conductors During Heat Treatment Using Digital Image Correlation

Etienne Rochepault (*CEA Paris-Saclay*), Clement Lorin, Helene Felice (*Université Paris-Saclay (FR)*), Olivier Hubert, Karine Lavernhe and Mahmoud Abdel Hafiz (*ENS Paris-Saclay*)

Tue-Mo-Po2.13-12 [118]: Study on the defects degree and flat-rolling reduction of round wires of Nb3Sn Rutherford Cable for High-Energy Accelerators

Yanmin Zhu (*Western Superconducting Technologies Co., Ltd*), Qiang Guo (*Western Superconducting Technologies Co.*), Jianfeng Li, Jianwei Liu, Xianghong Liu (*Western Superconducting Technologies Co., Ltd.*), Yong Feng (*National Engineering Laboratory for Superconducting Materials (NELSM), Western Superconducting Technologies (WST) Co., Ltd, Xi'an 710018, China.*), Pingxiang Zhang (*Northwest Institute for Non-ferrous Metal Research*) and Kailin Zhang (*Western Superconducting Technologies Co.*)

10:45 - 12:15 **Regency AB**

Tue-Mo-Or7 - LHC Upgrade and High Field Magnets for Future Colliders

Session Moderators: Giorgio Ambrosio, Fermilab and Charlie Sanabria, Commonwealth Fusion Systems

10:45 **Tue-Mo-Or7-01: Assembly and First Test of a 15 T Nb3Sn Dipole Demonstrator**
Alexander Zlobin, Igor Novitski, Emanuela Barzi, Vadim Kashikhin, Steve Krave (*Fermilab*), Charles Orozco (*Fermi National Accelerator Laboratory*), Stoyan Stoynev (*FNAL (US)*), Thomas Strauss (*FNAL*), Daniele Turrioni (*Fermilab*), Gueorgui Velev (*FNAL*), Shlomo Caspi (-), Maxim Marchevsky (*Lawrence Berkeley National Laboratory*), Soren Prestemon (*LBNL*), Daniel Schoerling and Davide Tommasini (*CERN*)

11:15 **Tue-Mo-Or7-02: First field quality measurements of a 15 T Nb3Sn Dipole Demonstrator**
Thomas Strauss, Alexander Zlobin, Charles Orozco, Daniele Turrioni, Emanuela Barzi, Gueorgui Velev, Igor Novitski, Joseph DiMarco, Steve Krave, Stoyan Stoynev and Vadim Kashikhin (*Fermi National Accelerator Laboratory*)

11:30 **Tue-Mo-Or7-03: 3D Design of F2D2, the FCC Block-coil Short Model Dipole**
Etienne Rochepault (*Université Paris-Saclay (FR)*), Valerio Calvelli (*CEA*), Maria Durante (-), Helene Felice (*Université Paris-Saclay (FR)*), Philip Jonathan Mallon (*CEA Paris-Saclay*), Pierre Manil (*Université Paris-Saclay (FR)*) and Susana Izquierdo Bermudez (*CERN*)

11:45 **Tue-Mo-Or7-04: High Field Magnet Program for Accelerators in China: Status and Plan for Future**
Qingjin Xu (*IHEP*)

12:00 **Tue-Mo-Or7-05: Electromagnetic design, fabrication and test of LPF2: a 12-T hybrid common-coil dipole magnet with inserted IBS coil**
Chengtao Wang, Yingzhe Wang, zhan zhang, Shaoqing Wei, Ershuai Kong, Lingling Gong, Da Cheng, Zhen Zhang, Quanling Peng, Xiangchen Yang, Jianxin Zhou and Qingjin Xu (*IHEP, CAS*)

10:45 - 12:45 **Regency CD**

Tue-Mo-Or8 - High Tc Wires and Cables I

Session Moderators: Drew Hazelton, SuperPower Inc. and Venkat Selvamanickam, University of Houston

10:45 **Tue-Mo-Or8-01: Low cost transposed cables for coil windings made with REBCO 2G HTS tapes**
Alexander Otto and Linda Saraco (*Solid Material Solutions, LLC*)

11:00 **Tue-Mo-Or8-02: Recent progress on CORC® cable and wire development for magnet applications**
Danko van der Laan, Jeremy Weiss (*Advanced Conductor Technologies*), Drew Hazelton (*SuperPower Inc.*), Tim Mulder (*CERN / Twente Technical University (NL)*), Alexey Dudarev, Herman Ten Kate (*CERN*), Xiaorong Wang and Soren Prestemon (*Lawrence Berkeley National Laboratory*)

11:15 **Tue-Mo-Or8-03: Measurements of the Effect of Compressive Load on the Narrow Side of the HTS Tape**
Shresht Joshi, John Cozzolino (*Brookhaven National Laboratory*), Ramesh Gupta (*BNL*) and William Sampson (*Brookhaven National Laboratory*)

11:30 **Tue-Mo-Or8-04: Hoop stress concentration in an HTS tape coil under external magnetic fields**
Shunji Takahashi, Tomoaki Takao (*Sophia University*), Yu Suetomi, Yoshinori Yanagisawa (*RIKEN*) and Hideaki Maeda (*RIKEN/Japan Science and Technology Agency*)

11:45 **Tue-Mo-Or8-05: Effect of thermal mismatch stress and electromagnetic loads on delamination in REBCO coated conductors**
Peifeng Gao, Hao Duan, Xingzhe Wang and Youhe Zhou (*Lanzhou University*)

12:00 **Tue-Mo-Or8-06: Bi2223 persistent current coil with superconducting joint fabricated by JIM method**
Shintetsu Kanazawa (*Muroran Institute of Technology*), Yu Suetomi, Renzhong Piao, Yoshinori Yanagisawa, Hideaki Maeda (*RIKEN*), Yasuteru Mawatari, Toshihiro Kuzuya, Yukihiro Kawamura, Atsunori Kamegawa, Chihiro Sekine and Shinji Hirai (*Muroran Institute of Technology*)

12:15 **Tue-Mo-Or8-07: Superconducting joints between Bi2223/Ag tapes towards persistent current HTS magnets**
Yasuaki Takeda (*The University of Tokyo*), Takanori Motoki (*Aoyama-Gakuin Univ.*), Hitoshi Kitaguchi (*National Institute for Materials Science*), Shin-ichi Nakamura (*TEP Co., Ltd.*), Yuichi Matsutake (*Sophia Univ.*), Tsuyoshi Yagai (*Sophia University*), Yu Suetomi, Yoshinori Yanagisawa (*RIKEN*), Takayoshi Nakashima, Shinichi Kobayashi, Takeshi Kato (*Sumitomo Electric*) and Jun-ichi Shimoyama (*Aoyama Gakuin University*)

12:30 **Tue-Mo-Or8-08: Critical Current – Strain Dependence, Ic(ε), of Solenoids Wound with Bi-2212 Round Wire**
Ernesto Bosque (*National High Magnetic Field Laboratory*), Ulf Trociewitz (*ASC-NHMFL*), Youngjae Kim (*Applied Superconductivity Center, National High Magnetic Field Laboratory, Florida State University*), Daniel Davis (*FSU/NHMFL*), Lamar English (*Applied Superconductivity Center, National High Magnetic Field Laboratory, Florida State University*) and David Larbalestier (*National High Magnetic Field Laboratory*)

10:45 - 12:45 **Regency EF**

Tue-Mo-Or9 - MRI Magnets I

Session Moderators: Hitoshi Kitaguchi, National Institute for Materials Science and Michael Parizh, GE Global Reserach

10:45 **Tue-Mo-Or9-01 [Invited]: Commissioning completion of the Iseult Whole Body 11.7 T magnet**
Alain Payn (*Centre d'Etudes de Saclay (CEA-Saclay)*), Ange Lotode, Armand Sinanna (*CEA*), Arnaud Madur (*CEA Saclay*), Arnaud Roger (*CEA*), Christophe Berriaud (-), Cédric Peron, Florian Couly, Francois Nunio, Francois-Paul Juster, Frédéric Molinie (*CEA*), Graham Gilgrass (*Aimant Ltd*), Guillaume Dilasser, Guy Aubert (*CEA*), Herve Lannou (*Centre d'Etudes de Saclay (CEA-Saclay)*), Jean Belorgey (-), Jérôme Allard, Lionel Quettier, Loris Scola, Olivier Dubois (*CEA*), Philippe Bredy (*CEA Saclay*), Pierre Vedrine, Quentin Guihard, Robert Touzery, Romain Boudouin, Sandrine Faict-Bastin (*CEA*), Thierry Schild (*ITER*), Vadim Stepanov, Victor Silva, Vincent Jannot and Yannick Drouen (*CEA*)

11:30 **Tue-Mo-Or9-02 [Invited]: Development of High Stable Field REBCO Superconducting Magnet for MRI**
Shoichi Yokoyama, Hideaki Miura, Tetsuya Matsuda, Tatsuya Inoue (*Mitsubishi Electric Corporation*), Yusuke Morita (-), Ryo Eguchi, Shunsuke Otake, Hajime Tanabe, Shinji Sato (*Mitsubishi Electric Corporation*), Takanobu Kiss (*Kyushu University*), Daisuke Miyagi, Makoto Tsuda (*Tohoku University*), Taketsune Nakamura and Yasuyuki Shirai (*Kyoto University*)

11:45 **Tue-Mo-Or9-03: Development of quench tolerant epoxy impregnated REBCO coils for an HTS MRI magnet**
Konstantinos Bouloukakis (*Robinson Research Insitute*), Mark Hunter and Ben Parkinson (*Robinson Research Institute*)

12:00 **Tue-Mo-Or9-04: Magnetic, mechanical and thermal modeling of superconducting, whole-body, actively shielded, 3 T MRI magnets wound using MgB2 strands for liquid cryogen free operation**
Mike Sumption, Milan Majoros and Edward Collings (*The Ohio State University*)

12:15 **Tue-Mo-Or9-05: A Tabletop, Liquid Helium-Free, Persistent-Mode 1.5-T MgB2 "Finger" MRI Magnet: Test of a Half-Scale MRI-Quality Magnet**
Yoonhyuck Choi, Yi Li, Dongkeun Park, Juan Bascuñàn, Yukikazu Iwasa (*Francis Bitter Magnet Laboratory / Plasma Science and Fusion Center, Massachusetts Institute of Technology*) and Hideki Tanaka (*Hitachi, Ltd.*)

12:30 **Tue-Mo-Or9-06: Ultra-compact MRI System with High Temperature Superconducting Magnet**
Boyang Shen, David Menon, Ari Ercole (*University of Cambridge*), Tom Painter (*National High Magnetic Laboratory*), Michael Parizh (*GE Global Research*) and Timothy Coombs (*University of Cambridge*)

14:00 - 16:00 **Level 2 Posters 1**

Tue-Af-Po2.14 - No-Insulation Coil Technology

Session Moderators: Arnaud Badel, Tohoku University and Xavier Chaud, LNCMI-EMFL-CNRS, Univ. Grenoble Alpes, INSA, UPS

Tue-Af-Po2.14-01 [1]: Results of First Test Coil of the Integrated Coil Form Technology

Thomas Painter (*NHMFL*) and Timothy Coombs (*University of Cambridge*)

Tue-Af-Po2.14-02 [2]: Design and Performance Estimation of a 20 T No-Insulation all-REBCO User Magnet

Kwangmin Kim, Kabindra Bhattarai, Kwanglok Kim, Hongyu Bai (*National High Magnetic Field Laboratory*), Iain Dixon (*NHMFL-FSU*), Thomas Painter (*NHMFL, FSU*), Uijong Bong (*Seoul National University*), David Larbalestier (*National High Magnetic Field Laboratory*) and Seungyong Hahn (*Seoul National University*)

Tue-Af-Po2.14-03 [3]: Critical current test of 35mm no-insulation iron-based superconductor single pancake coils under 24 T background field

Xinxing Qian, Donghui Jiang, Shili Jiang (*High Magnetic Field Laboratory, Chinese Academy of Sciences*), Guihong Zou (*high magnetic field laboratory of Chinese Academy of Sciences*), Dongliang Wang (*Institute of Electrical Engineering, CAS*), Xianping Zhang (*Institute of Electrical Engineering, Chinese Academy of Science*) and Wenge Chen (*High Magnetic Field Laboratory, Chinese Academy of Sciences*)

Tue-Af-Po2.14-04 [4]: The Effect of Turn-to-Turn Contact Resistance on the Electrical Characteristic and Thermal Stability of 2G HTS Pancake Coils

Guangda Wang, Li Liang, Cao Quanliang and Lai Zhipeng (-)

Tue-Af-Po2.14-05 [5]: Electromagnetic and thermal analysis of No-Insulation ReBCO Double Pancake Coils During Charging

Kangshuai Wang, Lang Qin, Yinming Dai, Chaoqun Niu, Hongyi Qu and Qiuliang Wang (*Institute of Electrical Engineering, Chinese Academy of Sciences*)

Tue-Af-Po2.14-06 [6]: A critical quench simulation model of No-insulation high temperature superconducting coils with defects

Lang Qin, Qiuliang Wang, Lei Wang, Jianhua Liu, Hongyi Qu and Juan Ying (*Institute of Electrical Engineering, Chinese Academy of Sciences*)

Tue-Af-Po2.14-07 [7]: Over-current test on an intra-layer no-insulation (LNI) REBCO coil under a high background field

Yu Suetomi (*RIKEN/Chiba University*), Shunji Takahashi, Taisuke Yoshida (*Sophia University*), Renzhong Piao, Yoshinori Yanagisawa (*RIKEN*), Tomoaki Takao (*Sophia University*), Gen Nishijima, Hitoshi Kitaguchi (*National Institute for Materials Science*), Yasuyuki Miyoshi, Mamoru Hamada, Kazuyoshi Saito (*Japan Superconductor Technology, Inc.*) and Hideaki Maeda (*RIKEN/Japan Science and Technology Agency*)

Tue-Af-Po2.14-08 [8]: Study of Screening Currents in No-Insulation REBCO Magnets

Kwanglok Kim, Thomas Painter, Kwangmin Kim, Xinbo Hu, Kabindra Bhattarai (*National High Magnetic Field Laboratory*), Jeseok Bang (*Seoul National University*), So Noguchi (*Hokkaido University*), Iain Dixon, David Larbalestier (*National High Magnetic Field Laboratory*) and Seungyong Hahn (*Seoul National University*)

Tue-Af-Po2.14-09 [9]: Elimination of Screening Current-Induced Magnetic Field in a non-insulation REBCO Superconducting Coil Through A Small Size Radio Frequency Antenna

Lei Wang, Qiuliang Wang, Lang Qin, Jianhua Liu and Yaohui Wang (*Institute of Electrical Engineering, Chinese Academy of Sciences*)

Tue-Af-Po2.14-10 [10]: Fatigue behavior of No-Insulation Coils with and without Reinforcing Co-Wind

Iain Dixon (*Florida State University*), Thomas Painter (*NHMFL, FSU*), Scott Bole (*National High Magnetic Field Laboratory, Tallahassee, USA*), Kwang Lok Kim, Kwangmin Kim (*National High Magnetic Field Laboratory*), Xinbo Hu (*ASC, NHMFL, FSU*), Jun Lu and Hongyu Bai (*National High Magnetic Field Laboratory*)

Tue-Af-Po2.14-12 [11]: Testing of Quality Assessment (QA) HTS Magnets at Tokamak Energy

Greg Brittles (*Tokamak Energy*), Robert Slade and Rod Bateman (*Tokamak Energy Ltd*)

14:00 - 16:00 Level 2 Posters 1

Tue-Af-Po2.15 - Resistive and Hybrid Magnets

Session Moderators: Satoshi Awaji, Tohoku University and Yunfei Tan, Huazhong University of Science and Technology

Tue-Af-Po2.15-01 [12]: Conceptual Design for a next generation Resistive Large Bore Magnet at the NHMFL

Jack Toth and Scott Bole (*National High Magnetic Field Laboratory, Tallahassee, USA*)

Tue-Af-Po2.15-02 [13]: Design of the resistive insert for the Nijmegen 45 T hybrid magnet

Frans Wijnen (*Radboud University Nijmegen*), Chris Wulffers (*High Field Magnet Laboratory, Radboud University, Nijmegen*), Arno Engels (*Technocentrum FNWI, Radboud University, Nijmegen*), Jos van Velsen (*High Field Magnet Laboratory, Radboud University, Nijmegen*), Andries den Ouden (*Radboud University, Nijmegen, The Netherlands*) and Jos Perenboom (*Radboud University Nijmegen*)

Tue-Af-Po2.15-03 [14]: Failure modes of the insert magnet of a hybrid magnet system: consequences for the mechanical design

Frans Wijnen (*Radboud University Nijmegen*), Andries den Ouden (*Radboud University, Nijmegen, The Netherlands*), Chris Wulffers (*High Field Magnet Laboratory - Radboud University*), Francois Debray (*CNRS*), Lou van Lieshout (*Ampulz*) and Jos Perenboom (*Radboud University Nijmegen*)

Tue-Af-Po2.15-04 [15]: Redesign and Strength Check of 40T Hybrid Magnet Thermal Shield

Zhen Fang, Guangli Kuang, Pengcheng Huang and Wenge Chen (*Chinese High Magnetic Field Laboratory ,Chinese Academy of Science*)

14:00 - 16:00 Level 2 Posters 1

Tue-Af-Po2.16 - Power Supplies and Flux Pumps II: Transformers

Session Moderators: Jun Ma, Cambridge University and Yujia Zhai, Hunan University

Tue-Af-Po2.16-01 [16]: Contactless Power Transfer for HTS Magnets with A Novel YBCO-coated Conductor Bridge as Rectifier

Yuke Deng (*1.Applied Superconductivity Laboratory, State Key Laboratory of Traction Power, Southwest Jiaotong University. 2.School of Electrical Engineering, Southwest Jiaotong University. 2.School of Electrical Engineering, Southwest Jiaotong University. 2School of Electrical Engineering, Southwest Jiaotong University*), Hangyu Qian (*1.Applied Superconductivity Laboratory, State Key Laboratory of Traction Power, Southwest Jiaotong University. 2.School of Electrical Engineering, Southwest Jiaotong University.*), Chao Wang (*1.Applied Superconductivity Laboratory, State Key Laboratory of Traction Power, Southwest Jiaotong University. 2.School of Electrical Engineering, Southwest Jiaotong University. 2.School of Electrical Engineering, Southwest Jiaotong University. 2.School of Electrical Engineering, Southwest Jiaotong University*), Pengbo Zhou and Guangtong Ma (*Applied Superconductivity Laboratory, State Key Laboratory of Traction Power, Southwest Jiaotong University*)

Tue-Af-Po2.16-02 [17]: Practical Estimation of Superconducting Dynamo Losses

Kent Hamilton, Rod Badcock, Chris Bumby (*Victoria University of Wellington*) and Ratu Mataira (*Robinson Research Institute, Victoria University of Wellington*)

Tue-Af-Po2.16-03 [18]: Design and performance analysis of a dynamo-type HTS flux pump for a 10 kW superconducting generator

Gi-Dong Nam, Hae-Jin Sung (*Changwon National University*), Rodney A Badcock, C. W. Bumby (*Robinson Research Institute*), In-Keun Yu and Minwon Park (*Changwon National University*)

Tue-Af-Po2.16-04 [19]: Experimental and Numerical Characterization of the Contactless Self Current Drived HTS Flux Pump

Pengbo Zhou and Guangtong Ma (*Southwest Jiaotong University*)

Tue-Af-Po2.16-06 [20]: Charging Characteristics of HTS Coils with Various Insulation Materials by Charging of Rotary HTS Flux Pump

Seunghak Han, Haeryong Jeon (*Yonsei University*), Ho Min Kim, Ji Hyung Kim, Jae Hyung Moon (*Jeju National University*), Tae Kuk Ko (*Yonsei University*) and Yong Soo Yoon (*Shin Ansan Univiersity*)

Tue-Af-Po2.16-07 [21]: Design a Stable and Compact Pulse Modulator Power Supply for RF Kicker Magnent

Yongfang Liu (*SARI-CAS(Shanghai Advanced Research Institute Chinese Academy of Sciences), SINAP(Shanghai Institute of Applied Physics Chinese Academy of Sciences),UCAS (University of Chinese Academy of Sciences*), Jin Tong, Ming Gu (*SINAP*) and Qibing Yuan (*SINAP/SARI-CAS*)

Tue-Af-Po2.16-08 [22]: Characteristics of a Stationary Flux Pump using Linear Moving Magnetic Fields for an HTS Jointless Coil in Persistent Current Mode

Kyeongdal Choi, Seyeon Lee, Miyeon Yoon, Woo-Seok Kim (*Korea Polytechnic University*) and Ji-Kwang Lee (*Woosuk University*)

Tue-Af-Po2.16-09 [23]: Superconducting transformer for superconducting cable research and development

Hui Yu (*National High Magnetic Field Laboratory*), Hubertus Weijers (*NHMFL/FSU*) and Jun Lu (*National High Magnetic Field Laboratory*)

Tue-Af-Po2.16-10 [24]: Transient Analysis of AC Power System for JT-60SA Superconducting Magnets

Shoichi Hatakeyama, Katsuhiro Shimada, Kunihito Yamauchi, Jun Okano, Yoshikazu Ohmori, Tsunehisa Terakado and Shinichi Moriyama (*National Institutes for Quantum and Radiological Science and Technology*)

Tue-Af-Po2.16-11 [25]: Design of a Resistive Magnet Power Supply Based on Three-Level Buck Converters

Can Wang (*Hefei Institutes of Physical Science, Chinese Academy of Scienc*) and Xiaoning Liu (*Hefei Institutes of Physical Science, Chinese Academy of Sciences*)

Tue-Af-Po2.16-12 [26]: Improvement of the performance of Flat-top Pulsed High Magnetic Field Facility based on battery-bank power supply

Shaozhe Zhang, Zhenglei Wang, Jianfeng Xie, Tonghai Ding (*Wuhan National High Magnetic Field Center,Huazhong University of Science and Technology*), Houxiu Xiao (*Huazhong University of Science & Technology*) and Xiaotao Han (*Wuhan National High Magnetic Field Center, Huazhong University of Science and Technology*)

Tue-Af-Po2.16-13 [27]: A new control strategy to improve the performance of the voltage source converter of new high power magnet power supply

Zhenshang Wang, Peng Fu, Liansheng Huang (*1.Institute of Plasma Physics, Chinese Academy of Sciences; 2.University of Science and Technology of China*), Xiaojiao Chen (*Institute of Plasma Physics, Chinese Academy of Sciences*), Tao Chen, Zhongma Wang, Tianbai Deng and Wei Tong (*1.Institute of Plasma Physics, Chinese Academy of Sciences; 2.University of Science and Technology of China*)

14:00 - 16:00 **Level 2 Posters 1**

Tue-Af-Po2.17 - NbTi Accelerator Magnets I

Session Moderators: Etienne Rochepault, CEA Paris-Saclay and Gerard Willering, CERN

Tue-Af-Po2.17-04 [28]: Superconducting Magnets for NICA and FAIR Projects. Status and Plans.

Hamlet Khodzhibagiyan, Vladimir Borisov, Artyom Galimov (*Joint Institute for Nuclear Research*), Vladimir Kekelidze (*Joint Institute for Nuclear Research (RU)*), Sergey Kostromin (*Joint Inst. for Nuclear Research (JINR)-Unknown-Unknown*), Dmitriy Nikiforov and Andrey Starikov (*Joint Institute for Nuclear Research*)

Tue-Af-Po2.17-05 [29]: Preliminary Test Results of the First of Series Multiplet for the Super-FRS at FAIR

Eun Jung Cho, Hans Guenter Mueller, Kei Sugita, Antonella Chiuchiolo, Giancarlo Golluccio, Florian Greiner, Pawel Kosek, Christian-Eric Roux, Martin Winkler (*GSI*), Alice Borceto (*ASG superconductors SpA*), Diego Ventura (*ASG Superconductor s.p.a*), Giovanni Valesi (*ASG superconductors SpA*) and Giovanni Drago (*ASG Superconductor s.p.a*)

Tue-Af-Po2.17-06 [30]: Industrial production of superconducting magnets for the FAIR SIS100 accelerator

Katrin Heyn (*Bilfinger Noell GmbH*), Alexander Bleile, Egbert Fischer (*GSI Helmholtzzentrum für Schwerionenforschung GmbH*), Florian Kaether (*GSI Helmholtzzentrum für Schwerionenforschung GmbH, Darmstadt, Germany*), Jan Patrick Meier (-), Christian-Eric Roux, Kei Sugita (*GSI*), Peter-Jurgen Spiller (-), Piotr Szwangruber (*GSI Helmholtzzentrum für Schwerionenforschung GmbH*), Anna Szwangruberb (*GSI*), Stefan Sattler, Rudi Schoenbein (*Bilfinger Noell GmbH*) and Wolfgang Walter (*Babcock Noell GmbH*)

Tue-Af-Po2.17-07 [31]: Mock-up developments for the superferric dipoles of the Super-FRS of FAIR

Arnaud Madur (*CEA Saclay*), Hervé Allain (*CEA*), Michael Daly (*CEA Paris-Saclay*), Julio Lucas, Francisco Fernandez, Michel Lopez, Jorge Arrillaga (*ELYTT Energy*), Hans Guenter Mueller (-), Eun Jung Cho, Kei Sugita and Martin Winkler (*GSI*)

Tue-Af-Po2.17-09 [32]: Preparation of the superconducting magnet string test for the SIS100 synchrotron

Anna Szwangruber (*GSI Helmholtzzentrum für Schwerionenforschung GmbH*), Patricia Aguar Bartolome (*GSI GSI Helmholtzzentrum für Schwerionenforschung GmbH*), Branislav Streicher, Claus Schroeder (*GSI*), Anke Gottsmann, Piotr Szwangruber, Walter Freisleben (*GSI Helmholtzzentrum für Schwerionenforschung GmbH*), Horst Welcker (-), Shekhar Santosh Mohite (*GSI,Darmstadt,Germany*), Reiner Bluemel, Anna Kario, Alexander Bleile (*GSI Helmholtzzentrum für Schwerionenforschung GmbH*), Christian-Eric Roux (*GSI*) and Peter-Jurgen Spiller (-)

14:00 - 16:00 **Level 2 Posters 1**

Tue-Af-Po2.18 - NbTi Accelerator Magnets II

Session Moderators: Tatsushi Nakamoto, High Energy Accelerator Research Organization, KEK and Thomas Strauss, FNAL

Tue-Af-Po2.18-01 [33]: Magnetic field design of a full-scale prototype of the HL-LHC beam separation dipole with a correction of mechanical deformation

Kento Suzuki (-), Yukiko Ikemoto, Tatsushi Nakamoto (*KEK*), Toru Ogitsu, Michinaka Sugano (-), Andrea Musso and Ezio Todesco (*CERN*)

Tue-Af-Po2.18-02 [34]: Magnetic Field Measurement of first series twin aperture orbit correctors for the HL-LHC Upgrade

Wenjie Yang (*University of Chinese Academy of Sciences*), Wei Wu, Xianjing Ou (*Institute of Modern Physics, Chinese Academy of Sciences*), Yanbing Yang (*University of Chinese Academy of Sciences*), Yu Liang, Lizhen Ma and Dognshen Ni (*Institute of Modern Physics, Chinese Academy of Sciences*)

Tue-Af-Po2.18-03 [35]: HL-LHC D2 Short model recombination dipole cold test results and analysis

Arnaud Pascal Foussat (*CERN*), Pasquale Fabbricatore (*INFN e Universita Genova (IT)*), Juan Carlos Perez (*CERN*), Stefania Farinon, Barbara Caiffi (*INFN e Universita Genova (IT)*), Franco Julio Mangiarotti (*CERN*), Roberto Cereseto (*INFN Genova*), Andrea Bersani (*INFN e Universita Genova (IT)*), Oussama Id'Bahmane (*CERN*), Filippo Levi (*INFN Genova*), Thomas Sahner, Marta Bajko and Ezio Todesco (*CERN*)

Tue-Af-Po2.18-04 [36]: Design and performance of the quench protection heater for the HL-LHC beam separation dipole

Kento Suzuki (-), Masahisa Iida, Yukiko Ikemoto (*KEK*), Nobuhiro KIMURA (*High Energy Accelerator Research Organization, KEK*), Tatsushi Nakamoto, Hirokatsu Ohata, Ryutarou Okada (*KEK*), Toru Ogitsu (-), Kenichi Sasaki (*KEK*), Michinaka Sugano (-), Naoto Takahashi, Kenichi Tanaka (*KEK*), Andrea Musso and Ezio Todesco (*CERN*)

Tue-Af-Po2.18-05 [37]: Design of radiation hard spare units for the orbit corrector dipoles of LHC

Alexandre Mehdi Louzguiti and Daniel Schoerling (*CERN*)

Tue-Af-Po2.18-06 [38]: Fabrication and results of the first Round Coil Superferric Magnet at LASA

Samuele Mariotto (*University of Milan - INFN Milan*), Augusto Leone, Antonio Paccalini (*INFN Sezione di Milano (INFN)*), Pasini Alesandro (*INFN Milano - LASA*), Danilo Felice Pedrini (*Università degli Studi e INFN Milano (IT)*), Quadrio Mauro (*INFN Milano - LASA*), Massimo Leone Sorbi (*Università degli Studi e INFN Milano (IT)*), Marco Statera (*INFN Milano - LASA*), Maurizio Todero (*Università degli Studi e INFN Milano (IT)*) and Riccardo Umberto Valente (*LASA-INFN (Milano, Italy)*)

Tue-Af-Po2.18-08 [39]: Analysis of Interdependent multipole field pattern and complement dipole field quality

Seong Yeub Shim and Kalliopi Dermati (*GSI*)

Tue-Af-Po2.18-09 [40]: The training test research of high stress superconducting magnet for 200 MeV superconducting cyclotron

Chunlong Zou, Kaizhong Ding (*Institute of Plasma Physics, Chinese Academy of Sciences*), Shuangsong Du (*ASIPP*), Rui Hu (*Hefei CAS ion Medical and Technical Devices Co.,Ltd*), Hansheng Feng (*Institute of Plasma Physics Chinese Academy of Sciences*), Huahui Zhang, Lei Li (*Hefei CAS ion Medical and Technical Devices Co.,Ltd*), Qingqing Du (*ASIPP*), Yujun Dong (-), Wulin Han (*Hefei CAS ion Medical and Technical Devices Co.,Ltd*), Yonghua Chen, Yanfang Bi (-), Kun Lu (*ASIPP*) and Yuntao Song (-)

Tue-Af-Po2.18-10 [41]: Optimization Design of CiADS Superconducting Solenoid

Tongjun Yang, Wei Wu (*Institute of Modern Physics, Chinese Academy of Sciences*), Yuquan Chen (-), Beimin Wu (*Institute of Modern Physics, Chinese Academy of Sciences*), shijun zheng, Ping Yuan, and Lizhen Ma (*Institute of Modern Physics, Chinese Academy of Sciences*)

14:00 - 16:00 **Level 2 Posters 1**

Tue-Af-Po2.19 - Losses in Conductors and Coils II

Session Moderators: Francesco Grilli, Karlsruhe Institute of Technology and Mike Sumption, The Ohio State University

Tue-Af-Po2.19-01 [42]: Instantaneous AC Loss Measurement of HTS Coil

Kai Zhu, Li Ren, Ying Xu, Yuejin Tang and Jing Shi (*Huazhong University of Science and Technology*)

Tue-Af-Po2.19-02 [43]: Experimental investigation on AC loss characteristics under HTS cable electromagnetic conditions

Jun Ogawa, Toshiki Fujii, Satoshi Fukui and Naoya Koseki (*Niigata University*)

Tue-Af-Po2.19-03 [44]: Research on Driving Coil with Coupling Cooling Method in Electromagnetic Forming

Li Qiu, Yantao Li (*China Three Gorges University*), Qi Xiong (-), Pan Su and Peng Chang (*China Three Gorges University*)

Tue-Af-Po2.19-04 [45]: Reducing the coil thermal loading in electromagnetic forming by altering coil geometry

Zhipeng Lai, Quanliang Cao (*Huazhong University of Science and Technology*), Liangyun Liu (*State Grid Hubei Yichang Electric Power Supply Company*), Li Qiu (*China Three Gorges University*), Xiaotao Han and Liang Li (*Huazhong University of Science and Technology*)

Tue-Af-Po2.19-05 [46]: Test Results of Quench-back Management Due to Fast Decaying Current Induced AC Losses in SHMS Superconducting Magnet at Jefferson Lab

Eric Sun (*Jefferson Lab*), Paul Brindza (-), Probir Ghoshal, Ruben Fair and Steven Lassiter (*Jefferson Lab*)

Tue-Af-Po2.19-06 [47]: Calculation of Iron Losses for Soft Magnetic Materials Under Sinusoidal Pulse Width Modulation (SPWM)

Changgeng Zhang, Htutzaw Hein, Shuaichao Yue and Yongjian Li (*State Key Laboratory of Reliability and intelligence of Electrical Equipment, Hebei University of Technology, 300130 Tianjin, China*)

Tue-Af-Po2.19-07 [48]: A Theoretical Investigation on the AC Loss Estimation Method for Fusion Magnet

Sangjun Oh (*NFRI*)

Tue-Af-Po2.19-08 [49]: Effect of Dynamic Resistance on AC loss in a Conductor-on-round-core Cable

Liu Rujing, Yang Wenjiang, Song Dongbin, Zhang Huiming and Zhu Jiahui (-)

Tue-Af-Po2.19-11 [50]: Self-field AC loss measurement of a four-tape HTS stack using Fiber Bragg Grating sensors

Yanchao Liu (*Beijing Jiaotong University*), Zhenan Jiang, Rodney Badcock (*Robinson Research Institute, Victoria University of Wellington*), Jin Fang, Xinyu Fang, Xufeng Yan (*Beijing Jiaotong University*) and Wei Zhou (*Institute of Magnetic Levitation and Electromagnetic Propulsion,3rd Institute of China Aerospace Science and Industry Corporation*)

Tue-Af-Po2.19-12 [51]: Reduction of ac loss in HTS coils of superferric magnets for rapid cycling synchrotrons by changing iron yoke geometry

Yang Li, Yusuke Sogabe, Masahiro Yasunaga, Fuwa Yasuhiro, Yoshihiro Ishi and Naoyuki Amemiya (*Kyoto University*)

14:00 - 16:00 Level 2 Posters 2

Tue-Af-Po2.20 - Motors VII

Session Moderators: Anna Kario, GSI-FAIR and Takanobu Kiss, Kyushu University

Tue-Af-Po2.20-01 [54]: An Optimal Design to Prevent Demagnetization of Dy-free Magnet for a Traction Motor

Byungkwan Son (*Sungkyunkwan University*), Ho-Chang Jung (*Korea Automotive Technology Institute*), Sang-Yong Jung (*Department of Electronic and Computer Engineering, Sungkyunkwan University*) and Dongsu Lee (*University of Illinois at Urbana-Champaign*)

Tue-Af-Po2.20-03 [55]: Low-Iron-Loss Design of a Flux-Modulated Motor Considering Air-Gap Harmonics

Fu Zhang (*Jiangsu University School of Electrical and information engineering*), Li Quan (*Jiangsu University*), Xiaoyong Zhu (*School of Electrical and Information Engineering*), Zixuan Xiang (-) and Min Jiang (*Jiangsu univeristy school of electrical and information engineering*)

Tue-Af-Po2.20-04 [56]: Low-Weight Design Method of Electric Outboard PM Motor for Small Leisure Boat

Ho-Joon Lee (*Busan Institute of Science & Technology University*), Hyungkwan Jang (*Hanyang University*), seungheon lee (-) and Ju Lee (*Hanyang University*)

Tue-Af-Po2.20-05 [57]: A New Hybrid Excitation Synchronous Machine with Radial Combination of PM and ALA

Hongqin Xie (*Sichuan University*) and Man Zhang (*Paris-Sud University*)

Tue-Af-Po2.20-06 [58]: Research on the cost-effectiveness for a flux-biased flux-modulated permanent magnet motor

Zixuan Xiang and Ming Jiang (-)

Tue-Af-Po2.20-07 [59]: Comparative Study on A Novel Modular Multistage Axial Flux Permanent Magnet Machine with Different Core Materials

Songjun Sun, Feng Jiang, Tianle Li, Baichuan Xu and Kai Yang (*State Key Laboratory of Advanced Electromagnetic Engineering and Technology, School of Electrical and Electronic Engineering, Huazhong University of Science and Technology*)

Tue-Af-Po2.20-08 [60]: A novel tubular switched reluctance linear machine shielding from end magnetic effect

Hao Chen (*China University of Mining & Technology*) and Rui Nie (*China University of Mining and Technology*)

Tue-Af-Po2.20-09 [61]: Cogging Torque Reduction in Double-Rotor Hybrid Excited Axial Switched-Flux Permanent Magnet Machine

Jilong Zhao, Xiaowei Quan (*School of Automation and Information Engineering, Xi'an University of Technology*) and Mingyao Lin (*School of Electrical Engineering, Southeast University*)

Tue-Af-Po2.20-10 [62]: Optimization Design and Performance Analysis of Bearingless Flux Switching Permanent Magnet Motor with Multi-tooth Structure

Ying Xu, Huangqiu Zhu and Mengyao Wu (*Jiangsu University*)

Tue-Af-Po2.20-11 [63]: A Novel Flux Switching Claw Pole Machine with Soft Magnetic Composite Cores

Chengcheng Liu, Youhua Wang (*Hebei University of Technology*), Gang Lei (*University of Technology Sydney*) and Jianguo Zhu (*University of Sydney*)

Tue-Af-Po2.20-12 [64]: Study on a new novel comcept of a slotless interior permanent magnet type BLDC

Chang-Sung Jin (*Wonkwang University*), Hyunwoo Kim, seungheon lee (-) and Ju Lee (*Hanyang University*)

14:00 - 16:00 Level 2 Posters 2

Tue-Af-Po2.21 - Motors VIII

Session Moderators: Anna Kario, GSI-FAIR and Takanobu Kiss, Kyushu University

Tue-Af-Po2.21-01 [65]: Inductance tracking Method for Interior Permanent Magnet Synchronous Motor by Electric Torque Estimator

JunHui Won (*Hanyang Univ*), Hanwoong Ahn (*Korea Aerospace Research Institute*), Hyungkwan Jang, Hyunwoo Kim and Ju Lee (*Hanyang University*)

Tue-Af-Po2.21-02 [66]: Thermal-Electromagnetic Design of ISG WFSM Motor for Vehicle Considering Cooling System

Gang Seok Lee (*Hanyang Univ*), Hyungkwan Jang (*Hanyang University*), Hyunwoo Kim (-) and Ju Lee (*Hanyang University*)

Tue-Af-Po2.21-03 [67]: Equivalent magnetic circuit analysis of doubly salient permanent magnet motor with Π-shaped stator iron core segments

Yi Du, Xiaoli Shi, Feng Xiao, Xiaoyong Zhu and Li Quan (*Jiangsu University*)

Tue-Af-Po2.21-04 [68]: Three-dimensional Magnetic Equivalent Circuit Analysis of Double-sided Switched Reluctance Linear Machine

Hao Chen (*China University of Mining & Technology*), Xuekun Liu and Wenju Yan (*China University of Mining and Technology*)

Tue-Af-Po2.21-05 [69]: Eddy-current magnetic field effects in the switched reluctance motor

Hao Chen and Wenju Yan (*China University of Mining and Technology*)

Tue-Af-Po2.21-06 [70]: Coupled Magnetic Field analysis and optimization of Double Stator Linear Rotary PM Machine

Xiaoyong Zhu, Chao Zhang (*School of Electrical and Information Engineering*), Mingyao Lin (*School of Electrical Engineering*) and Lei Xu (*School of Electrical and Information Engineering, Jiangsu University*)

Tue-Af-Po2.21-08 [71]: Considering axial phenomenon, axial permanent magnet segment motor Analysis.

Gang Seok Lee (*Hanyang Univ*), Hyungkwan Jang (*Hanyang University*), Seungheon Lee (-) and Ju Lee (*Hanyang University*)

Tue-Af-Po2.21-09 [72]: Study of A Post-Assembly Magnetization Method of a V-Type Rotor of Interior Permanent Magnet Synchronous Motor for Electric Vehicle

Qingjian Wang, Hongfa Ding (*Wuhan National High Magnetic Field Center, Huazhong University of Science and Technology*), Jun Zhou and Hang Zhang (*Huazhong University of Science and Technology*)

Tue-Af-Po2.21-10 [73]: Optimization Method to Maximize Efficiency of a Drive Motor with Electrical Winding Changeover Technic for Hybrid EV

Ho-Chang Jung (*Korea Automotive Technology Institute*), Suyeon Cho (*Korea Automotive Technology Institute.*) and Dongsu Lee (*University of Illinois at Urbana-Champaign*)

Tue-Af-Po2.21-11 [74]: Optimization Design of Segmented Permanent-Magnet Shape by Analysis of Thermal Characteristics

Jonghun Lee and Dong-woo Kang (*Keimyung University*)

14:00 - 16:00 **Level 2 Posters 2**

Tue-Af-Po2.22 - Stability of Conductors and Coils II

Session Moderators: Haigun Lee, Korea University and Honghai Song, BNL

Tue-Af-Po2.22-01 [75]: Investigation on Electrical and thermal behaviors of 2G HTS Racetrack Coil with Metal-Insulator Transition Insulation Material under External Time-Varying Magnetic Field

Jung Hyup Ko, Huu Luong Quach, Yoon Seok Chae, Jae Hyung Moon (*Jeju National University*), Chang Ju Hyeon (-), Ji Hyung Kim (*Jeju National University*), Sail Park (*Korea Institute of Energy Research)*, Chang Jin Boo (*Jeju International University*),

Tae Kuk Ko (*Yonsei University*), Hyung Wook Kim, Young Sik Jo (*Korea Electrotechnology Research Institute*) and Ho Min Kim (*Jeju National University*)

Tue-Af-Po2.22-02 [76]: Smart Insulation that Enables Calculation of Operating Current of ReBCO Coil

Hyung-Wook Kim (*Korea Electrotechnology Research Institute*), Jin Hur (*Incheon National University*), Seog-Whan Kim and Young-Sik Jo (*Korea Electrotechnology Research Institute*)

Tue-Af-Po2.22-03 [77]: Investigation on the Thermal and Electrical Characteristics of GdBCO Magnet Using Intentional Bypass Current Path

Kim Kihyun, Haigun Lee, Kim Young-Gyun, Yoo Byeongha and Kim Jimin (*Korea University*)

Tue-Af-Po2.22-04 [78]: Study on Cooling and Over-current Characteristics of a Superconducting Magnet Using a Grooved Bobbin

Hyun Sung Noh, Haigun Lee, Young-Gyun Kim, Byeongha Yoo and Kihyun Kim (*Korea University*)

Tue-Af-Po2.22-06 [79]: Investigation on the correlation between electric and thermal contact resistance of REBCO HTS wires

Seokho Kim, Geonhang Seo (*Changwon National University*) and Kyeongdeok Kim (*Supergenics.ltd*)

Tue-Af-Po2.22-07 [80]: Quench test of a stacked REBCO coil composed of six single pancakes with electrically conductive epoxy resin

Hiroshi Miyazaki (*Toshiba Energy Systems & Solutions Corporation*), Sadanori Iwai (*1) Toshiba Energy Systems & Solutions Corporation*), Tatsuro Uto, Takashi Kusano (*Toshiba Energy Systems & Solutions Corporation*), Hirotaka Ishii (*Toshiba Corporation*), Toshinobu Ito (*1) Toshiba Energy Systems & Solutions Corporation*) and Shunji Nomura (-)

Tue-Af-Po2.22-08 [81]: Quench Initiation and Propagation at Different Operating Temperatures in a HTS Pancake Coil Wound with Roebel Cable

Lorenzo Cavallucci (*Univeristy of Bologna*), Marco Breschi, Pier Luigi Ribani (*University of Bologna*), Qingbo Zhang and Yifeng Yang (*University of Southampton*)

Tue-Af-Po2.22-09 [82]: Characteristics research on BSCCO HTS tapes with short-circuit impulse current impact at LNG cooling ambient temperature

Yuguang Sun (*Department of Electrical Engineering, Tsinghua University*), Zhiyong Yan (*Tsinghua University*), Guangrui Zhao and Xiaohua Jiang (*Department of Electrical Engineering, Tsinghua University*)

14:00 - 16:00 **Level 3 Posters**

Tue-Af-Po2.23 - Novel and Other Applications I

Session Moderators: Philippe Masson, AML Superconductivity and Magnetics and Honghai Song, BNL

Tue-Af-Po2.23-01 [88]: Recent State of The Art Magnets for Beamline Applications

Daniel Strange, Steven Ball, Neil Clarke, Timothy Hollis, Wenbin Ma, Ziad Melhem, Andrew Twin, Roman Viznichenko and David Warren (*Oxford Instruments*)

Tue-Af-Po2.23-02 [89]: A Hybrid Trapped Field Magnet Lens (HTFML): concept and realization

Mark Ainslie, Devendra Namburi (*University of Cambridge*), Hiroyuki Fujishiro, Sora Namba (*Iwate University*), Yun-Hua Shi, Tony Dennis and John Durrell (*University of Cambridge*)

Tue-Af-Po2.23-03 [90]: A Novel Technique of Manufacturing Permanent Magnets And Halbach Arrays

Rainer Meinke, Philippe Masson (*AML Superconductivity and Magnetics*) and Michael Tomsic (*Hyper Tech Research*)

Tue-Af-Po2.23-04 [91]: Research on the Squeeze Current Effect of the Foil-type Excitation Windings under the Condition of High Frequency

Ming Yang (*State Key Laboratory of Reliability and Intelligence, School of Electrical Engineering, Hebei University of Technology of Electrical Equipment*), Yongjian Li (*State Key Laboratory of Reliability and Intelligence of Electrical Equipment, School of Electrical Engineering, Hebei University of Technology*), Qingxin Yang (*Tianjin University of Technology*) and Changgeng Zhang (*State Key Laboratory of Reliability and Intelligence of Electrical Equipment, School of Electrical Engineering, Hebei University of Technology*)

Tue-Af-Po2.23-05 [92]: Development of a Prototype MgB2 Superconducting Solenoid Magnet for High-Efficiency Klystron Applications

Hiroyuki Watanabe, Tomoyuki Koga, Hideki Tanaka, Tsuyoshi Wakuda (*Hitachi, Ltd.*), Akira Yamamoto (*High Energy Accelerator Research Organization (JP)*), Shinichiro Michizono (-), Igor Syratchev, Gerard Mcmonagle, Nuria Catalan Lasheras and Sergio Calatroni (*CERN*)

Tue-Af-Po2.23-06 [93]: Experimental Analysis of the Interference-Fit Joining of Aluminium Tubes by Electromagnetic Forming

Martin Geier (*Engenharia Mecânica, Escola Politécnica, Universidade do Vale do Rio dos Sinos*), Evandro Paese (*Departamento de Engenharia Mecânica, Universidade de Caxias Sul, Campus Universitário da Região dos Vinhedos*), Rodrigo Rossi (*Departamento de Engenharia Mecânica, Universidade Federal do Rio Grande do Sul*), Pedro Rosa (*IDMEC, Instituto Superior Técnico, Universidade de Lisboa*) and Roberto Petry Homrich (*Departamento de Engenharia Elétrica, Universidade Federal do Rio Grande do Sul*)

Tue-Af-Po2.23-07 [94]: Design and experimental implementation of a novel electromagnetic stirring system for casting particle-reinforced aluminum matrix composites

Xiaotao Han (*Wuhan National High Magnetic Field Center, Huazhong University of Science and Technology*), Junyu Fu (*Huazhong University of Science and Technology,Wuhan National High Magnetic Field Center*), Weilin Chen (*Wuhan National High Magnetic Field Center, Huazhong University of Science and Technology*), Limeng Du (*Wuhan National High Magnetic Field Center*), Quanliang Cao (-) and Qi Chen (*Wuhan National High Magnetic Field Center, Huazhong University of Science and Technology*)

Tue-Af-Po2.23-08 [95]: Design and Fabrication of a Laboratory Electromagnet applying HTS Coils

Young Jin Hwang, Jae Young Jang, Myung Su Kim and Yeon Suk Choi (*Korea Basic Science Institute*)

Tue-Af-Po2.23-09 [96]: A 10+ m^3 Ioffe Trap for Project 8

Alec Lindman (*PRISMA+ Cluster of Excellence, Johannes Gutenberg Universität Mainz*), Collaboration For the Project 8 (*project8.org*), Alexey Radovinsky (*MIT*), Joseph Minervini (*Massachusetts Insititute of Technology*), Joseph Formaggio (*Massachusetts Institute of Technology*), Sebastian Boeser (*PRISMA+ Cluster of Excellence, Johannes Gutenberg Universität Mainz*) and Adrien Etienney (*Phelma, Grenoble INP*)

Tue-Af-Po2.23-10 [97]: Study on a Novel Electromagnetic Tripping System with Two Staeg Short Circuit Tripping Characteristic

Ming Zong, He Gong, Chong Li, Aimin Liu and Fengge Zhang (*Shenyang University of Technology*)

Tue-Af-Po2.23-11 [98]: Experimental research on conduction cooling of superconducting induction heating magnet

Bangzhu Wang, Lei Hu, Shaotao Dai, Tao Ma and Teng Zhang (-)

Tue-Af-Po2.23-12 [99]: Frequency measurement of Terahertz wave by using high magnetic field technology

Xin Qi (-), Xiaotao Han (*Wuhan National High Magnetic Field Center, Huazhong University of Science and Technology*) and Houxiu Xiao (-)

14:00 - 16:00 **Level 3 Posters**

Tue-Af-Po2.24 - Novel and Other Applications II

Session Moderators: Sasha Ishmael, Lupine Materials and Technology and Rainer Meinke, AML Superconductivity and Magnetics

Tue-Af-Po2.24-01 [100]: The development of three stage electromagnetic forming facility and its timing control system

Jianfeng Xie (-), Xiaotao Han (*Wuhan National High Magnetic Field Center, Huazhong University of Science and Technology*), Quanliang Cao (-) and Jiangtao Shi (*Huazhong University of Science and Technology*)

Tue-Af-Po2.24-02 [101]: 30 T pulsed magnet designed for an 800 GHz gyrotron

Pengbo Wang, Xiaofeng Li, Houxiu Xiao, Liang Li (*Huazhong University of Science and Technology*) and Xianfei Chen (*Huazhong University of Science and Technology,*)

Tue-Af-Po2.24-03 [102]: Poloidal Vector Potential Transformer

Masahiro Daibo (*Iwate University*) and Thitaporn Detmod (*King Mongkut's Institute of Technology Ladkrabang*)

Tue-Af-Po2.24-04 [103]: Dynamic analysis of sheet metal forming process by uniform pressure electromagnetic actuator using the finite element method

Zelin Wu (*Huazhong University of Science and Technology*), Xiaotao Han, Quanliang Cao, Qi Chen (*Wuhan National High Magnetic Field Center, Huazhong University of Science and Technology*) and Liang Li (*Huazhong University of Science and Technology*)

Tue-Af-Po2.24-05 [104]: Design and simulation of three-phase electromagnetic wiping device

Weilin Chen and Tonghai Ding (*Wuhan National High Magnetic Field Center, Huazhong University of Science and Technology*)

Tue-Af-Po2.24-06 [105]: Verification of an Efficient Closed Loop Degaussing Technique for a Ferromagnetic ship

Dong-Hun Kim, Byungsu Kang, Jaegyeong Mun (*Kyungpook National University*), Chang-Seob Yang, Hyun-Ju Chung and Dong-Wook Kim (*Agency for Defense Development*)

Tue-Af-Po2.24-07 [106]: Magnetic lens effect analysis of high temperature superconductors by finite element software

Donghui Jiang, Guihong Zou, Xinxing Qian, Zhiyou Chen (-), Wenge Chen and Guangli Kuang (*High Magnetic Field Laboratory, Chinese Academy of Sciences*)

Tue-Af-Po2.24-08 [107]: The Modeling and Numerical Simulation for Spherical Vector-Potential Coil

Sarai Lekchaum and Masahiro Daibo (*Iwate University*)

Tue-Af-Po2.24-09 [108]: Numerical Investigations on Enhanced-Performance Superconducting Linear Acceleration System for Pellet Injection

Teruou Takayama, Takazumi Yamaguchi, Ayumu Saitoh and Atsushi Kamitani (*Yamagata University*)

Tue-Af-Po2.24-10 [109]: A hybrid compensation method for ICT high voltage power supply

Can Jiang, Jun Yang, Tao Liu, Cheng Xi and Hui Liang (*Huazhong University of Science and Technology*)

Tue-Af-Po2.24-11 [110]: Operation parameter and economic effect study of the 1 MW HTS DC induction heater

Ping Yang (*Shanghai Maritime University*) and Yawei Wang (*University of Bath*)

Tue-Af-Po2.24-12 [111]: High Coupling Characteristics of Resonance Coil for Superconducting Wireless Power Transfer

Hui-Seok Gu, Seonho Hwang and Hyo-Sang Choi (*Chosun university*)

14:00 - 16:00 **Level 3 Posters**

Tue-Af-Po2.25 - Novel and Other Applications III

Session Moderators: Sasha Ishmael, Lupine Materials and Technology and Rainer Meinke, AML Superconductivity and Magnetics

Tue-Af-Po2.25-01 [112]: Structure Design and Performance Analysis of Superconducting DC Energy Transfer Line

Yiqun Zhang, Peng Xue, Xiaohua Jiang, Guangrui Zhao and Sun Yuguang (*Tsinghua University*)

Tue-Af-Po2.25-02 [113]: Feasibility study for the application of 154 kV smart HTS cables to a power system

Seung Ryul Lee, Eun Young Ko and Jeonwook Cho (*KERI*)

Tue-Af-Po2.25-03 [114]: Sensitivity Analysis of Parameters in Transverse Flux Induction Heating Model

Youhua Wang, Jiancheng Wu and Chengcheng Liu (*Hebei University of Technology*)

Tue-Af-Po2.25-04 [115]: A Finite Element Study on the Distribution and Variation of the Eddy Current in Electromagnetic Sheet Free Bulging

Lantao Huang, Jing Zhang, Jiahao Zou and Yihan Zhou (*Xiamen University*)

Tue-Af-Po2.25-05 [116]: Effect of the iron core air gap structure of superconducting DC induction heater on the heating of aluminium billet

Xufeng Yan, Shaotao Dai, Ying Xu and Jing Zhang (*Beijing Jiaotong University*)

Tue-Af-Po2.25-06 [117]: Electromagnetic-thermal-fluid Field Model of Superconducting DC Energy Transfer Line

Peng Xue, Yiqun Zhang, Yuguang Sun, Xiaohua Jiang and Yingying Wang (*Tsinghua University*)

Tue-Af-Po2.25-08 [118]: A Novel Trenchless Detection Technology Based on Transient Electromagnetic Method for Power Poles

Jun Zhou (*Huazhong University of Science and Technology*), Hongfa Ding (*Wuhan National High Magnetic Field Center, Huazhong University of Science and Technology*), Lingda Xv, Yonglin Zhi (*Hainan Power Grid Corporation Baisha Power Supply Bureau*), Hang Zhang (*Huazhong University of Science and Technology*) and Qingjian Wang (*Wuhan National High Magnetic Field Center, Huazhong University of Science and Technology*)

Tue-Af-Po2.25-09 [119]: A Novel Magnetic Gear with Unequal Halbach Array and Spoke Permanent Magnets

Libing Jing, Zhangxian Huang (*China Three Gorges University*), Qian Wang, Ronghai Qu and Hailin Huang (*Huazhong University of Science and Technology*)

Tue-Af-Po2.25-10 [120]: A Novel Slotted Magnetic Gear with Spoke and Inset Permanent Magnets

Libing Jing, Junlin Chen (*China Three Gorges University*), Qian Wang and Ronghai Qu (*Huazhong University of Science and Technology*)

Tue-Af-Po2.25-11 [121]: Detection of Underground Tower Base for Distribution Transmission Network Based on Transient Electromagnetic Method

Hongfa Ding, Xiao Fang, Jun Zhou, Dandi Zhang, Yonglin Zhi (-) and Lingda Xu (*Hainan Power Grid Corporation Baisha Power Supply Bureau*)

16:00 - 18:30 Regency Ballroom

Tue-Af-Spe1 - Special Session: Magnet Technology and Conductor for Future High-field Applications

Session Moderator: Joseph Minervini, MIT

16:00 **Introduction**

16:05 **MRI**
Michael Parizh (*GE Global Research*)

16:15 **Ultra-high-field Fusion - CFS**
Zach Hartwig *(Commonwealth Fusion Systems)*

16:30 **Advantages and Challenges in High-field Rotating Machinery**
Mathias Noe (*Karlsruhe Institute of Technology*)

16:45 **High-field Accelerator Magnets**
Bernardo Bordini (*CERN*)

17:00 **TMC - A Low-cost High Field Conductor**
Bernd Seeber (*scMetrology SARL*)

17:15 **Status of High-field ReBCO Conductor**
Satoshi Awaji (*Tohoku University*)

17:30 **Conductor Technology Needs**
Mike Sumption (*The Ohio State University*)

17:45 **Key Issues in HTS Magnet and Conductor Technology Toward Various Applications**
Naoyuki Amemiya (*Kyoto University*)

18:00 **Magnet Technology Development for High-field Accelerator Magnets**
Ramesh Gupta (*BNL*)

18:15 **Questions & Discussion**

08:00 - 08:45 **Regency Ballroom**

Wednesday Plenary – *sponsored by ASG Superconductors*

Session Moderator: Cesar Luongo, ITER Organization

08:00 **Wed-Mo-PL3-01: Toward Completion and Delivery of the First EU ITER Magnets**
Piergiorgio Aprili, Boris Bellesia, **Alessandro Bonito-Oliva**, Eva Boter, Thierry Boutboul (*F4E*), Lim Byung Su (*ITER IO*), Pedro Carvas, Mari Paz Casas Lino, Marc Cornelis, Pierre Gavouyere-Lasserre, Robert Harrison, Angela Hernandez, Marc Jimenez (*F4E*), Sebastien Koczorowski (*ITER IO*), Ander Loizaga (*F4E*), Cesar Luongo (*ITER IO*), Monica Martinez, Hannu Rajainmaki, Peter Readman, Gennaro Romano, Carlo Sborchia, Puierluigi Valente and Eudard Viladiu (*F4E*)

08:45 - 09:30 **Regency Ballroom**

Young Scientist Plenary

Session Moderator: Tiina Salmi, Tampere University of Technology

08:45 **Introduction**

08:50 **Wed-Mo-PL4-01: Mitigation of Shielding-current-induced Field in a Magnet Wound with Coated Conductors for Accelerator Systems**
Yusuke Sogabe *(Kyoto University)*

08:55 **Wed-Mo-PL4-02: Superconducting Magnet Testing: The Art of Giving Feedback on Magnet Design**
Franco Mangiarotti *(CERN)*

09:00 **Wed-Mo-PL4-03: Bi-2212 High Field Magnet Development**
Ernesto Bosque *(ASC/NHMFL)*

09:05 **Wed-Mo-PL4-04: Electro-mechanical Characterization of HTS Tapes and Conductors for the next Generation High-field Magnets**
Federica Pierro *(Tufts University)*

09:10 **Wed-Mo-PL4-05: Rayleigh-scattering Interrogated Optical Fibers for Quench Detection**
Federico Scurti *(North Carolina State University)*

09:15 **Wed-Mo-PL4-06: Development of Superconducting Undulators**
Ibrahim Kesgin *(Argonne National Laboratory)*

09:30 - 11:15 **Level 2 Posters 1**

Wed-Mo-Po3.01 - Fusion V: DDT and DEMO

Session Moderators: Neil Mitchell, ITER Organization and Simonetta Turtu', ENEA

Wed-Mo-Po3.01-01 [1]: Conceptual Design and Analysis of the DDT PF Coil System

Turtu' Simonetta, Aldo Di Zenobio, Luigi Muzzi, Luigi Affinito, Alessandro Anemona (*ENEA*), Roberto Bonifetto (*POLITO*), Valentina Corato, Chiarasole Fiamozzi Zignani, Lorenzo Giannini, Giuseppe Messina, Luigi Morici, Gherardo Romanelli (*ENEA*), Laura Savoldi, Andrea Zappatore, Roberto Zanino (*POLITO*), Lorenzo Zoboli (*University of Rome "Tor Vergata"*) and Antonio della Corte (*ENEA*)

Wed-Mo-Po3.01-02 [2]: Structural analyses of the Toroidal Field magnet system of the DTT

Gherardo Romanelli, Aldo Di Zenobio, Alessandro Anemona, Lorenzo Giannini, Lorenzo Zoboli, Simonetta Turtu', Luigi Muzzi, Riccardo Righetti and Antonio della Corte (*ENEA*)

Wed-Mo-Po3.01-03 [3]: Optimization of the fast discharge time constant for the DTT Toroidal Field magnets

Roberto Bonifetto (*Politecnico di Torino*), Aldo Di Zenobio, Luigi Muzzi (*ENEA*), Laura Savoldi (*Politecnico di Torino*), Simonetta Turtu' (*ENEA/ICAS*), Roberto Zanino and Andrea Zappatore (*Politecnico di Torino*)

Wed-Mo-Po3.01-04 [4]: Structural assessment of the DTT Poloidal Field Coil system

Lorenzo Zoboli (*ENEA, Superconductivity section, C.R. Frascati, Italy; Department of Civil Engineering and Computer Science, University of Rome Tor Vergata*), Aldo Di Zenobio, Luigi Muzzi, Simonetta Turtù, Alessandro Anemona, Lorenzo Giannini, Gherardo Romanelli (*ENEA, Superconductivity section, C.R. Frascati, Italy*), Giuseppe Vairo (*Department of Civil Engineering and Computer Science, University of Rome Tor Vergata*) and Antonio Della Corte (*ENEA, Superconductivity section, C.R. Frascati, Italy*)

Wed-Mo-Po3.01-05 [5]: Magnetostructural calculations and design study of the DTT central solenoid

Lorenzo Giannini (*ICAS*), Luigi Muzzi, Aldo Di Zenobio (*ENEA*), Alessandro Anemona (*ICAS*), Antonio della Corte, Fiamozzi Zignani Chiarasole (*ENEA*), Gherardo Romanelli (*Tratos*), Lorenzo Zoboli and Simonetta Turtù (*ENEA*)

Wed-Mo-Po3.01-06 [6]: CEA Broad Design Studies on EU Demo TF, CS and PF Magnets Systems

Louis Zani, Alexandre Torre (*CEA*), Benoît Lacroix (*CEA IRFM*), Christian Vorpahl (*EUROfusion*), Christine Hoa (*CEA SBT*), Francois Nunio (*CEA*), François Bonne (*CEA/SBT*), Kamil Sedlak (*EPFL Lausanne*), Nicolas Misiara (*CEA-IRFU*), Quentin Le Coz (*CEA*), Roser Vallcorba (*CEA - Saclay*), Sylvie Nicollet (*CEA IRFM*) and Valentina Corato (*ENEA*)

Wed-Mo-Po3.01-07 [7]: Design and analysis of DEMO PF coils

Mithlesh Kumar, Kamil Sedlak, Xabier Sarasola and Pierluigi Bruzzone (*EPFL-SPC*)

Wed-Mo-Po3.01-08 [8]: EUROfusion DEMO Tokamak, Inter-Layer Joint for Toroidal Field Coil

Boris Stepanov, Vincenzo D`Auria and Pierluigi Bruzzone (*EPFL-SPC*)

Wed-Mo-Po3.01-09 [9]: In plane optimization of Tokamak Toroidal Field Coil cross sections

Alfredo Portone (*Fusion For Energy/European Commission*), Gabriele D'Amico and Luigi Reccia (*Fusion for Energy*)

Wed-Mo-Po3.01-10 [10]: Progress in the Design of a Hybrid HTS-Nb3Sn-NbTi Central Solenoid for the EU DEMO

Xabier Sarasola, Rainer Wesche (*EPFL*), Valentina Corato (*ENEA*), Ilia Ivashov (*Forschungszentrum Jülich GmbH*), Kamil Sedlak (*EPFL Lausanne*), Davide Uglietti (-), Christian Vorpahl (*EUROfusion*) and Pierluigi Bruzzone (*EPFL-SPC*)

09:30 - 11:15 Level 2 Posters 1

Wed-Mo-Po3.02 - Fusion VI: Conductors for Fusion & New Designs

Session Moderators: Andries den Ouden, Radboud University and Arnaud Pascal Foussat, CERN

Wed-Mo-Po3.02-01 [11]: Conceptual Design of Compact CS Insert for HTS Spherical Tokamak FNSF

Yuhu Zhai (*Princeton Plasma Physics Laboratory*)

Wed-Mo-Po3.02-02 [12]: The general appearance of the superconducting magnet system for the Gas-Dynamic Multimirror Trap

Dmitry Yakovlev, Piotr Bagryansky, V Syrovatin (*Budker Institute of Nuclear Physics*), Vasily Zubko, Vitaly Vysotsky, Sergey Fetisov and Sergey Zanegin (*Russian Scientific R&D Cable Institute*)

Wed-Mo-Po3.02-03 [13]: An Alternative Conductor Design for the K-DEMO Toroidal Field Coils

Soun Pil Kwon, Sangjun Oh and Hyun Wook Kim (*NFRI*)

Wed-Mo-Po3.02-04 [14]: Development of high-current density HTS STARS conductor for the next generation helical fusion device

Nagato Yanagi (*NIFS*), Yoshiro Terazaki (*National Institute for Fusion Science*), Shinnosuke Matsunaga (*SOKENDAI (The Graduate University for Advanced Studies)*), Satoshi Ito (*Tohoku University*), Hitoshi Tamura, Shinji Hamaguchi (*National Institute for Fusion Science*), Toshiyuki Mito (*National Institute for Fusion Science (NIFS)*) and Hidetoshi Hashizume (*Tohoku University*)

Wed-Mo-Po3.02-05 [15]: HTS-WISE conductor and magnet impregnated with low-melting point metal

Shinnosuke Matsunaga, Yoshiro Narushima (*The Graduate University for Advanced Studies (SOKENDAI)*), Yuta Onodera, Yoshiro Terazaki (*National Institute for Fusion Science*), Junichi Miyazawa (*The Graduate University for Advanced Studies (SOKENDAI)*) and Nagato Yanagi (*National Institute for Fusion Science*)

Wed-Mo-Po3.02-07 [16]: Electro-Magnetic Design of a 3T superconducting Dipole magnet

Chao Li and Wei Liu (-)

09:30 - 11:15 **Level 2 Posters 1**

Wed-Mo-Po3.03 - Cryogenic Systems

Session Moderators: Kazuma Fukui, National Institutes for Quantum and Radiological Science and Technology and Hongyu Bai, NHMFL

Wed-Mo-Po3.03-01 [17]: Design of JT-60SA Cryodistribution components

Kyohei Natsume (*Quantum radiology Science and Technology*), Kazuma Fukui (*National Institutes for Quantum and Radiological Science and Technology*), Haruyuki Murakami, Kaname Kizu and Takaaki Isono (*Quantum radiology Science and Technology*)

Wed-Mo-Po3.03-02 [18]: Quench recovery analysis of the JT-60SA superconducting magnets

Kazuma Fukui (*National Institutes for Quantum and Radiological Science and Te*), Kyohei Natsume, Kaname Kizu, Haruyuki Murakami (*Quantum radiology Science and Technology*) and Takaaki Isono (*National Institutes for Quantum and Radiological Science and Technology*)

Wed-Mo-Po3.03-03 [19]: Alarm and interlock system in cryogenic system of EAST

Liangbing Hu, Ming Zhuang, Qiyong Zhang, Zhiwei Zhou and Zhigang Zhu (*Institute of plasma physics Chinese academy of sciences*)

Wed-Mo-Po3.03-04 [20]: Conceptual design of the cryogenic system for large scale superconducting coil test

Zhigang Zhu, Ming Zhuang, Liangbing Hu, Ping Zhu, Linhai Sheng and Keping Wu (*Institute of Plasma Physics, Chinese Academy of Sciences*)

09:30 - 11:15 **Level 2 Posters 1**

Wed-Mo-Po3.04 - Medical Applications

Session Moderators: Atsushi Ishiyama, Waseda University and William Marshall, NHMFL

Wed-Mo-Po3.04-01 [21]: Design and development of beamline system for a proton therapy facility

Bin Qin, Xu Liu, Wenjie Han, Kaifeng Liu, Jun Yang, Dong Li and Zhikai Liang (*Huazhong University of Science and Technology*)

Wed-Mo-Po3.04-02 [22]: Design and development of small model HTS coil system for Skeleton Cyclotron

Hiroshi Ueda, Yuta Awazu, SeokBeom Kim (*Okayama University*), So Noguchi (*Hokkaido University*), Tomonori Watanabe, Shigeo Nagaya (*Chubu.Electric.Power Co., Inc.*), Jun Yoshida (*Sumitomo Heavy Industries, Ltd.*), Mitsuhiro Fukuda (*Osaka University*) and Atsushi Ishiyama (*Waseda University*)

Wed-Mo-Po3.04-03 [23]: Structure Optimization of The Fast Scanning Magnets for Proton Therapy

Zhongqi Zhang, Ping Tan and Xingyu Li (*Huazhong University of Science and Technology*)

Wed-Mo-Po3.04-04 [24]: Multiple redundant closed-loop control technology for the scanning magnets of proton therapy nozzle

Yuying Hu, Ping Tan and Yinjie Lin (*HUST: Huazhong University of Science and Technology*)

Wed-Mo-Po3.04-05 [25]: Lightweight design of superconducting magnets for a rotating gantry with active shielding

Tetsuhiro Obana (*NIFS*) and Toru Ogitsu (*KEK*)

Wed-Mo-Po3.04-06 [26]: Fundamental Study on Cancer Therapy by Blocking Newborn Blood Vessels Using a High-Frequency Rotating Magnetic Field

Makoto Kirimura and Yoko Akiyama (*Division of Sustainable Energy and Environmental Engineering, Graduate School of Engineering, Osaka University*)

Wed-Mo-Po3.04-07 [27]: Optimum Design of Continuously Workable Transcranial Magnetic Stimulator

Xiao Fang (-), Hongfa Ding (*the Wuhan National High Magnetic Field Center, State Key Laboratory of Advanced Electromagnetic Engineering and Technology, Huazhong University of Science and Technology*), Chang Liu, Jun Zhou, Yuanhao Li and yongheng Huang (-)

09:30 - 11:15 **Level 2 Posters 1**

Wed-Mo-Po3.05 - Generators I

Session Moderators: Timothy Coombs, University of Cambridge and Michael Green, LBNL

Wed-Mo-Po3.05-01 [28]: Multiobjective optimal design of bearingless permanent magnet synchronous generator with multiobjective particle swarm optimization algorithm

Yizhou Hua, Huangqiu Zhu, Ying Xu and Mengyao Wu (*Jiangsu University*)

Wed-Mo-Po3.05-02 [29]: Experiments and Design Criteria for a High-Speed Permanent Magnet Synchronous Generator with Magnetic Bearing Considering Mechanical Aspects

Jeong-In Lee, Kyung-Hun Shin (*Chungnam National University*), Gang-Hyeon Jang (*Chungnam National University, Korea*), Tae-Kyoung Bang (*Republic of Korea /Chungnam National University*), Key-Yong Hong (*Korea Research Institute of Ships & Ocean Engineering*) and Jang-Young Choi (*Department of Electrical Engineering, Chungnam National University*)

Wed-Mo-Po3.05-03 [30]: Design and Analysis of High-Speed Permanent Magnet Synchronous Generator Considering Rotor Structure

Kyung-Hun Shin (*Chungnam National University*), Jang-Young Choi (*Department of Electrical Engineering, Chungnam National University*), Tae-Kyoung Bang (*Republic of Korea /Chungnam National University*), Han-Wook Cho (*Chungnam National University*), Gang-Hyeon Jang (*Chungnam National University, Korea*) and Chang-Woo Kim (*Chungnam National University*)

Wed-Mo-Po3.05-04 [31]: Experimental Verification and Analytical Prediction for Generating Characteristics of Double-Sided Permanent Magnet Linear Synchronous Generator for Ocean Wave Energy Converter

Sung-Won Seo, Kyung-Hun Shin (*Chungnam National University*), Jang-Young Choi (*Department of Electrical Engineering, Chungnam National University*), Min-Mo Koo (*Hyundai Mobis*), Ick-Jae Yoon (*Department of Electrical Engineering, Chungnam National University*) and Keyyong Hong (*Offshore Plant Research Division, Korea Research Institute of Ships & Ocean Engineering*)

Wed-Mo-Po3.05-05 [32]: Experimental Verification and No-load Characteristics Analysis of Permanent magnet Linear Oscillating Actuator by using Semi-3D Analysis Technique with Corrected Stacking Factor

Jong-Hyeon Woo, Chang-Woo Kim (*chungnam national university*), Tae-Kyoung Bang (*Republic of Korea /Chungnam National University*), Sung-Ho Lee (-), Chan-Ho Baek (*HanonSystem*) and Jang-Young Choi (*Department of Electrical Engineering, Chungnam National University*)

Wed-Mo-Po3.05-06 [33]: Research of Post-Assembly Magnetization of Large Surface-Mounted Rare-Earth Permanent Magnet Machines with Integrated Magnetizing Windings combing with Stator Windings

Qingjian Wang, Hongfa Ding (*Wuhan National High Magnetic Field Center, Huazhong University of Science and Technology*), Jun Zhou and Hang Zhang (*Huazhong University of Science and Technology*)

Wed-Mo-Po3.05-07 [34]: Detent Force and Static Thrust Experimental Analysis of a 3kW Single-Phase Linear Permanent Magnet Generator for Striling Engines

Kyu-Seok Lee, Sung-Ho Lee (-), Jung-Hyung Park, Min-seok Kim (*Korea Institute of Industrial Technology*) and Jang-Young Choi (*Department of Electrical Engineering, Chungnam National University*)

Wed-Mo-Po3.05-08 [35]: Maximizing Efficiency of IPMSG in the Engine Generator System of a Plug-in Hybrid EV and Its Comparison with SPMSG

Ho-Chang Jung (*Korea Automotive Technology Institute*), Dongsu Lee (*University of Illinois at Urbana-Champaign*) and Deok-Jin Kim (*Korea Automotive Technology Institute.*)

Wed-Mo-Po3.05-10 [36]: A Novel Permanent Magnet Linear Generator

Hao Chen and Rui Nie (*China University of MIning and Technology*)

Wed-Mo-Po3.05-11 [37]: Numerical Study of AC Losses of HTS Coils for Rotor of Superconducting Generator Influenced by External Magnetic Field

Xiangyu Huang (-) and Zhen Huang (*Shanghai Jiao Tong University*)

09:30 - 11:15 **Level 2 Posters 1**

Wed-Mo-Po3.06 - Generators II

Session Moderators: Timothy Coombs, University of Cambridge and Michael Green, LBNL

Wed-Mo-Po3.06-01 [38]: Design and Performance Test of an 1-kW-class HTS Generator with HTS Contactless Rotary Excitation Device

Ji Hyung Kim, Yoon Seok Chae, Jae Hyung Moon (*Jeju National University*), Huu Luong Quach (*department of electrical engineering Jeju National University*), Jung Hyup Ko, Chang Ju Hyeon (*Jeju National University*), Ho-San Myung (*Department of Electrical Engineering Jeju National University*), Sail Park (*Korea Institute of Energy Research*), Chang-Jin Boo (*Jeju International University*), Yong Soo Yoon (*department of electrical engineering, Shin Ansan University*), Haeryong Jeon, Seunghak Han, Tae Kuk Ko (*Yonsei University*), Hyung-Wook Kim, Young-Sik Jo (*Korea Electrotechnology Research Institute*), Heui-Joo Park (*Doosan Heavy Industries & Construction Co*) and Ho Min Kim (*Jeju National University*)

Wed-Mo-Po3.06-03 [39]: Design of a HTS Field Winding Vernier Machine with HTS bulks on Flux Modulation Pole

Do Hyun Kang (*Sungkyunkwan University*), Sang-Yong Jung (*Department of Electronic and Computer Engineering, Sungkyunkwan University*), Dae-Woo Kim (*Sungkyunkwan University*) and Yong-Jae Kim (*Chosun university*)

Wed-Mo-Po3.06-04 [40]: The structure design of a 300-kvar class HTS synchronous condenser prototype

Peng Song, Qihong Wu (*Tsinghua University*), Zhengjun Shi (*Electric Power Research Institute of Guangdong Power Grid Corporation*), Ye Yang (*Central Research Institute, Dongfang Electric Corporation Ltd.*), Luming Zhang (*Shanghai Electric Machinery Co., Ltd.*), Beimin Wu (*Institute of Modern Physics, Chinese Academy of Science*), Meng Song (*Electric Power Research Institute of Guangdong Power Grid Corporation*) and Timing Qu (*State Key Laboratory of Tribology, Department of Mechanical Engineering, Tsinghua University*)

Wed-Mo-Po3.06-05 [41]: Design and Numerical Analysis of 10 MW-class Fully-Superconducting Synchronous Generators Installing the New Casing Structure for Turboelectric Propulsion System

Masataka Komiya, Ryota Sugouchi, Takuya Aikawa, Hiromasa Sasa (*Kyushu University*), Shun Miura (*Department of Energy Engineering and Science, Nagoya University*), Takashi Yoshida, Teruyoshi Sasayama, Masataka Iwakuma (*Kyushu University*), Akira Tomioka (*Fuji Electric Co., Ltd*), Masayuki Konno (*Fuji Electric Co., Ltd.*) and Teruo Izumi (*Advanced Industrial Science and Technology*)

Wed-Mo-Po3.06-06 [42]: Design and Analysis of a 10-MW-Class HTS Generator considering Various Winding Insulation Techniques for HTS Rotor-Field Poles

Yoon Seok Chae, Ji Hyung Kim, Huu Luong Quach, Jae Hyung Moon, Jung Hyup Ko, Chang Ju Hyeon (*department of electrical engineering, Jeju National University*), Sail Park (*Korea Institute of Energy Research*), Chang Jin Boo (*department of electrical engineering and Energy, Jeju International University*), Yong Soo Yoon (*department of electrical engineering, Shin Ansan University*), Yeong Chun Kim (*Doosan Heavy*

Industries & Construction Co), Hyung Wook Kim, Young Sik Jo (*Korea Electrotechnology Research Institute*) and Ho Min Kim (*department of electrical engineering, Jeju National University*)

09:30 - 11:15 **Level 2 Posters 1**

Wed-Mo-Po3.07 - Magnetization and AC Losses I

Session Moderators: Pasquale Fabbricatore, INFN Genova and Hiroshi Ueda, Okayama University

Wed-Mo-Po3.07-01 [43]: Magnetizing Technique for Permanent Magnets in IPM Motor Rotors Using HTS Bulk Magnet

Tetsuo Oka (*Shibaura Institute of Technology*), Shoya Hasebe, Jun Ogawa, Satoshi Fukui, Tomohito Nakano (*Niigata University*), Kazuya Yokoyama (*Ashikaga University*), Naomichi Sakai, Muralidhar Miryala and Masato Murakami (*Shibaura Institute of Technology*)

Wed-Mo-Po3.07-02 [44]: Trapped magnetic field properties of a stacked Bi2223/Ag (DI-BSCCO) superconducting tapes

Tomoyuki Naito, Hiroyuki Fujishiro (*Iwate University*) and Yuichi Yamada (*Sumitomo Electric Industries, Ltd.*)

Wed-Mo-Po3.07-03 [45]: Measurement and Analysis on Local Magnetization Properties of RE-123 Coated Conductor with DC Transport Current and External Magnetic Field

Kohei Higashikawa, Naohiro Numata, Kohei Hisajima, Takumi Suzuki and Takanobu Kiss (*Kyushu University*)

Wed-Mo-Po3.07-04 [46]: HTS closed-loop coils energized by a Transformer-Rectifier Flux Pump

Li Lu, Wei Wu, Jingbo Lin, Xiao-Fen Li, Jie Sheng, Yunhao Pan, Zhiyong Hong and Zhijian Jin (*Shanghai Jiao Tong University*)

Wed-Mo-Po3.07-05 [47]: Influence of the size of soft-iron yoke on trapped field performance of HTS bulk

Kazuya Yokoyama (*Ashikaga University*) and Tetsuo Oka (*Shibaura Institute of Technology*)

Wed-Mo-Po3.07-06 [48]: Magnetization of HTSC tape in flux pump regime

Alexsey Podlivaev (*National Research Nuclear Institute MEPHI*), Sergei Pokrovskii (*National Research Nuclear University MEPhI*), Maxim Osipov (*NRNU MEPhI*) and Igor Rudnev (*National Research Nuclear University MEPhI (Moscow Engineering Physics Institute)*)

Wed-Mo-Po3.07-08 [49]: Modelling of Field and Field Quality in a YBCO Coated-Conductor Wound Planar Undulator

Milan Majoros, Mike Sumption (*The Ohio State University*), Ibrahim Kesgin, Yury Ivanyushenkov (*Argonne National Laboratory*) and Edward Collings (*The Ohio State University*)

09:30 - 11:15 **Level 2 Posters 2**

Wed-Mo-Po3.08 - Current Limiters I

Session Moderators: Mark Ainslie, University of Cambridge and Martin Eibach, GSI

Wed-Mo-Po3.08-02 [54]: Modelling and experimental verification of dc inductive superconducting fault current limiter

Bin Li, Changqi Wang, Wei Hong, Song Yang and Ying Xin (*Tianjin University,Key Laboratory of Smart Grid of Ministry of Education School of Electrical & Information Engineering*)

Wed-Mo-Po3.08-03 [55]: A Resistance Model of Fault Current Limiting Magnets under DC Impact

Haonan Wang (*Applied Superconductivity Key Lab, Institute of Electrical Engineering, Chinese Academy of Science*), Guomin Zhang (*Key Laboratory of Applied Superconductivity, Institute of Electrical Engineering,Chinese Academy of Sciences*), Zhifeng Zhang (*Institute of Electrical Engineering Chinese Academy of Sciences*), Shizhuo Liu (*Institute of Electrical Engineering, CAS*) and Huijuan Gao (*Applied Superconductivity Key Lab, Institute of Electrical Engineering, Chinese Academy of Science*)

Wed-Mo-Po3.08-04 [56]: Design of a novel inductive type fault current limiting

Sung-Kyu Kim, Jeon-Wook Cho (*Korea Electrotechnology Research Institute*) and Kideok Sim (*SuperGenics*)

Wed-Mo-Po3.08-05 [57]: Simulation and experimental investigation on the critical current and AC losses of a hybrid superconducting fault current limiter with bias magnetic field during normal operation

Hanyang Qin (*North China University of Technology*) and Jiahui Zhu (*China Electric Power Research Institute*)

Wed-Mo-Po3.08-06 [58]: Conceptual design of a saturated iron core superconducting fault current limiter for a DC power system

Van Quan Dao, Chang-Soon Kim, Jae-In Lee, Minwon Park and In-Keun Yu (*Changwon National University*)

Wed-Mo-Po3.08-09 [59]: AC Loss Analysis of a 10-kV / 500-A Flux-coupling type Superconducting Fault Current Limiter

Sinian Yan (*Huazhong University of Science and Technology, China*), Li Ren, Ying Xu, Yu Zhang, Zhiwei Cao (*Huazhong University of Science and Technology*), Rongyu Su (*State Key Laboratory of Advanced Electromagnetic Engineering and Technology*) and Guilun Chen (*Huazhong University of Science and Technology*)

Wed-Mo-Po3.08-10 [60]: Balanced current distribution in high coupling coils of flux-coupling-type superconducting fault current limiter

Rongyu Su (*State Key Laboratory of Advanced Electromagnetic Engineering and Technology*), Li Ren, Jing Shi, Ying Xu (*Huazhong University of Science and Technology*), Sinian Yan (*Huazhong University of Science and Technology, China*), Yu Zhang and Zhiwei Cao (*Huazhong University of Science and Technology*)

Wed-Mo-Po3.08-11 [61]: Analysis on Operation Characteristics of Double Quench Flux Lock Type Superconducting Fault Current Limiter

Hyeong-Jin Lee (*Soongsil University*), Jin-Seok Kim (*Seoil Univ.*) and Jae-Chul Kim (*Soongsil University*)

Wed-Mo-Po3.08-12 [62]: Study on the current limiting characteristics of YBCO coated conductor according to different stabilizer layer with iron core and coil

Ho Ik Du, Sung Chae Yang and Hyun Gi Jeong (*Chonbuk National University*)

09:30 - 11:15 **Level 2 Posters 2**

Wed-Mo-Po3.09 - Current Limiters II

Session Moderators: Mark Ainslie, University of Cambridge and Martin Eibach, GSI

Wed-Mo-Po3.09-01 [63]: Fabrication and performance test of fault current limiting elements made of non-stabilizer coated conductors

Ho Ik Du, Sung Chae Yang and Hyun Gi Jeong (*Chonbuk National University*)

Wed-Mo-Po3.09-02 [64]: Comparison of Fault Current Limiting Characteristics between the separated Three-phase Flux-lock Type SFCL and the Integrated Three-phase Flux-lock Type SFCL

Ho Ik Du, Sung Chae Yang, Hyun Gi Jung, Sang Jae Ban and In Kwon Lee (*Chonbuk National University*)

Wed-Mo-Po3.09-03 [65]: Design and Test of 6 kV / 140 A Conduction Cooled Flux Coupling Type Superconducting Fault Current Limiter

Janusz Kozak (*Electrotechnical Institute*) and Michal Majka (*Lublin University of Technology*)

Wed-Mo-Po3.09-04 [66]: The application of hybrid-type DC SFCL in shipboard MVDC system

Zheng Li, Li Ren and Siyuan Liang (*Huazhong University of Science and Technology*)

Wed-Mo-Po3.09-05 [67]: Voltage Distribution Research on Flux-Coupling-Type SFCL

Zhiwei Cao, Li Ren, Ying Xu (*Huazhong University of Science and Technology*), Sinian Yan (*Huazhong University of Science and Technology, China*), Rongyu Su (*State Key Laboratory of Advanced Electromagnetic Engineering and Technology*), Guilun Chen and Yu Zhang (*Huazhong University of Science and Technology*)

Wed-Mo-Po3.09-06 [68]: Technical and Economic Analysis of Resistive Superconducting Current Fault Limiter with Parallel Shunt Resistance

Xiangyu Tan, Yuejin Tang, Li Ren, Ying Xu, Siyuan Liang, Sinian Yan, Zheng Li and Guilun Chen (*Huazhong university of science and technology*)

Wed-Mo-Po3.09-07 [69]: Electromagnetic field analysis of resistive superconducting fault current limiters for DC applications

Dong Xia (*Chinese Academy of Sciences*)

Wed-Mo-Po3.09-08 [70]: Magnetizing Characteristics of Bridge Type SFCL with Simultaneous Quench Using Flux-Coupling

Seok-Cheol Ko (*Kongju National University*), Tae-Hee Han (*Jungwon University*) and Sung-Hun Lim (*Soongsil University*)

Wed-Mo-Po3.09-09 [71]: Fault Current Limiting Characteristics of a Small-Scale Bridge Type SFCL with Single HTSC Element Using Flux-Coupling

Seok-Cheol Ko (*Kongju National University*), Tae-Hee Han (*Jungwon University*), Byunggyu Yu, Jihoon Kim (*Kongju National University*) and Sung-Hun Lim (*Soongsil University*)

Wed-Mo-Po3.09-10 [72]: Current-Limiting Property and Loss Evaluation of Resistive Type SFCLs Used in a DC Distribution Network with Double Closed-Loop Structure

Lei Chen, Guocheng Li, Xuyang Zhang, Hongkun Chen (*Wuhan University*), Yubo Tao (*State Grid Jiangsu Electric Power Co., Ltd Maintenance Branch Company*), Ying Xu, Li Ren and Yuejin Tang (*Huazhong University of Science and Technology*)

Wed-Mo-Po3.09-11 [73]: Application Study of a Flux-Coupling-Type SFCL for Low-Voltage Ride-Through Operation of a Virtual Synchronous Generator

Lei Chen, Guocheng Li, Xuyang Zhang, Hongkun Chen (*Wuhan University*), Ying Xu, Li Ren and Yuejin Tang (*Huazhong University of Science and Technology*)

Wed-Mo-Po3.09-12 [74]: Numerical Analysis of the 6 kV / 140 A Conduction Cooled Flux Coupling Type Superconducting Fault Current Limiter.

Michal Majka (*Lublin University of Technology*), Janusz Kozak and Slawomir Kozak (*Electrotechnical Institute*)

09:30 - 11:15 **Level 2 Posters 2**

Wed-Mo-Po3.10 - Conductors for Large Scale Applications

Session Moderators: Jeseok Bang, Seoul National University and Cesar Luongo, ITER Organization

Wed-Mo-Po3.10-01 [75]: Study of superconducting strands damage and mechanical characteristics by different shape of CICC conductors

Zichuan Guo (*Institute of Plasma Physics Chinese Academy of Sciences*), Chao Dai (*Institute of Plasma Physics, Chinses Academy of Science*) and Jinggang Qin (-)

Wed-Mo-Po3.10-02 [76]: Conductor Design of the Madmax 9 T Large Dipole Magnet

Christophe Paul Berriaud (*DAPNIA*), Walid Abdel Maksoud (*CEA / Irfu*), Valerio Calvelli, Guillaume Dilasser, Francois-Paul Juster, Francois Nunio (*CEA*), Jean-Michel Rifflet (-) and Loris Scola (*CEA*)

Wed-Mo-Po3.10-03 [77]: Nb3Sn Wind & React conductors and joints for the low field grades of a layer wound DEMO TF coil

Luigi Muzzi, Riccardo Righetti, Luigi Affinito, Sandro Chiarelli, Valentina Corato, Antonio della Corte, Aldo Di Zenobio (*ENEA*), Albano Bragagni, Massimo Seri, Andrea Formichetti (*TRATOS Cavi*), Marco Roveta (*Criotec Impianti SpA*), Stefano Galignano (*CRIOTEC Impianti*), Lucio Merli and Mohammed Arabi (*ENEA*)

Wed-Mo-Po3.10-04 [78]: Post-mortem mechanical investigation of ITER TF conductor samples after heat treatment and SULTAN testing

Matthew C. Jewell (*Materials Science Center, University of Wisconsin-Eau Claire*), Colin Fackler, Anthony Doan (*University of Wisconsin - Eau Claire*), Benjamin J. Thronson (*University of Wisconsin – Eau Claire*), Vladimir Tronza (*Iter Organization*) and Neil Mitchell (*ITER*)

Wed-Mo-Po3.10-05 [79]: Cable Compaction as a Possible Factor to Reduce Tcs Degradation of ITER Toroidal Field Conductors

Denis Kaverin (*V*) and Vitaly Vysotsky (*Russian Scientific R&D Cable Institute*)

Wed-Mo-Po3.10-06 [80]: Research on non-destructive examination of NbSn3 cables based on the method of inversion of electromagnetic property

Xiaochuan Liu (*Institute of Plasma Physics Chinese Academy of Sciences*)

Wed-Mo-Po3.10-07 [81]: AC loss, contact resistance, and cabling degradation analysis of various Nb3Sn sub-size CICC cable designs

Anvar V A (*University Of Twente*), Teun Evert Willem Hamer (*Saxion*), Tommaso Bagni, Konstantin Yagotintsev (*University of Twente*), Jinggang Qin (-), Yu Wu (*ASIPP*), Arnaud Devred (*CERN*), Md Shahriar Hossain (*University of Wollongong*), Chao Zhou (*Institute of Plasma Physics, Chinese Academy of Sciences*) and Arend Nijhuis (*University of Twente*)

09:30 - 11:15 Level 3 Posters

Wed-Mo-Po3.11 - Quench and Normal Zone Behavior II

Session Moderators: Fedor Gömöry, Institute of Electrical Engineering, Slovak Academy and Honghai Song, BNL

Wed-Mo-Po3.11-01 [88]: Quench analysis of no-insulation magnet using YBCO coated conductor tapes with copper cladding

Shijun Zheng (*Institute of Modern Physics, Chinese Academy of Sciences*), Yuquan Chen (-), Tongjun Yang, Xianjin Ou, Wei Wu, Zhuoyue Du, Lizhen Ma and Ping Yuan (*Institute of Modern Physics, Chinese Academy of Sciences*)

Wed-Mo-Po3.11-02 [89]: Quench Analysis of an LTS Quadrupole Triplet Magnet System for the IBS RAON Inflight-Fragment Separator

Wooseung Lee (*Massachusetts Institute of Technology, Francis Bitter Magnet Laboratory / Plasma Science and Fusion Center*), Dongkeun Park, Yukikazu Iwasa (*Francis Bitter Magnet Laboratory / Plasma Science and Fusion Center, Massachusetts Institute of Technology*), Jiho Lee and Do Gyun Kim (*Rare Isotope Science Project, Institute for Basic Science (IBS)*)

Wed-Mo-Po3.11-03 [90]: A fast turnaround experimental platform for testing quench initiation and detection of REBCO coated conductors for high-field magnet applications

Xijie Luo (*Kyoto University*), Tengming Shen (*Lawrence Berkeley National Lab*), Xiaorong Wang (*Lawrence Berkeley National Laboratory*), Naoyuki Amemiya (*Kyoto University*), H Higley (*Lawrence Berkeley National Laboratory*) and Toru Ogitsu (-)

Wed-Mo-Po3.11-04 [91]: A Lumped Circuit Model for No-Insulation Pancake Coil to Consider Fast Electromagnetic Quench Propagation

Chaemin Im (*Seoul National University*), Soobin An (*SeoulNationalUniversity*), Jeseok Bang, Jaemin Kim, Uijong Bong, Jung Tae Lee, Jeonghwan Park, Seong Hyeon Park and Seungyong Hahn (*Seoul National University*)

Wed-Mo-Po3.11-05 [92]: Numerical and Experimental Analysis of Thermal Stability of Superconducting Windings Using a YBCO Core Cable

Zhang Huiming and Zhu Jiahui (*China*)

Wed-Mo-Po3.11-07 [93]: Analysis of the influence of hot spots on the design of DC resistive SFCLs

Jiabin Yang, Boyang Shen, Jianzhao Geng, Chao Li, Jun Ma and Timothy Coombs (*University of Cambridge*)

Wed-Mo-Po3.11-08 [94]: Investigation on Quench and Normal Zone Propagation Characteristics of 2G HTS Racetrack Coil with Metal-Insulator Transition Insulation Material

Huu Luong Quach, Ji Hyung Kim, Yoon Seok Chae, Chang Ju Hyeon, Jae Hyung Moon, Jung Hyup Ko, Chang-Jin Boo (*Jeju International University*), Young-Gyun Kim, Haigun Lee (*Korea University*), Hyung-Wook Kim, Young-Sik Jo (*Korea Electrotechnology Research Institute*) and Ho Min Kim (*Jeju National University*)

Wed-Mo-Po3.11-09 [95]: Experimental study on the quench characteristic of YBCO tapes with different arranggements

DongSheng Pu (*State Key Laboratory of Advanced Electromagnetic Engineering an*), Li Ren, Ying Xu, Gui Lun Chen, Si Nian Yan and Kao Zhou (*Huazhong University of Science and Technology*)

09:30 - 11:15 **Level 3 Posters**

Wed-Mo-Po3.12 - Motors IX

Session Moderators: Hao Chen, China University of Mining & Technology and Qiuliang Wang, IEE CAS

Wed-Mo-Po3.12-01 [96]: Design and Analysis of a Rotor Permanent Magnet Hybrid Excited Axial Switched-Flux Machine

Jilong Zhao, Xiaowei Quan (*School of Automation and Information Engineering, Xi'an University of Technology*) and Shuangxia Niu (*Department of Electrical Engineering, Hong Kong Polytechnic University*)

Wed-Mo-Po3.12-02 [97]: Measurement of eddy current loss of permanent magnet with higher frequency and temperature effects

Nijan Yogal (*Physikalisch-Technische Bundesanstalt*), Markus Henke (*TU Braunschweig (IMAB)*) and Christian Lehrmann (*Physikalisch-Technische Bundesanstalt*)

Wed-Mo-Po3.12-03 [98]: Experimental characterization of a no-insolation HTS racetrack coil in travelling magnetic fields

Kang Liu, Guangtong Ma, Zhengwei Zhao (*Applied Superconductivity Laboratory, State Key Laboratory of Traction Power, Southwest Jiaotong University*), Chao Wang, Tianyong Gong, Yao Cai (*School of Electrical Engineering, Southwest Jiaotong University*), Pengbo Zhou and Weihai Zhang (*Applied Superconductivity Laboratory, State Key Laboratory of Traction Power, Southwest Jiaotong University*)

Wed-Mo-Po3.12-04 [99]: Comparative Analysis of a Linear Electric Motor using Superconducting and Conventional Conductor Coil

Ivan Hernandez-Robles (*Universidad de Guanajuato-DICIS*), Adrian Gonzalez-Parada, Xiomara Gonzalez-Ramirez (*University of Guanajuato*) and Juan Carlos Olivares-Galvan (*Universidad Autónoma Metropolitana*)

Wed-Mo-Po3.12-05 [100]: A novel permanent magnet linear motor for the application of urban transit

Cong Deng, Caiyong Ye and Jiangtao Yang (-)

Wed-Mo-Po3.12-06 [101]: A Study on Robust Design of Irreversible Demagnetization of IPMSM Rotor Core Using Dy-Free Permanent Magnet

Hyungsik Kong, Sung Gu Lee (-), SuYeon Cho (*KATECH*), Hyun-Jo Pyo, Min-Jae Jeong, Dong-Woo Nam and Won-Ho Kim (-)

Wed-Mo-Po3.12-07 [102]: Design of IPMSM for Electric Oil Pump considering PM Irreversible Demagnetization at Saturation Temperature

Dae-Woo Kim (*Sungkyunkwan University*), Sang-Yong Jung (*Department of Electronic and Computer Engineering, Sungkyunkwan University*), Do Hyun Kang, Jin-Seok Kim (*Sungkyunkwan University*) and Yong-Jae Kim (*Department of Electrical Engineering, Chosun University*)

Wed-Mo-Po3.12-08 [103]: A study on the magnet structure for reducing demagnetization by grain boundary diffusion method

Byungchan Kim and Dong-woo Kang (*Keimyung University*)

Wed-Mo-Po3.12-09 [104]: Study on Reduction of Eddy Current Loss of Permanent Magnets in Ultra-High Speed Machines

Ho-Joon Lee (*Busan Institute of Science & Technology University*), Hyungkwan Jang (*Hanyang University*), Seungheon Lee (-) and Ju Lee (*Hanyang University*)

Wed-Mo-Po3.12-10 [105]: Design and Analysis of a Magnetless Linear Variable Reluctance Motor with Modular Mover Units for Electric Propulsion

T. W. Ching, Yujun Shi (*University of Macau*), Wenlong Li (*The University of Hong Kong*) and Linni Jian (*Southern University of Science and Technology*)

Wed-Mo-Po3.12-11 [106]: A Novel Three-phase Tubular Switched Reluctance Linear Machine with Transverse-flux path

Hao Chen and Rui Nie (*China University of Mining and Technology*)

Wed-Mo-Po3.12-12 [107] [Invited]: Superconducting Synchronous Motors for Electric Ship Propulsion

David Torrey, Michael Parizh, Wolfgang Stautner, Nidhishri Tapadia, Anbo Wu, Minfeng Xu and Joseph Zierer (*GE Global Research*)

Wed-Mo-Po3.12-13 [108]: Application of AC Loss on HTS Magnet using Frequency Loss Induced Quench (FLIQ) Protection System.

Kikelomo Ijagbemi, Daniel Davies, Hongyu Bai, Eric Stiers (*National High Magnetic Field Laboratory*) and Sastry Pamidi (*The Florida State University*)

09:30 - 11:15 **Level 3 Posters**

Wed-Mo-Po3.13 - Motors X

Session Moderators: Hao Chen, China University of Mining & Technology and Qiuliang Wang, IEE CAS

Wed-Mo-Po3.13-01 [109]: Comparative Study of Permanent Magnet Assisted Linear Switched Reluctance Motor and Linear Flux Switching Permanent Magnet Motor for Railway Transportation

Ruiwu Cao (-), Su Enchao and Lu Minghang (*Nanjing University of Aeronautics and Astronautics*)

Wed-Mo-Po3.13-02 [110]: Modelling and Experimental Study on the Magnetization Losses of Tri-axial CORC Cable used in All-Electric Aircraft

Zixuan Zhu (-), Yawei Wang, Xiaoze Pei (*University of Bath*), Min Zhang and Weijia Yuan (*University of Strathclyde*)

Wed-Mo-Po3.13-03 [111]: Ferrite PM Optimization of SPM BLDC Motor for Oil-Pump Applications According to Magnetization Direction

Huai Cong Liu (*Hanyang Univ.*), Hyunwoo Kim, Seungheon Lee (-), Ho-Joon Lee (*Busan Institute of Science & Technology University*) and Ju Lee (*Hanyang University*)

Wed-Mo-Po3.13-04 [112]: A Study on Design of Hybrid Type Electromagnet for Maglev

Jae-Kwang Lee (*hanyang university*), Hyunwoo Kim (-), Sol Kim (*Electrical Information Department, yuhan university*) and Ju Lee (*Hanyang University*)

Wed-Mo-Po3.13-05 [113]: Study on The Novel Design Process of Working Bar of Double Cage Induction Motor

Dong-Ho Kim (*Gachon University*), Kwang Soo Kim (*Halla University*), Sung Gu Lee (*Busan University of Foreign Studies*), Suyeon Cho (*KATECH*), In-Jun Yang, Si-Woo Song and Won-Ho Kim (*Gachon University*)

Wed-Mo-Po3.13-06 [114]: Electromagnetic performance of HTS linear generator under Field-Cooled and Zero-Field-Cooled condition

Adrian Gonzalez-Parada and Ivan Abel Hernandez-Robles (*Universidad de Guanajuato*)

Wed-Mo-Po3.13-07 [115]: Evaluation of Power Losses in High-temperature Superconducting Coils for Field-excited Electric Motors

Y. W. Tang (*University of Macau*) and T. W. Ching (*University of Hong Kong*)

Wed-Mo-Po3.13-08 [116]: Analysis of Novel Wound Field Flux Linear Reversal Machine with Multiple MMF Working Harmonics

You Zhou, Yuting Gao, Ronghai Qu, Yi Cheng, Chaojie Shi and Yuanzhi Zhang (*Huazhong University of Science and Technology*)

Wed-Mo-Po3.13-09 [117]: Design Optimization of 2G High-Tc Superconducting Magnet for High Speed Transportation

Jungyoul Lim, Chang-Young Lee, Jin-Ho Lee, Suyong Choi and Kwan-Sup Lee (*Korea Railroad Research Institute*)

Wed-Mo-Po3.13-10 [118]: Study on The Novel Rotor Core of Induction Motor with Cross Lamination

Dong-Ho Kim (*Gachon University*), Kwang Soo Kim (*Halla University*), Sung Gu Lee (*Busan University of Foreign Studies*), Suyeon Cho (*KATECH*), In-Jun Yang, Si-Woo Song and Won-Ho Kim (*Gachon University*)

Wed-Mo-Po3.13-11 [119]: Design of a High temperature superconducting linear synchronous motor for pulse power application

Daoyuan Song, Shifeng Shen, Xusheng Wu and Zhaolong Sun (*Naval University of Engineering*)

Wed-Mo-Po3.13-12 [120]: A Feasibility Study to Apply the Bitter Magnet to Electric Power Devices

Soobin An (*SeoulNationalUniversity*), Jae-Woo Kang, Uijong Bong and Seungyong Hahn (*Seoul National University*)

11:15 - 12:45 Regency AB

Wed-Mo-Or10 - Resistive Accelerator Magnets

Session Moderators: Rüdiger Picker, TRIUMF and Kazuhiro Tanaka, KEK, High Energy Accelerator Research Organization

11:15 **Wed-Mo-Or10-01: Power test and magnetic measurement of the first short models of twin aperture magnets for FCC-ee**
Attilio Milanese, Jeremie Bauche and Carlo Petrone (*CERN*)

11:30 **Wed-Mo-Or10-02: Performance of the Optimized Mechanical Design of the CLIC Main Beam Quadrupole Magnet Prototype**
Michele Modena and Carlo Petrone (*CERN*)

11:45 **Wed-Mo-Or10-03: Comparative studies of three-dimensional analysis and measurement for establishing pulse electromagnet design**
Tomohiro Takayanagi (*JAEA/J-PARC*), Koki Horino and Tomoaki Ueno (*J-PARC*)

12:00 **Wed-Mo-Or10-04: Combined-function magnetic measurement system**
Reed Teyber and Erik Wallen (*Lawrence Berkeley National Laboratory*)

12:15 **Wed-Mo-Or10-05: TRIUMF new high resolution mass separator magnet design**
Marco Marchetto and George Clark (*TRIUMF*)

12:30 **Wed-Mo-Or10-06: Development of High Precision Low Field Prototype Dipole Magnets for CEPC Booster**
Wen Kang (*Institute of High Energy Physics (IHEP), CAS*), Xuwen Dai, Mei Yang, Yuan Chen and Jianxin Zhou (*Institute of High Energy Physics, CAS*)

11:15 - 12:45 **Regency CD**

Wed-Mo-Or11 - Magnetization and AC Losses in Conductors and Coils

Session Moderators: Sebastian Hellman, Paul Scherrer Institut and Eric Sun, Jefferson Lab

11:15 **Wed-Mo-Or11-01 [Invited]: Magnetization, Flux Penetration, and Drift of YBCO Cable Segments Models and Measurements for Accelerator Magnet Applications**
Mike Sumption (*The Ohio State University*), Cory Myers (*Ohio State University*), Chris Kovacs and Edward Collings (*The Ohio State University*)

11:45 **Wed-Mo-Or11-02 [Invited]: Magnetic field measurements of stack of double-pancake coils wound with striated and copper-plated coated conductors**
Naoyuki Amemiya, Ning Wang (*Kyoto University*), Satoshi Yamano (*SuperPower Inc.*) and Hisaki Sakamoto (*Furukawa Electric Co., Ltd*)

12:15 **Wed-Mo-Or11-03: Experimental results of field-error cancellation with HTS-based magnetic screens**
Lorenzo Bortot, Matthias Mentink (*CERN*), Sebastian Schöps (*Technische Universität Darmstadt*), Jeroen Van Nugteren and Arjan Verweij (*CERN*)

12:30 **Wed-Mo-Or11-04: Magnetic vector potential-based formulations for modeling superconducting applications: a valid alternative to the H-formulation**
Francesco Grilli, Tara Benkel (*Karlsruhe Institute of Technology*), Roberto Brambilla (-) and Victor Zermeno (*NKT*)

11:15 - 12:45 **Regency EF**

Wed-Mo-Or12 - Flux Pump and Cryostats

Session Moderators: Timothy Coombs, University of Cambridge and Zhenan Jiang, Victoria University of Wellington

11:15 **Wed-Mo-Or12-01: Investigation on the Ultra-high field Flux Pumped superconducting magnets**
Chao Li and Timothy Coombs (*University of Cambridge*)

11:30 **Wed-Mo-Or12-02: HTS Switch for use in Flux Pumps**
James Gawith, Jianzhao Geng, Boyang Shen, Jun Ma, Chao Li and Timothy Coombs (*University of Cambridge*)

11:45 **Wed-Mo-Or12-03: Design, construction and test of thermally activated ReBCO switches**
Nikolay Bykovskiy, Alexey Dudarev and Herman H J Ten Kate (*CERN*)

12:00 **Wed-Mo-Or12-04: Self-Protecting HTS Current Lead - Demonstration of a new technology**
Alexey Dudarev, Nikolay Bykovskiy (*CERN*), Tim Mulder (*CERN / Twente Technical University (NL)*), Helder Filipe Pais Da Silva and Herman Ten Kate (*CERN*)

12:15 **Wed-Mo-Or12-05: Conceptual design of the cryostat for a highly radiation transparent 2 T superconducting detector solenoid for FCC-ee**
Veronica Ilardi (*Twente Technical University (NL)*), Helder Filipe Pais Da Silva, Alexey Dudarev, Torsten Koettig (*CERN*), Lennard Niclas Busch (*KIT - Karlsruhe Institute of Technology (DE)*) and Herman Ten Kate (*CERN*)

12:30 **Wed-Mo-Or12-06: Conceptual design of a conduction cooled superconducting undulator**
Shiroyanagi Yuko (*Advacned Photon Source, Argonne National Laboratory*), Quentin Hasse (*Argonne National Laboratory*), Yury Ivanyushenkov (*ANL*), Matthew T. Kasa and Ibrahim Kesgin (*Argonne National Laboratory*)

14:00 - 16:00 Level 2 Posters 1

Wed-Af-Po3.14 - Structural Materials for Magnets

Session Moderators: Pablo Cayado, Karlsruhe Institute of Technology and Akira Yamamoto, KEK and CERN

Wed-Af-Po3.14-01 [1]: The Study of Strengthening and the Electrical Resistivity of Deformation Processed Cu/Cu-16%Nb and Cu/Cu-7%Nb Microcomposites
Victor Pantsyrny (*Bochvqr Institute*), Mariya Polikarpova (*JSC VNIINM*), Valentin Guryev (*NRC «Kurchatov Institute»*), Natalia Khlebova, Nikolay Belyakov (*NANOELECTRO LLC*), Pavel Lukyanov and Darya Novosilova (*JSC VNIINM*)

Wed-Af-Po3.14-02 [2]: Study of the fatigue behavior of unidirectional zylon/epoxy composite used in pulsed magnets
Houxiu Xiao (*Wuhan National High Magnetic Field Center*), Fan Jiang (-), Liang Li (*Huazhong University of Science and Technology*), Quqin Sun (-) and Tao Peng (*Wuhan National High Magnetic Field Center*)

Wed-Af-Po3.14-04 [3]: High strength and conductivity CuAg micro-composites by accumulative drawing and bundling process
Ming Liang (*Northwest Insititute for Non-ferrous Metal Research*), Pengfei Wang, Xiaoyan Xu (*Northwest Institute for Non-ferrous Metal Research*), Chengshan Li (*Northwest Institute for Nonf-ferrous Metal Research*), Tao Peng (*Wuhan National High Magnetic Field Center*) and Pingxiang Zhang (*Northwest Institute for Non-ferrous Metal Research*)

Wed-Af-Po3.14-05 [4]: Examination and Assessment of Large Forged Structural Components for the Precompression Structure of the ITER Central Solenoid
Stefano Sgobba (*CERN*), Ignacio Aviles Santillana (*CERN, University Carlos III (ES)*), Gonzalo Arnau Izquierdo (*CERN*), Paul Libeyre (*ITER Organization*), Travis Reagan and Duke Hughes (*US ITER Project*)

14:00 - 16:00 **Level 2 Posters 1**

Wed-Af-Po3.15 - HTS Magnets and Conductors for Accelerators

Session Moderators: Maria Baldini, FNAL and Alexander Otto, Solid Material Solutions, LLC

Wed-Af-Po3.15-01 [5]: Manufacturing of the EuCARD2 Roebel-based cos-theta magnet at CEA Saclay.

Maria Durante (-), Clement Lorin (*Université Paris-Saclay (FR)*), Glyn Kirby and Jeroen van Nugteren (*CERN*)

Wed-Af-Po3.15-02 [6]: Bending properties of quasi-isotropic strands made by 2G wires at 77 K

Changtao Kan (-) and Yinshun Wang (*North china electric power university*)

Wed-Af-Po3.15-03 [7]: Quench Analysis of HTS quadrupole magnets for the IF Separator of IBS RISP Demonstrating Electromagnetic Quench Propagation

Jiho Lee, Do Gyun Kim (*Institute for Basic Science*), Sukjin Choi (*IBS*) and Hyun Man Jang (*Institute for Basic Science*)

Wed-Af-Po3.15-04 [8]: Design study and preliminary test results of a high field ReBCO coil with a new end structure

Ershuai Kong (*IHEP&USTC*), Lin Wang (*USTC*), Chengtao Wang, zhan zhang, Da Cheng, Yingzhe Wang, Lingling Gong, Shaoqing Wei, Zhen Zhang, Quanling Peng, Xiangchen Yang, Jianxin Zhou and Qingjin Xu (*IHEP, CAS*)

Wed-Af-Po3.15-05 [9]: Excitation and Magnetic Field Performances of a Prototype REBCO Sextupole Magnet at 4.2 K

Xudong Wang (*High Energy Accelerator Research Organization*), Kiyosumi Tsuchiya, Yasushi Arimoto, Akio Terashima, Ryuichi Ueki, Zhanguo Zong (*KEK*), Masanori Kawai (*High Energy Accelerator Research Organization (KEK)*), Mika Masuzawa, Norihito Ohuchi, Masafumi Tawada (*KEK*) and Akihiro Kikuchi (*NIMS*)

Wed-Af-Po3.15-06 [10]: Research and development of future radiation resistant accelerator magnets based on high temperature superconductors

Masami Iio (*High Energy Accelerator Research Organization (KEK)*), Makoto Yoshida (*KEK*), Kento Suzuki, Michinaka Sugano (-), Tatsushi Nakamoto (*KEK*) and Toru Ogitsu (-)

Wed-Af-Po3.15-07 [11]: HTS Quadrupole Magnet for the Persistent Current Mode Operation

Vladimir Kashikhin and Daniele Turrioni (*Fermilab*)

Wed-Af-Po3.15-08 [12]: Applying Superconducting Magnet Technology for Klystron Beam Focusing and Energy Efficient RF Power Systems in Particle Accelerators

Shinichiro Michizono (*KEK*), Akira Yamamoto (*KEK and CERN*), Walter Wuench, Igor Syratchev, Gerard Mcmonagle, Nuria Catalan Lasheras, Steinar Stepnes (*CERN*), Hiroyuki Watanabe, Hideki Tanaka, Shuuichi Kido, Tomoyuki Koga, Yasunori Koga and Kazuhiro Takeuchi (*Hitachi Co. Ltd.*)

Wed-Af-Po3.15-09 [13]: Effect of Screening Current Induced Field on Field Quality of an Air-Core HTS Quadruple Magnet

Geonwoo Baek (*Yonsei University*), Junseong Kim (*Electrical and Electronic Engineering, Yonsei University*), Sangjin Lee (*Uiduk University, Gyeongju, Republic of Korea*) and Tae Kuk Ko (*Yonsei University*)

Wed-Af-Po3.15-10 [14]: Experimental test of the Magnetic Field Active Shimming Method for the Air-core HTS Quadruple Magnet

Junseong Kim (*Electrical and Electronic Engineering, Yonsei University*), Geonwoo Baek (*Yonsei University*), Woo Seung Lee (*Massachusetts Institute of Technology, Francis Bitter Magnet Laboratory / Plasma Science and Fusion Center*), Seunghak Han (*Yonsei University*), Sangjin Lee (*Uiduk University*) and Tae Kuk Ko (*Yonsei University*)

Wed-Af-Po3.15-11 [15]: The Design of superconducting magnet for IF (In-flight Fragment) separator of RISP

Sukjin Choi (*IBS*), Do Gyun Kim (*Institute for Basic Science*), Jiho Lee (*Massachusetts Institute of Technology*) and Hyun Man Jang (*Institute for Basic Science*)

Wed-Af-Po3.15-12 [16]: Development of a 3-T conduction cooled MgB2 dipole magnet

Yuhao Kang, Timing Qu (*State Key Laboratory of Tribology, Department of Mechanical Engineering, Tsinghua University*), Qihong Wu, Peng Song (*Tsinghua University*), Yufan Yan (*State Key Laboratory of Tribology, Department of Mechanical Engineering, Tsinghua University*), Wu Beimin (*Institute of Modern Physics, Chinese Academy of Sciences*), Mingzhi Guan (*Institute of Modern Physics,Chinese Academy of Sciences*) and Wei Wu (*Institute of Modern Physics, Chinese Academy of Sciences*)

Wed-Af-Po3.15-13 [17]: Preliminary research on Soldered Stack ReBCO Cable

Feipeng Ning, Xuyang Liu and Zongtai Xie (*IHEP*)

Wed-Af-Po3.15-14 [18]: New Application of Superconducting MgB2 Tubes for Passive Magnetic Field Shielding for Electron Ion Collider

Honghai Song, Kathleen Amm (*Brookhaven National Laboratory*), Christoph Montag (*BNL*), Brett Parker (*Brookhaven National Laboratory (US)*), Xuan Peng (*Hyper Tech Research Inc.*), Matt Rindfleisch (*Hyper Tech*), Mike Sumption (*The Ohio State University*) and Michael Tomsic (*Hyper Tech Research*)

14:00 - 16:00 **Level 2 Posters 1**

Wed-Af-Po3.16 - Magnets for Light Source

Session Moderators: Luisa Chiesa, Tufts University and Yury Ivanyushenkov, ANL

Wed-Af-Po3.16-01 [19]: Control System for a Cryogenic Permanent Magnet Undulator at Taiwan Photon Source

Chih-Yu Liao, Chun-Yi Wu, Yung-Sen Cheng, Chih-Hsien Huang, Demi Lee, Jenny Chen, Kuo-Hwa Hu and Kuo-Tung Hsu (*NSRRC*)

Wed-Af-Po3.16-02 [20]: Design and Development of a New Control Architecture for Elliptically Polarizing Undulator at Taiwan Photon Source

Chih-Yu Liao, Chun-Yi Wu, Yung-Sen Cheng, Chih-Hsien Huang, Demi Lee, Jenny Chen, Kuo-Hwa Hu and Kuo-Tung Hsu (*NSRRC*)

Wed-Af-Po3.16-03 [21]: Conceptual Design of a Superbend Magnet for Advance Light Source Upgrade Project

Charles Swenson, Mariusz Juchno (*LBNL*), Adrian Hodgkinson, Jin Young Jung, Erik Wallen, Li Wang and Ross Schlueter (*Lawrence Berkeley National Laboratory*)

Wed-Af-Po3.16-04 [22]: The Cooling Design for the Magnetic Structure of the SHINE Superconducting Undulator

Qisheng Tang (*University of Chinese Academy of Sciences*), Qiaogen Zhou, Jingmin Zhang, Yi Ding, Maofei Qian, Yongmei Wen and Jidong Zhang (*Shanghai Advanced Research Institute, Chinese Academy of Sciences*)

Wed-Af-Po3.16-05 [23]: Development of a Nb3Sn superconducting undulator for the Advanced Photon Source

Ibrahim Kesgin, Matthew T. Kasa, Quentin Hasse, Yury Ivanyushenkov, Yuko Shiroyanagi (*Argonne National Laboratory*), Joel Fuerst (*ANL*), Daniele Turrioni, emanuela barzi, Alexander Zlobin (*Fermilab*) and Efim Gluskin (*Argonne National Laboratory*)

Wed-Af-Po3.16-06 [24]: Numerical Design Optimisation of Short-Period HTS Staggered Array Undulators

Sebastian Hellmann (*Paul Scherrer Institut*), Marco Calvi (*PSI*), Kai Zhang (*PSI - Paul Scherrer Institut*) and Thomas Schmidt (*Paul Scherrer Institute*)

Wed-Af-Po3.16-07 [25]: Quench simulation of a REBCO undulator coil

Yi Ding, Shichang Liu and Jieping Xu (-)

Wed-Af-Po3.16-08 [26]: Quench Protection of Insulated HTS Magnets by inducing a Current Surge within the Magnet

Michael Green (*Lawrence Berkeley Laboratory*)

Wed-Af-Po3.16-10 [27]: Magnetic Field Optimization of an In-Vacuum Undulator at NSLS-II

Marco Musardo, Toshiya Tanabe, David Harder, James Rank, Todd Corwin, Peter Cappadoro and Craig Rhein (*Brookhaven National Laboratory*)

Wed-Af-Po3.16-11 [28]: Field measurement of a cryogenic permanent magnet undulator at NSRRC

Chinkang Yang (*NSRRC*), Chih-Sheng Yang (*National Synchrotron Readation Research Center*), Jui-Che Huang (*National Synchrotron Radiation Research Center*) and Chih wei Chen (*NSRRC*)

Wed-Af-Po3.16-12 [29]: Magnetic and thermomechanical study of a variable gap superconducting undulator

Frederic Trillaud (*Universidad Nacional Autónoma de México*), Stephane Sanfilippo and Ciro Calzolaio (*Paul Scherrer Institut*)

14:00 - 16:00 **Level 2 Posters 1**

Wed-Af-Po3.17 - Mechanical Behavior II

Session Moderators: Victor Bykov, Max Planck Institute for Plasma Physics, Greifswald, Germany and Hyung-Seop Shin, Andong National University

Wed-Af-Po3.17-02 [30]: Cyclic behavior of Wendelstein 7-X magnet system during first two phases of operation

Victor Bykov, Jiawu Zhu, Andre Carls, Bernd Hein, Konrad Rißе, Paul Van Eeten, Hans-Stephan Bosch and Lutz Wegener (*Max-Planck-Institut für Plasmaphysik*)

Wed-Af-Po3.17-03 [31]: Mechanical design and analysis of the BabyIAXO magnet cold mass, cryostat and support system

Helder Filipe Pais Da Silva, Nikolay Bykovskiy, Alexey Dudarev and Herman Ten Kate (*CERN*)

Wed-Af-Po3.17-04 [32]: Mechanical design of the magnet mirror structure for testing Nb3Sn sextupole coil of 45 GHz ECRIS

Li Zhu, Wei Wu (*Institute of Modern Physics,Chinese Academy of Sciences*), Shurong Yu (*LanZhou University of Technology*), Yuquan Chen, Enming Mei, Dongshen Ni, Zhuoyue Du and Liangting Sun (*Institute of Modern Physics,Chinese Academy of Sciences*)

Wed-Af-Po3.17-05 [33]: Mechanical Design and Analysis of Capture Superconducting Magnet for EMuS

Zhilong Hou, Ye Yuan (*The State Key Laboratory of Particle Detection and Electronics, Institute of High Energy Physics (IHEP) Chinese Academy of Sciences (CAS), University of Chinese Academy of Sciences*), Jingyu Tang (*Institute of High Energy Physics (IHEP), Chinese Academy of Sciences (CAS), University of Chinese Academy of Sciences*), Guang Zhao (*The State Key Laboratory of Particle Detection and Electronics, Institute of High Energy Physics*), Zian Zhu, Nikolaos Vassilopoulos (*The State Key Laboratory of Particle Detection and Electronics, Institute of High Energy Physics (IHEP) Chinese Academy of Sciences (CAS), University of Chinese Academy of Sciences*), Hantao Jing (*Institute of High Energy Physics (IHEP), Chinese Academy of Sciences (CAS), University of Chinese Academy of Sciences*), Wei Zhao, Zongtai Xie (*The State Key Laboratory of Particle Detection and Electronics, Institute of High Energy Physics (IHEP), Chinese Academy of Sciences (CAS), University of Chinese Academy of Sciences*), Yu Bao (*Institute of High Energy Physics (IHEP) Chinese Academy of Sciences (CAS)*), Guoqing Zhang, Feipeng Ning (*The State Key Laboratory of Particle Detection and Electronics, Institute of High Energy Physics (IHEP), Chinese Academy of Sciences (CAS), University of Chinese Academy of Sciences*), Yuan Chen (*Institute of High Energy Physics (IHEP) Chinese Academy of Sciences (CAS)*), Ling Zhao, Meifen Wang (*The State Key Laboratory of Particle Detection and Electronics, Institute of High Energy Physics (IHEP), Chinese Academy of Sciences (CAS), University of Chinese Academy of Sciences*) and Zhongxiu Liu (*The State Key Laboratory of Particle Detection and Electronics, Institute of High Energy Physics (IHEP), Chinese Academy of Sciences (CAS)*)

Wed-Af-Po3.17-06 [34]: The Mechanical Analysis of the Rutherford Cable Subjected to Axial Tension

Libin Jiang and Yuanwen Gao (*Lanzhou University*)

Wed-Af-Po3.17-07 [35]: High definition 3D finite element analysis of low temperature Rutherford cable

Pierre Manil (*Université Paris-Saclay (FR)*), Francois Nunio (*CEA*) and Gilles Lenoir (*CEA Paris-Saclay*)

Wed-Af-Po3.17-08 [36]: Mechanical behaviour of the HL-LHC beam screen during a quench test campaign of the MQXF short model magnet

Marco Morrone, Cedric Garion, Paolo Chiggiato, Vincent Baglin, Ezio Todesco, Paolo Ferracin, Juan Carlos Perez, Nicolas Bourcey, Marta Bajko, Franco Julio Mangiarotti (*CERN*), Oscar Sacristan De Frutos (-), Michael Guinchard, Emmanuele Ravaioli and Lucio Fiscarelli (*CERN*)

Wed-Af-Po3.17-09 [37]: Analysis of the mechanical behavior of the KSTAR CS magnet during long pulse plasma discharges

Hee-Jae Ahn, Hyun-Ki Park, Jinsub Kim, YoungOk Kim, Hirofumi Yonekawa (*NFRI*), yong chu (-), Kwang Pyo Kim, Kaprai Park, Si-Woo Yoon (*NFRI*) and Yong Hwan Kim (*Chungnam National University*)

14:00 - 16:00 Level 2 Posters 1

Wed-Af-Po3.18 - REBCO Wires & Cables III

Session Moderators: Chris Kovacs, The Ohio State University and Ibrahim Kesgin, ANL

Wed-Af-Po3.18-01 [38]: Development of High Je 2G HTS Wires for High-Field Magnet Applications

Yue Zhao (*shanghai jiao tong university*), Jiamin zhu, Jiang Guangyu, Cheng Chunsheng Sheng Jie and Yutaka Yamada (-)

Wed-Af-Po3.18-02 [39]: Effect of Core Materials on the Electrical Properties of Superconducting Conductor on Round Core Cable

Haosheng Ye, Wenrong Li, Zhuyong Li (*Shanghai Jiao Tong University*), Yue Zhao (*China Shanghai Jiao Tong University*), Xiaofen Li and Jie Sheng (*Shanghai Jiao Tong University*)

Wed-Af-Po3.18-04 [40]: Electromagnetic properties of REBCO coated conductor with multi-superconducting layers

Sang-Soo Oh, Hongsoo Ha, Ho-Sup Kim, Gwan Tae Kim and Hyunwoo No (*Korea Electrotechnology Research Institute*)

Wed-Af-Po3.18-05 [41]: Current distribution of an HTS twisted stacked-tape cable conductor investigated by self-field measurements

Tetsuhiro Obana, Yoshiro Terazaki (*NIFS*), Makoto Takayasu (*MIT*), Shinji Hamaguchi, Hirotaka Chikaraishi and Nagato Yanagi (*NIFS*)

Wed-Af-Po3.18-06 [42]: Improvement of Jc properties for Hf and La doped Gd123 films fabricated by fluorine-free MOD method

Joichiro Fukui, Osuke Miura (*Electrical and Electronic Engineering, Tokyo Metropolitan University, Japan*) and Ryusuke Kita (*Electrical and Electronic Engineering, Shizuoka University, Japan*)

Wed-Af-Po3.18-07 [43]: The study of pinning center formation in Sm1Ba2Cu3O7-d coated conductor by reactive-co evaporation method

Ho-Sup Kim, Sang-Soo Oh, Hong-Soo Ha, Gwan-Tae Kim, Hyun-Woo No (*Korea Electrotechnology Research Institute*) and Kook-Chae Chung (*Korea Institute of Materials Science*)

Wed-Af-Po3.18-08 [44]: Experimental research on critical current behavior of various HTS tapes

Li Ren and Ying Xu (*Huazhong University of Science and Technology*)

Wed-Af-Po3.18-09 [45]: Quench analysis of 2G YBCO tape

Shili Jiang (*High Magnetic Field Laboratory, Chinese Academy of Sciences*), Donghui Jiang, Xinxing Qian (-), Guihong Zou (*high magnetic field laboratory of Chinese Academy of Sciences*), PengCheng Huang (*Chinese Academy of Sciences*), Wenge Chen (*High Magnetic Field Laboratory, Chinese Academy of Sciences*), Zhiyou Chen (-) and Guangli Kuang (*High Magnetic Field Laboratory, CAS*)

Wed-Af-Po3.18-10 [46]: Current Sharing Temperature and Quench Characteristics of REBCO Quasi-isotropic Superconducting Strands in Different Sheaths

Wei Pi, Qingmei Shi, Yinshun Wang, Jin Dong and Yingmin Cui (*North China Electric Power University*)

14:00 - 16:00 **Level 2 Posters 1**

Wed-Af-Po3.19 - REBCO Wires & Cables IV

Session Moderators: Drew Hazelton, SuperPower Inc. and Anbo Wu, GE Global Research

Wed-Af-Po3.19-01 [47]: The impact of stacked angle on the uniformity of trapped field in HTS taped stacks

Xiaodong Li (*Beihang University*), Wenjiang Yang (*China*), Chaoxin Liu, Peng Li and Mingliang Bai (*Beihang University*)

Wed-Af-Po3.19-02 [48]: Performance Test of a Geometrically Symmetrical Strand Fabricated by 2G Wires at 4.2 K

Changtao Kan (-) and Yinshun Wang (*North china electric power university*)

Wed-Af-Po3.19-03 [49]: The Contact Mechanical Behaviors in Triad CORC Wires

Keyang Wang and Yuanwen Gao (*LanZhou University*)

Wed-Af-Po3.19-05 [50]: Numerical study on the coupling current and magnetization loss of striated CORC cables using 3D T-A formulation

Yufan Yan (*Tsinghua University*), Timing Qu (*State Key Laboratory of Tribology, Department of Mechanical Engineering, Tsinghua University*), Zhiwei Zhang (*Shanghai Jiao Tong University*), Qihong Wu (*State Key Laboratory of Tribology, Department of Mechanical Engineering, Tsinghua University*), Zhengjun Shi (*Electric Power Research Institute of Guangdong Power Grid Corporation*) and Meng Song (*Electrical Power Research Institute of Guangdong Power Grid Corporation*)

Wed-Af-Po3.19-06 [51]: Development of Cost-effective Secondary Generation High-temperature Superconducting REBaCuO Tapes for Power Applications

Cai Chuanbing (*Shanghai Key Laboratory of High Temperature Superconductors, Shanghai University ; Shanghai Creative Superconductor Technologies Co. Ltd.*)

Wed-Af-Po3.19-07 [52]: Study on Mechanical Properties of Quasi-identical Superconductor Strands Stacked by 2mm Wide REBCO Tapes

Wei Pi, Shuwen Ma (*North China Electric Power University*), Tengyan Wang (-), Ziqiu Liu, Yiran Meng, Yinshun Wang and Changtao Kan (*North China Electric Power University*)

Wed-Af-Po3.19-08 [53]: Effect of Combination Twisting with Bending Characteristics on Critical Current of Quasi-Isotropic HTS Strand

Yang Nie and Yinshun Wang (-)

14:00 - 16:00 Level 2 Posters 2

Wed-Af-Po3.20 - CCT Magnets and Field Quality of Accelerator Magnets

Session Moderators: Federica Pierro, Tufts University and Damien Simon, Université Paris-Saclay

Wed-Af-Po3.20-01 [54]: CCT Type Twin aperture Superconducting Quadrupole Design for CEPC Interaction Region

Quanling Peng and Qingjin Xu (*Institute of High Energy Physics, Chinese Academy of Sciences*)

Wed-Af-Po3.20-02 [55]: No Insulation CCT Coils for Superconducting Accelerator Magnets

Lucas Brouwer (*Lawrence Berkeley National Laboratory*), Diego Arbelaez (*Lawrence Berkeley National Lab*), Shlomo Caspi (-), Kate Edwards (*Lawrence Berkeley National Laboratory*) and Soren Prestemon (*LBNL*)

Wed-Af-Po3.20-03 [56]: Design and Test of a Canted-Cosine-Theta Superconducting Quadrupole Prototype For CiADS Project

Yu Liang (*IMP,CAS*), Wei Wu (*Institute of Modern Physics, Chinese Academy of Sciences*), Luncai Zhou (*Institute of Modern Physics*), Dongsheng Ni (*Institute of Modern Physics Chinese Academy of Sciences*), Enming Mei (*IMPCAS*) and Wenjie Yang (*Institute of modern physics, Chinese academy of sciences*)

Wed-Af-Po3.20-04 [57]: The Effects of Manufacturing Errors on Field Quality of a Canted-Cosine-Theta Twin Aperture Beam Orbit Corrector

Shaoqing Wei (*Institute of High Energy Physics, Chinese Academy of Sciences (IHEP,CAS)*), Zhan Zhang (*Chinese Academy of Sciences (CAS)*), Quanling Peng (*Institute of High Energy Physics, Chinese Academy of Sciences,*), Lingling Gong (-), Da Cheng (*IHEP,CAS*), Chengtao Wang (*Institute of High Energy Physics, University of Chinese Academy of Sciences*), Yingzhe Wang, Ershuai Kong (*IHEP*), Zhen Zhang (*IHEP, CAS*), Yuquan Chen, yu liang (*IMP,CAS*), Meng Li (*Western superconducting technologies Co.,Ltd (WST)*), Chao Li (-) and Qingjin Xu (*IHEP*)

Wed-Af-Po3.20-05 [58]: Design considerations of an alternating-gradient canted-cosine-theta superconducting magnet applied to proton therapy

Heming Chen, Bin Qin, Jun Yang and Xu Liu (*Huazhong University of Science and Technology*)

Wed-Af-Po3.20-06 [59]: A Transducer for Measuring the Field Quality in Superconducting Solenoids

Carlo Petrone, Bernardo Bordini, Stephan Russenschuck and Marco Buzio (*CERN*)

Wed-Af-Po3.20-07 [60]: Vertical Magnetic Field Measurements of Full-Length Prototype MQXFAP Quadrupoles at Cryogenic Temperatures for Hi-Lumi LHC

Honghai Song (*Brookhaven National Laboratory*), Giorgio Ambrosio (*Fermilab*), Kathleen Amm, Michael Anerella (*Brookhaven National Laboratory*), Daniel Cheng (-), Guram Chlachidze (*Fermilab*), Joseph DiMarco (*Fermi National Accelerator Laboratory*), Sandor Feher (*Fermi National Accelerator Lab. (US)*), Paolo Ferracin, Susana Izquierdo Bermudez (*CERN*), Animesh Jain (*Argonne National Laboratory*), Piyush Joshi, Joseph F Muratore (*Brookhaven National Laboratory*), Heng Pan, GianLuca Sabbi (*LBNL*), Jesse Schmalzle (*BNL*), Ezio Todesco (*CERN*), Peter Wanderer (*Brookhaven Lab*), Xiaorong Wang (*Lawrence Berkeley National Laboratory*) and Miao Yu (*Fermilab*)

Wed-Af-Po3.20-09 [61]: A flexible search coil set-up for magnetic measurements of accelerator dipole magnets

Carsten Muehle, Franz Klos, Thomas Knapp and Mischa Weipert (*GSI Helmholtzzentrum fuer Schwerionenforschung*)

Wed-Af-Po3.20-10 [62]: Overview of the Sirius Pulsed Injections Magnets

James Citadini (*Brazilian Synchrotron Light Laboratory*) and Fabio Arroyo (*Laboratório Nacional de Luz Síncrotron*)

Wed-Af-Po3.20-11 [63]: Sirius Magnetic Measurement System and Regular Magnets production results

James Citadini (*Brazilian Synchrotron Light Laboratory*), Luana Vilela, Reinaldo Basilio, Vitor Soares, Lidia Toledo and Lucas Balthazar (*Laboratório Nacional de Luz Síncrotron*)

Wed-Af-Po3.20-12 [64]: Sirius 3.2T superbend final version and production results

James Citadini (*Brazilian Synchrotron Light Laboratory*), Luana Vilela, Reinaldo Basilio, Lucas Balthazar, Lidia Toledo and Vitor Soares (*Laboratório Nacional de Luz Síncrotron*)

Wed-Af-Po3.20-13 [65]: A rotating coil system based on CMM for high gradient small aperture quadrupoles in HEPS-TF

Mei Yang (*Institute of High Energy Physics (IHEP), CAS*), Fusan Chen, Baogui Yin, Ran Liang, Shuai Li and Yingshun Zhu (*Institute of High Energy Physics, CAS*)

Wed-Af-Po3.20-14 [66]: Magnet end shaping of the Future Circular Collider Main Quadrupole: optimization and validation

Clement Lorin (*Université Paris-Saclay (FR)*), Clément Genot (*CEA-Saclay - ENSEM*) and Davide Tommasini (*CERN*)

Wed-Af-Po3.20-15 [67]: Topology Optimization of the Pole Shape in Passive Magnetic Channel using MMA Method

Lige Zhang (*Huazhong University of Science and Technology*), Kuanjun Fan, Tan Ping (-), Qushan Chen, Xu Liu, Wenjie Han (*Huazhong University of Science and Technology*) and Yinong Rao (*TRIUMF*)

14:00 - 16:00 **Level 2 Posters 2**

Wed-Af-Po3.21 - Nb_3Sn Wires

Session Moderators: Ildar Abdyukhanov, VNIINM (Bochvar Institute) and Matthias Mentink, CERN

Wed-Af-Po3.21-02 [68]: Refining the grain size and improving critical current in tube type Nb3Sn conductor in Hyper Tech

Xuan Peng (*Hyper Tech Research Inc.*), Xingchen Xu (*Fermi National Accelerator Lab*), Jacob Rochester, Mike Sumption (*The Ohio State University*), Matt Rindfleisch (*Hyper Tech*) and Michael Tomsic (*Hyper Tech Research*)

Wed-Af-Po3.21-03 [69]: Challenges and Perspectives of the Phase Formation of Internally Oxidized PIT-Type Conductors

Carl Buehler (*Bruker EST*), Bernd Sailer (*Bruker EAS GmbH*), Matheus Wanior (*Bruker EAS*), Vital Abächerli (*Bruker EAS, Hanau, Germany*), Manfred Thoener (*Bruker EAS*), Klaus Schlenga (*Bruker EST*), Sandra Kauffmann-Weiss (-), Jens Haenisch (*Karlsruhe Institute for Technology*), Martin Heilmaier (-) and Bernhard Holzapfel (*KIT Karlsruhe*)

Wed-Af-Po3.21-04 [70]: Mechanical strength evaluation of the internal matrix reinforced Nb3Sn multifilamentary wire using Cu-Sn-In ternary alloy matrix

Yoshimitsu Hishinuma (*National Institute for Fusion Science*), Hidetoshi Oguro (*Tokai Uiversity*), Hiroyasu Taniguchi (*Osaka Alloying Works Co.,Ltd*), Satoshi Awaji (*Institute Materials Research, Tohoku University*) and Akihiro Kikuchi (*National Institute for Materials Science*)

Wed-Af-Po3.21-05 [71]: Fabrication of new internal tin Nb3Sn wire using Sn-Zn alloy as Sn core

Taro Morita (-), Nobuya Banno (*National Institute for Materials Science*) and Tsuyoshi Yagai (*Sophia University*)

Wed-Af-Po3.21-06 [72]: Fundamental study on the effect of Zn addition into Cu matrix in internal tin Nb3Sn conductors

Nobuya Banno (*National Institute for Materials Science*), Taro Morita and Tsuyoshi Yagai (*Sophia University*)

Wed-Af-Po3.21-07 [73]: Superconducting Properties of Internal Tin Nb3Sn Strands, doped with Ti, Zr and Ti, Ti and Ta.

Victor Pantsyrny (*Bochvqr Institute*) and Ildar Abdyukhanov (*VNIINM (Bochvar Institute)*)

Wed-Af-Po3.21-08 [74]: Evaluation of various Nb-rod-method Cu-Nb/Nb3Sn wires designed for practical React-and-Wind coils

Masahiro Sugimoto, Hirokazu Tsubouchi (*Furukawa Electric Co., Ltd.*), Hideki Ii (*hideki.ii@furukawaelectric.com*), Kota Katayama, Daisuke Asami (*Furukawa Electric Co., Ltd.*) and Satoshi Awaji (*Tohoku University*)

Wed-Af-Po3.21-09 [75]: Performance Improvements to Nb3Sn Superconducting Wires by bronze route

Ke Zhang, Bo Wu, Jing Hou, Ruilong Wang, JIngyu Liu, JIanwei Liu, Qiang Guo, Jianfeng Li, Pingxiang Zhang, Xianghong Liu and Yong Feng (*Western Superconducting Technologies Co. Ltd.*)

Wed-Af-Po3.21-10 [76]: Effect of Nb3Sn coarse grains on critical current densities of Internal Tin Nb3Sn strand

Bo Wu (*1. National Engineering Laboratory for Superconducting Material, Western Superconducting Technologies (WST) Co., Ltd. 2. State Key Laboratory of Solidification Processing, Northwestern Polytechnical University*), Yigong Shi, Chaofei Ju, Ke Zhang, Jianwei Liu, Qiang Guo, Xianghong Liu (*National Engineering Laboratory for Superconducting Material, Western Superconducting Technologies (WST) Co., Ltd.*), Yong Feng (*National Engineering Labortoary for Superconducting Material, Western Superconducting Technologies (WST) Co., Ltd.*), Guo Yan (*National Engineering Laboratory for Superconducting Material, Western Superconducting Technologies (WST) Co., Ltd.*) and Jinshan Li (*State Key Laboratory of Solidification Processing, Northwestern Polytechnical University*)

Wed-Af-Po3.21-11 [77]: Impact of transverse compression on the sub-element RRP Nb3Sn strand

Yongliang Zhang, Chao Dai, Yu Wu, Yi Shi (*Institute of Plasma Physics, Chinese Academy of Science*) and Kaihong Wu (*Institute of Plasma Physics,Chinese Academy of Science*)

Wed-Af-Po3.21-12 [78]: Heat Treatment Studies of Nb3Sn RRP wires for Superconducting Planar Undulators

Emanuela Barzi (*Emanuela*), ibrahim kesgin (*argonne national laboratory*), Daniele Turrioni and Alexander Zlobin (*Fermilab*)

14:00 - 16:00 Level 2 Posters 2

Wed-Af-Po3.22 - Associated Technology I

Session Moderators: Maria Baldini, FNAL and Sasha Ishmael, Lupine Materials and Technology

Wed-Af-Po3.22-01 [79]: Study of magneto-resistance for low magnetic field measurement

Eiji Kako, Taro Konomi, Mika Masuzawa (*KEK*), Takafumi Okada (*SOKENDAI*), Hiroshi Sakai, Kiyosumi Tsuchiya, Ryuichi Ueki, Kensei Umemori and Takashi Kawamoto (*KEK*)

Wed-Af-Po3.22-02 [80]: Effect of Specimen Shape on Eddy Current Distribution in Large Single Sheet Tester

Yu Dou (*State Key Laboratory of Reliability and Intelligence of Electrical Equipment, Hebei University of Technology*), Yongjian Li (*Hebei University of Technology*), Jianguo Zhu (*School of Electrical and Information Engineering, University of Sydney*), Shuaichao Yue (*State Key Lab of Reliability and Intelligence of Electrical Equipment, Hebei University of Technology*) and Changgeng Zhang (*State Key Laboratory of Reliability and Intelligence of Electrical Equipment, School of Electrical Engineering, Hebei University of Technology*)

Wed-Af-Po3.22-03 [81]: Vibration Control of Vertical Motion for a Superconducting EDS Train

Gang Li, Wenjiao Yang, Zhaoying Yan, Pengbo Zhou, Chao Wang, Yiyu Wang, Yao Cai and Guangtong Ma (*Southwest Jiaotong University*)

Wed-Af-Po3.22-04 [82]: A pulsed current based critical current measurement system for long REBCO coated conductors

Yiwen Chen, Xiao-Fen Li and Zhijian Jin (*Shanghai Jiao Tong University*)

Wed-Af-Po3.22-05 [83]: Self- and Mutual-inductances Analysis of a Bitter-like HTS Magnet Stacked by REBCO Annular Plates

Yukai Qiao (*North China Eletric Power University*), Yinshun Wang, Wei Pi, Xi Yuan and Yueyin Wang (*North China Electric Power University*)

Wed-Af-Po3.22-06 [84]: Numerical study of the performance of HTS switch under perpendicular magnetic field

Jun Ma (*Cambridge Universitry*)

Wed-Af-Po3.22-07 [85]: Development of fine shimming technique with magnetorheological fluid

Hiroshi Yamaguchi, Ken-ichi Sasaki (*KEK*), Toya Tanaka (*The University of Tokyo*), Mitsushi Abe (*KEK*), Hiromi Iinuma, Masahiro Saito, Moe Sugita (*Ibaraki University*), Tsutomu Mibe, Koichiro Shimomura and Toru Ogitsu (*KEK*)

14:00 - 16:00 **Level 3 Posters**

Wed-Af-Po3.23 - Resistive and Pulsed High Field Magnet II

Session Moderators: Liang Li, WHMFC, Huazhong University of Science and Technology and Frans Wijnen, Radboud University Nijmegen

Wed-Af-Po3.23-03 [88]: Design, Construction and Operation of New Duplex Magnet at Pulsed Field Facility-NHMFL

Doan Nguyen (*LANL*), James Michel (*Los Alamos National Laboratory*), Jason Lucero (-) and Hinrichs Mark (*Los Alamos National Laboratory*)

Wed-Af-Po3.23-04 [89]: Design and Test of the 64 T with 10ms Flat-Top Magnetic Field System Driven by Capacitor at the Wuhan National High Magnetic Field Center

Shuang Wang (*Huazhong University of Science and Technology*), Tao Peng (*Wuhan National High Magnetic Field Center*), Liang Li (*Wuhan National High Magnetic Field Center, Huazhong University of Science and Technology*), Shan Jiang, Fan Jiang, Le Deng, Quqin Sun (-), Xiaotao Han and Hongfa Ding (*Wuhan National High Magnetic Field Center, Huazhong University of Science and Technology*)

Wed-Af-Po3.23-05 [90]: The Axial Displacement and Its' Effects on the Mechanical Behavior of Pulsed High-field Magnets

Siyuan Chen (*Wuhan National High Field Center, Huazhong University of Scienc*), Tao Peng (*Wuhan National High Magnetic Field Center*), Yiliang Lv and Liang Li (*Huazhong University of Science and Technology*)

Wed-Af-Po3.23-06 [91]: Integrating Modeling Toolchain into High Field Magnet Monitoring and Control system.

Christophe Trophime (*Christophe*), Cédric Grandclément (*LNCMI-EMFL-CNRS, UGA*), Francois Debray (*CNRS*), Olivier Jay (*LNCMI-CNRS*), Christophe PrudHomme (*IRMA/Univ. Strasbourg*) and Romain Hild (*IRMA/Uni Strasbourg*)

Wed-Af-Po3.23-07 [92]: Modular Toroidal Copper Coil for the Investigation of Inductive Pulsed Power Generators in the MJ-Range

Oliver Liebfried, Volker Brommer (*French-German Research Institute of Saint-Louis*), Paul Frings (*Laboratoire National des Champs Magnétiques Intenses*), Matthias Schacherer and Harald Scharf (*French-German Research Institute of Saint-Louis*)

Wed-Af-Po3.23-08 [93]: Fatigue Life Characterization of Copper-Based Conductors with Surface Imperfections for Pulsed Magnets

Vince Toplosky, Robert Goddard and Ke Han (*Florida State University*)

Wed-Af-Po3.23-09 [94]: Non-destructive testing of high strength conductors for high field pulsed magnets

Jun Lu, Todd Adkins, Iain Dixon (*MS&T, NHMFL*), Doan Nguyen (*PFF, NHMFL*) and Ke Han (*MS&T, NHMFL*)

14:00 - 16:00 Level 3 Posters

Wed-Af-Po3.24 - Small Test Model Coil

Session Moderators: Rainer Meinke, AML Superconductivity and Magnetics and Eric Sun, Jefferson Lab, USA

Wed-Af-Po3.24-01 [95]: A cable-scale experiment to predict training characteristics of superconducting magnets and explore new magnet materials

Christopher Kovacs (*The Ohio State University*), Emanuela Barzi (*Fermilab*), Maxim Marchevsky (*Lawrence Berkeley National Laboratory*), Daniele Turrioni and Alexander Zlobin (*Fermilab*)

Wed-Af-Po3.24-02 [96]: Design, Construction and Test of a Double-Pancake Coil wound with Kilometer Long REBCO tape

Jaemin Kim (*Seoul National University*), Yungil Kim (*SuNAM Co.,Ltd*), Jeseok Bang, Uijong Bong, Jung Tae Lee, Soobin An (*Seoul National University*), Kwangmin Kim, Kwang Lok Kim (*National High Magnetic Field Laboratory*), Hunju Lee (*SuNAM Co., Ltd.*) and Seungyong Hahn (*Seoul National University*)

Wed-Af-Po3.24-03 [97]: Design and Development of a High-Frequency Magnet Prototype for Magnetic Hyperthermia Applications

Hang Xu, Shinichi Nomura (*Meiji University*) and Takanori Isobe (*University of Tsukuba*)

Wed-Af-Po3.24-04 [98]: Design and research of a REBCO plate-stacked coil

Guihong Zou (*high magnetic field laboratory of Chinese Academy of Sciences*), Donghui Jiang (-), Wenge Chen (*High Magnetic Field Laboratory, Chinese Academy of Sciences*), Zhiyou Chen (-), Shili Jiang (*High Magnetic Field Laboratory, Chinese Academy of Sciences*), Xinxing Qian (-) and Guangli Kuang (*High Magnetic Field Laboratory, CAS*)

Wed-Af-Po3.24-05 [99]: Manufacture and performance test of High Temperature Superconducting Coils for 3.5T Magnetic Separation

Huajun Liu (*Chinese Academy of Sciences*), Liang Guo (-), Fang Liu, Hongjun Ma (*the Institute of Plasma Physics, Chinese Academy of Sciences*), Qiudong Guo (*Chongqing Academy of science and technology*) and Yi Shi (*ASIPP*)

Wed-Af-Po3.24-06 [100]: Design and Test a ReBCO Conduction-Cooled Solenoid Magnet without Insulation

Xuyang Liu, Feipeng Ning (*IHEP*) and Zian Zhu (*IHEP Beijing*)

Wed-Af-Po3.24-07 [101]: Electrical insulation testing for CFETR CS model coil

Ma Yuanyuan (*Institute of Plasma Physics, Chinese Academy of Sciences*), Huan Jin, Houxiang Han, Yu Wu and Guangliang Zhu (-)

Wed-Af-Po3.24-08 [102]: Reliability evaluation procedure of REBCO coated conductor tapes based on mechanical and electro-mechanical properties obtained by uniaxial tension and cyclic tests at 77 K

Hyung-Seop Shin, Michael de Leon and Mark Angelo Diaz (*Andong National University*)

Wed-Af-Po3.24-09 [103]: Composite Mechanical Properties of Coils Made With Nickel-Alloy Laminated Bi-2223 Conductors

William Marshall (*National High Magnetic Field Laboratory*), Robert Walsh (*Florida State University*), Andrey Gavrilin (*Florida State University, Florida, USA*), Dylan Kolb-Bond and Kyle Radcliff (*National High Magnetic Field Laboratory*)

Wed-Af-Po3.24-10 [104]: An Experimental Study on "Defect-irrelevant" Behavior of No-insulation REBCO Pancake Coil in Conduction-Cooling Operation

Uijong Bong, Jaemin Kim, Jeseok Bang (*Seoul National University*), Kyle Radcliff (*National High Field Magnetic Lavatory*), Kwang Lok Kim, Kwangmin Kim (*National High Magnetic Field Laboratory*), Kabindra Bhattarai (*Florida State University*) and Seungyong Hahn (*Seoul National University*)

14:00 - 16:00 Level 3 Posters

Wed-Af-Po3.25 - MgB_2 and Iron-Based

Session Moderators: Kookchae Chung, Korea Institute of Materials Science and Franco Julio Mangiarotti, CERN

Wed-Af-Po3.25-01 [105]: Effects of carbon doping on trapped magnetic field of MgB$_{2}$ bulk prepared by in-situ hot isostatic pressing method

Tomoyuki Naito and Hiroyuki Fujishiro (*Iwate University*)

Wed-Af-Po3.25-02 [106]: Development of MgB2 superconductor wire and coils for AC and DC applications

Michael Tomsic (*Hyper Tech Research*), Matt Rindfleisch (*Hyper Tech*), David Doll (*Hypertech*), Xuan Peng (*Hyper Tech Research Inc.*), Mike Sumption and Edward Collings (*The Ohio State University*)

Wed-Af-Po3.25-03 [107]: Numerical simulation of drawing process of multi-filamentary MgB2 wire

Young-Seok Oh, Won Lee Ho, Hee Rak Kim, In Yong Moon, Kook-Chae Chung (*Korea Institute of Materials Science*), Hwang Duck-Young (*Kiswire Advanced Technology, Ltd*) and Kang Seong-Hoon (*Korea Institute of Materials Science*)

Wed-Af-Po3.25-04 [108]: Performance of MgB2 Superconductor developed for high-efficiency Klystron Applications

Hideki Tanaka, Takaaki Suzuki, Motomune Kodama, Tomoyuki Koga (*Hitachi, Ltd.*), Hiroyuki Watanabe (*Hitachi Co. Ltd.*), Akira Yamamoto (*KEK/CERN*) and Shinichiro Michizono (*KEK*)

Wed-Af-Po3.25-05 [109]: Fabrication of (6+1)-structure superconducting cable based on 30-core MgB2 superconducting wire

Wang Dayou (*State Key Laboratory of Solidification Processing, Northwestern Polytechnical University and Western Superconducting Technol WST Co Ltd, NELSM*), Xi Dan (*Western Superconducting Technol WST Co Ltd, NELSM*), Qingyang Wang, Xiaomei Xiong, Fang Yang (*Northwest Institute for Nonferrous Metal Research*), Guo Yan, Yong Feng (*Western Superconducting Technol WST Co Ltd, NELSM*), Pingxiang Zhang (*Northwest Institute for Nonferrous Metal Research*) and Jinshan Li (*State Key Laboratory of Solidification Processing, Northwestern Polytechnical University*)

Wed-Af-Po3.25-06 [110]: Experimental and numerical study on crack evolution of Nb barriers causing Ic deterioration in multi-filament MgB2 strands during cabling process for large-scale energy storage coils.

Tsuyoshi Yagai, Moeto Hira (*Sophia University*), Taiki Onji (*Railway Technical Research Institute*), Yusuke Kuwabara, Mana Jimbo, Masahiro Kamibayashi, Tomoaki Takao (*Sophia University*), Yasuhiro Makida (*High Energy Accelerator Research Organization (JP)*), Takakazu Shintomi (*KEK*), Toshihiro Komagome, Kenichi Tsukada, Masayuki Hoshino (*Mayekawa MFG. Co., Ltd.*), Naoki Hirano (*Chubu Electric Power Co., Inc.*), Masaru Tomita (*Railway Technical Research Institute*), Daisuke Miyagi (*Tohoku University*), Hidefumi Matsuda (*kyoto university*), Makoto Tsuda (*Tohoku University*) and Takataro Hamajima (*Mayekawa MFG. Co., Ltd.*)

Wed-Af-Po3.25-07 [111]: The rapid heating and quenching method for MgB2 superconducting wires with kilometer-grade length

Wenjie Zhang, Xiaofeng Zou, Qi Wang, Yu Zhou (*Southwest Jiaotong University*), Hong Zhang (-), Yong Zhao and Yong Zhang (*Southwest Jiaotong University*)

Wed-Af-Po3.25-09 [112]: Electromechanical Properties Evaluation of Various Multifilamentary MgB2 Wires

Mark Angelo Diaz, Zhierwinjay Bautista, Hyung-Seop Shin (*Andong National University*), Hidetoshi Oguro (*Tokai Uiversity*) and Satoshi Awaji (*Institute for Materials Research, Tohoku University*)

Wed-Af-Po3.25-10 [113]: Enhancement of high field Jc of MgB2 superconductors by carbon doping through coating process

Jang Sehoon, Kim HyoSung and Hwang DuckYoung (*KAT*)

Wed-Af-Po3.25-11 [114]: Influence of chemical treatment of the raw precursors for the MgB2 superconducting applications

Kookchae Chung, Young-Seok Oh, Seong-Hoon Kang (*Korea Institute of Materials Science*), Se-Hun Jang (*Kiswire Advanced Technology Ltd*) and Duck-Young Hwang (*Kiswire Advance Technology, Ltd*)

Wed-Af-Po3.25-12 [115]: Electro-mechanical properties of multifilamentary Ba0.6K0.4Fe2As2 tapes

Liu Fang, Tian Chao, Huajun Liu (*Institute of Plasma Physics, Chinese Academy of Sciences*), He Huang (*Key Laboratory of Applied Superconductivity, Institute of Electrical Engineering, Chinese Academy of Sciences*), Li Fangyi, Qin Jinggang, Zhang Xintao, Ma Honjun, Shi Yi, Ma Yanwei and Jin Huan (-)

Wed-Af-Po3.25-13 [116]: Mechanical Property of Composite MgB2 Superconducting Wires

Kozo Osamura (*Research Institute for Applied Science*), Hidetoshi Oguro (*Tokai University*), Shutaro Machiya (*Daido University*), Yoshimitsu Hishinuma (*NIFS*) and Hiroyasu Taniguchi (*Osaka Goukin Co. Ltd*)

16:00 - 18:00 Regency AB

Wed-Af-Or13 - High Field HTS/Hybrid Magnets for Accelerators

Session Moderators: Tiina Salmi, Tampere University of Technology and Tengming Shen, LBNL

16:00 **Wed-Af-Or13-01 [Invited]: Ac loss and shielding-current-induced field in a coated-conductor test magnet for accelerator applications under repeated excitations**
Naoyuki Amemiya, Yusuke Sogabe (*Kyoto University*), Shigeki Takayama, Yusuke Ishii (*Toshiba*), Toru Ogitsu (*KEK*), Yoshiyuki Iwata, Koji Noda (*National Institute of Radiological Sciences*) and Masahiro Yoshimoto (*Japan Atomic Energy Agency / J-PARC center*)

16:30 **Wed-Af-Or13-02 [Invited]: New Approach and Test Facility for High Field Accelerator Magnets R&D**
Kathleen Amm, Michael Anerella, Piyush Joshi (*Brookhaven National Laboratory*), Peter Wanderer (*Brookhaven Lab*), William Sampson (*Brookhaven National Laboratory*) and Ramesh Gupta (*BNL*)

17:00 **Wed-Af-Or13-03: Performance, diagnostic, and quench measurements of a dipole composed of two racetrack coils wound with high temperature superconducting Bi-2212 Rutherford cable**
Daniel S. Davis (*Applied Superconductivity Center, National High Magnetic Field Laboratory, Florida State University*), Timothy J. Bogdanof (*LBL*), Ernesto Bosque (*Applied Superconductivity Center, National High Magnetic Field Laboratory, Florida State University*), Daniel W. Cheng (*LBNL*), Charles L. English (*Applied Superconductivity Center, National High Magnetic Field Laboratory*), Laura Garcia Fajardo, Hugh Higley (*Lawrence Berkeley National Laboratory*), Jianyi Jiang (*Applied*

Superconductivity Center, National High Magnetic Field Laboratory, Florida State University), David Larbalestier (*National High Magnetic Field Laboratory*), Maxim Marchevsky (*Lawrence Berkeley National Laboratory*), Soren Prestemon (*LBNL*), Emmanuele Ravaioli (*CERN*), Matthew A. Reynolds (*LBNL*), Tengming Shen (*Lawrence Berkeley National Lab*), James H. Swanson (*LBNL*), Ulf P. Trociewitz (*ASC-NHMFL*), Marcos Turqueti and Xiaorong Wang (*Lawrence Berkeley National Laboratory*)

17:15 **Wed-Af-Or13-04: Development of REBCO dipole magnets using CORC® wires**
Xiaorong Wang (*Lawrence Berkeley National Laboratory*), Diego Arbelaez (*Lawrence Berkeley National Lab*), Bogdanof Timothy, Lucas Brouwer (*Lawrence Berkeley National Laboratory*), Shlomo Caspi (-), Daniel Dietderich (*Lawrence Berkeley National Laboratory*), Stephen Gourlay (*LBNL*), Laura Garcia Fajardo, Hugh Higley, Thomas Lipton, Maxim Marchevsky (*Lawrence Berkeley National Laboratory*), Soren Prestemon (*LBNL*), Tengming Shen (*Lawrence Berkeley National Lab*), Jordan Taylor, Marcos Turqueti (*Lawrence Berkeley National Laboratory*), Danko van der Laan and Jeremy Weiss (*Advanced Conductor Technologies*)

17:30 **Wed-Af-Or13-05: Integration for testing HTS Feather M2 in the FRESCA2 magnet**
Douglas Martins Araujo, Jeroen Van Nugteren (*CERN*), Jaakko Samuel Murtomaki (*Tampere University of Technology (FI)*), Paolo Ferracin, Gijs De Rijk, Glyn Kirby, Juan Carlos Perez, Gerard Willering (*CERN*) and Matthieu Canale (*Universite de Savoie Mont-Blanc (FR)*)

17:45 **Wed-Af-Or13-06: Comparison between measurements and calculations of shielding-current-induced field in a small dipole magnet wound with coated conductors**
Yusuke Sogabe and Naoyuki Amemiya (*Kyoto University*)

16:00 - 18:00 **Regency CD**

Wed-Af-Or14 - Novel Wire Processes and Development - *in Memoriam of Professor Kyoji Tachikawa*

Session Moderators: Matthew C. Jewell, University of Wisconsin - Eau Claire and Charlie Sanabria, Commonwealth Fusion Systems

16:00 **Wed-Af-Or14-01: Memorial**
Gen Nishijima *(National Institute for Materials Science*), Yukikazu Iwasa *(Francis Bitter Magnet Laboratory / Plasma Science and Fusion Center, Massachusetts Institute of Technology)* and Nobuya Banno *(National Institute for Materials Science)*

16:15 **Wed-Af-Or14-02: Reduced strain/stress sensitivity of the critical current of Nb3Sn conductors**
Bernd Seeber (*University of Geneva - Department of Applied Physics, Geneva, Switzerland, now scMetrology SARL, Geneva, Switzerland*), Ciro Calzolaio (*University of Geneva, Department of Quantum Matter Physics, Switzerland, now Paul Scherrer Institut, Villingen, Switzerland*), Damien Zurmühle (*University of Geneva, Department of Quantum Matter Physics, Switzerland*), Vital Abächerli (*Bruker EAS, Hanau, Germany*), Matteo Alessandrini (*Bruker BioSpin, Fällanden, Switzerland*), Gianluca De Marzi (*ENEA, Frascati, Italy, now CERN, Geneva, Switzerland*) and Carmine Senatore (*University of Geneva, Department of Quantum Matter Physics, Switzerland*)

16:30 **Wed-Af-Or14-03: Three-fold improvement in layer critical current density in Nb_3Sn wires by using Hf addition**
Peter Lee, Shreyas Balachandran, Chiara Tarantini (*Applied Superconductivity Center, National High Field Magnet Laboratory, Florida State University*), Nawaraj Paudel (*Applied Superconductivity Center, NHMFL, Florida State University*), Fumitake Kametani (*Applied Superconductivity Center, National High Field Magnet Laboratory, Florida State University*), Yi-Feng Su (*Magnet Science and Technology, National High Magnetic Field Laboratory, Florida State University*), Benjamin Walker, William Starch and David Larbalestier (*Applied Superconductivity Center, National High Field Magnet Laboratory, Florida State University*)

16:45 **Wed-Af-Or14-04: Wire and Cable Characterization of Nb3Sn Conductor with High Heat Capacity**
Emanuela Barzi, Daniele Turrioni (*Fermilab*), Xingchen Xu (*Fermi National Accelerator Lab*) and Alexander Zlobin (*Fermilab*)

17:00 **Wed-Af-Or14-05: Evolution of Nano-particles Doping in Nb3Sn Wires**
Mattia Ortino, Michael Eisterer, Thomas Baumgartner (*TU Wien*), Mike Sumption (*The Ohio State University*), Xingchen Xu (*Fermilab*), Xuan Peng (*Hyper Tech Research, Inc.*), Johannes Bernardi and Stephan Pfeiffer (*TU Wien*)

17:15 **Wed-Af-Or14-06: The effect of transverse loads on Nb3Sn Rutherford cables for accelerator magnets**
Bernardo Bordini (*CERN*) and Gianluca De Marzi (*INFN e Laboratori Nazionali di Frascati (IT)*)

17:30 **Wed-Af-Or14-07: Recent advances in iron-based superconducting wires for high-field applications**
Yanwei Ma (*Institute of Electrical Engineering, Chinese Academy of Sciences*)

17:45 **Wed-Af-Or14-08: Fabrication and Test of φ35 mm Iron-Based Superconductor Coils**
Zhan Zhang (*IHEP, Chinese Academy of Sciences (CAS)*), Dongliang Wang (*Institute of Electrical Engineering, CAS*), Shaoqing Wei (*IHEP, Chinese Academy of Sciences (CAS)*), Lingling Gong, Donghui Jiang (-), Fang Liu

(*CAS Technical Institute of Physics and Chemistry*), Huajun Liu (*Chinese Academy of Sciences*), Quanling Peng, Chao Tian, Yingzhe Wang, Xiangchen Yang (-), Xianping Zhang (*Institute of Electrical Engineering, Chinese Academy of Science*), Zhen Zhang (-), Yanwei Ma (*Institute of Electrical Engineering, Chinese Academy of Sciences*) and Qingjin Xu (*IHEP*)

16:00 - 18:00 **Regency EF**

Wed-Af-Or15 - Rotating Machines I

Session Moderators: Thibault Genestier, GE Power and Timothy Haugan, U.S. Air Force Research Laboratory

16:00 **Wed-Af-Or15-01: Key electromagnetic characteristics of non-insulation REBCO rotor windings in machines of electrical aircraft: eddy loss and ramping delay.**
Yawei Wang (*University of Bath*), Zixuan Zhu (-), Fangjing Weng, Min Zhang and Weijia Yuan (*University of Strathclyde*)

16:15 **Wed-Af-Or15-02: Fast High-Fidelity AC Loss Modeling in Fully Superconducting Machines for Turbo-electric Propulsion in Aircraft**
Philippe Masson (*AML Superconductivity and Magnetics*) and Virginia Phifer (-)

16:30 **Wed-Af-Or15-03: Conceptual design of an HTS motor for future electric propulsion aircrafts**
Dinh-Vuong Le, In-Keun Yu, Minwon Park and Seok-Ju Lee (*Changwon National University*)

16:45 **Wed-Af-Or15-04: Low loss HTS stator coils for high power density superconducting motors**
Alexander Otto and Linda Saraco (*Solid Material Solutions, LLC*)

17:00 **Wed-Af-Or15-05: Superconducting magnetic heterostructured components for electric motor applications**
Vicente Climente-Alarcon (*ASCG - Dept. Materials Science and Metallurgy, University of Cambridge*), Nikolay Mineev, Anis SMARA (*University of Cambridge*), Łukasz Tomków (*Wrocław University of Technology*) and Bartlomiej Glowacki (*University of Cambridge*)

17:15 **Wed-Af-Or15-06: Rotor Cooling Concept for the ASuMED Superconductive Motor**
Ana Perez and Ruud van der Woude (*Demaco Holland BV*)

17:30 **Wed-Af-Or15-07: Analytical and Experimental Study on a Low-Speed and High-Efficiency 1 kW Class Fully High-Temperature Superconducting Induction/Synchronous Generator**
Liangliang Wei and Taketsune Nakamura (*Kyoto University*)

17:45 **Wed-Af-Or15-08: Superconducting magnetic bearings for a high-speed electric aircraft motor**
Mathieu Szmigiel (*Robinson Research Insititute, Victoria University of Wellington*), Fergus Robinson, James Storey, Stuart Wimbush and Rod Badcock (*Robinson Research Institute, Victoria University of Wellington*)

18:30 – 23:00 **Pacific & BC Ballrooms**
Banquet **Fairmont Hotel**

THURSDAY, SEPTEMBER 26, 2019

08:00 - 08:45 **Regency Ballroom**
Plenary: Timothy Coombs (University of Cambridge)
Session Moderators: Mathias Noe, Karlsruhe Institute of Technology

08:00 **Thu-Mo-PL5-01: Advances in Superconducting Rotating Machinery**
Tim Coombs (*University of Cambridge*)

08:45 - 10:45 **Level 2 Posters 1**
Thu-Mo-Po4.01 - Associated Technology II
Session Moderators: Thanatheepan Balachandran, University of Illinois and Eric Sun, Jefferson Lab

Thu-Mo-Po4.01-02 [1]: A uniform pressure actuator with high forming efficiency based on the pulsed magnet manufacturing technique
Zhangzhe Li, Zhenhao Li, Quanliang Cao, Qi Chen, Xiaotao Han and Liang Li (*Wuhan National High Magnetic Field Center, Huazhong University of Science and Technology*)

Thu-Mo-Po4.01-03 [2]: Pulsed magnet design and fabrication for generating background magnetic field in pulse current driven forming
Pengxin Dong, Zhangzhe Li, Quangliang Cao, Qi Chen, Xiaotao Han and Liang LI (*Wuhan National High Magnetic Field Center, Huazhong University of Science and Technology*)

Thu-Mo-Po4.01-04 [3]: The Design of the 30kA DCCT using in the FTPMF system
Shaozhe Zhang (*Wuhan National High Magnetic Field Center,Huazhong University of Science and Technology*), Zhenglei Wang, Jianfeng Xie (*Wuhan National High Magnetic Field Center, Huazhong University of Science and Technology*), Xiao Houxiu (*Huazhong University of Science & Technology*), Tonghai Ding (*Wuhan National High Magnetic Field Center,Huazhong University of Science and Technology*) and Xiaotao Han (*Wuhan National High Magnetic Field Center, Huazhong University of Science and Technology*)

Thu-Mo-Po4.01-05 [4]: Research on Influence of High Pulse Magnet Fault on Power Supply and Protection Strategy

Zhangfei Zhao (*1.College of Mechanical and Electronic Engineering, Suzhou University 2.Wuhan National High Magnetic Field Center Huazhong University of Science and Technology*), Hongfa Ding (*Wuhan National High Magnetic Field Center, Huazhong University of Science and Technology*), Tonghai Ding, Liang Li (*Huazhong university of science and technology*), Yun Xu (-), Tao Peng (*Wuhan National High Magnetic Field Center*), Yuan Pan and Peichen Li (*Wuhan National High Magnetic Field Center, Huazhong University of Science and Technology*)

Thu-Mo-Po4.01-06 [5]: Analysis of the commutation of the 24-pluse converter for high plused magnet outer coil power supply

Zhangfei Zhao (*College of Mechanical and Electronic Engineering; Suzhou University 2. Wuhan National High Magnetic Field Center Huazhong University of Science and Technology*), Hongfa Ding (*Wuhan National High Magnetic Field Center, Huazhong University of Science and Technology*), Tonghai Ding (*Huazhong university of science and technology*), Yun Xu (*Wuhan National High Magnetic Field Center, Huazhong University of Science and Technology*), Liang Li (*Huazhong University of Science and Technology*), Tao Peng (*Wuhan National High Magnetic Field Center*), Yuan Pan and Peichen Li (*Wuhan National High Magnetic Field Center, Huazhong University of Science and Technology*)

Thu-Mo-Po4.01-07 [6]: Properties of Selected High-strength Composite Conductors

Ke Han (*national high magnetic field laboratory*), Rongmei Niu and Vince Toplosky (-)

08:45 - 10:45 Level 2 Posters 1

Thu-Mo-Po4.02 - Test Facility

Session Moderators: Thanatheepan Balachandran, University of Illinois and Yusuke Sogabe, Kyoto University

Thu-Mo-Po4.02-01 [7]: Design and Implementation of Interlock System for CFETR CSMC Testing Platform based on FMEA

Tong Li (*Hefei institutes of Physical Science Chinese Academy of Science, University of Science and technology of China*)

Thu-Mo-Po4.02-02 [8]: Carpenter: superconducting magnet test facility management system

Michal Duda (*IFJ PAN*), Franco Julio Mangiarotti (*CERN*), Efstathios Karentzos (*National Technical Univ. of Athens (GR)*), Gaelle Ninet, Marta Bajko, Gerard Willering, Hugo Bajas, Jerome Feuvrier, Vincent Jeremy Desbiolles and Ioannis Koukovinis Platias (*CERN*

Thu-Mo-Po4.02-03 [9]: Preliminary Design of HEPdipo, a Nb3Sn Large Aperture Dipole Magnet for Cable and Insert Coil testing

Douglas Martins Araujo, Paolo Ferracin, Luca Bottura, Emmanuele Ravaioli, Gijs De Rijk (*CERN*), Xabier Sarasola (*EPFL*), Pierluigi Bruzzone (*EPFL-SPC*), Francesca Cau (*Fusion for Energy*), Alfredo Portone (*Fusion For Energy/European Commission*), Luigi Reccia (*Fusion for Energy*), Pietro Testoni (*F4E*), Soren Prestemon, GianLuca Sabbi (*LBNL*) and Joseph Minervini (*Massachusetts Institute of Technology*)

Thu-Mo-Po4.02-05 [10]: Concept Design of magnet system of the large scale superconducting conductor test facility for future fusion reactor

Chao Dai (*Institute of Plasma Physics, Chinses Academy of Science*), Yu Wu (*ASIPP*), Jinggang Qin (*Chinses Academy of Science*), Yi Shi (*ASIPP*) and Yongliang Zhang (*Chinses Academy of Science*)

Thu-Mo-Po4.02-06 [11]: Upgrade of sub-systems and performance improvement for a versatile multi-field test facility of superconducting wires and tapes

Xingzhe Wang, Youhe Zhou (*Lanzhou University*), Mingzhi Guan and Canjie Xin (*The Institute of Modern Physics of Chinese Academy of Science*)

08:45 - 10:45 Level 2 Posters 1

Thu-Mo-Po4.03 - Novel Diagnostics and Other Techniques

Session Moderators: Takanobu Kiss, Kyushu University and Emmanuele Ravaioli, CERN

Thu-Mo-Po4.03-01 [12]: Development of a radiation resistant magnetometer

Martin Eibach (*GSI Helmholtzzentrum für Schwerionenforschung*), Carsten Muehle (*GSI Helmholtzzentrum fuer Schwerionenforschung*), Georg Bollen (*Michigan State University*), Hanno Leibrock (*GSI Helmholtzzentrum für Schwerionenforschung GmbH*), Kerim Gulyuz (*Michigan State University*), Peter Rottlaender (*GSI Helmholtzzentrum für Schwerionenforschung*) and Ryan Ringle (*Michigan State University*)

Thu-Mo-Po4.03-02 [13]: Development of rotating coil measurement system

Jianxin Zhou (*Institute of High Energy Physics, CAS*), Wen Kang (*Institute of High Energy Physics (IHEP)*), Shuai Li, Yuwen Wu, Yiqin Liu, Xi Wu, Li Li and Changdong Deng (*Institute of High Energy Physics, Chinese Academy of Sciences*)

Thu-Mo-Po4.03-03 [14]: Current Reset in Superconducting Devices

Michael Parizh, Wolfgang Stautner, Anbo Wu and Minfeng Xu (*GE Global Research*)

Thu-Mo-Po4.03-04 [15]: The Application of Coordination to Magnetic Measurement Automation: An SSW System Example

Jerzy Nogiec (*Fermilab*), Padma Akella, Kelley Trombly-Freytag, Joseph DiMarco and Dana Walbridge (*Fermi National Accelerator Laboratory*)

Thu-Mo-Po4.03-05 [16]: A Numerical Method to Calculate Spatial Harmonic Coefficients of Magnetic Fields generated by Screening Currents in an HTS Magnet

Jeseok Bang, Jaemin Kim, Uijong Bong, Jung Tae Lee (*Seoul National University*), Soobin An (*SeoulNationalUniversity*), Chaemin Im, Jeonghwan Park, Seong Hyeon Park (*Seoul National University*), Kabindra Bhattarai (*Florida State University*) and Seungyong Hahn (*Seoul National University*)

Thu-Mo-Po4.03-06 [17]: Design and optimization of the PCB search coils for the accelerator magnet measurements

Xu Liu, Bin Qin, Kaifeng Liu, Wenjie Han and Guanqun Li (*Huazhong University of Science and Technology*)

Thu-Mo-Po4.03-07 [18]: A Novel Diagnosis Method through Pulse Sequence Analysis of DC Void Partial Discharge in High Temperature Superconducting Cable

Dong-Hun Oh, Ho-Seung Kim and Bang-Wook Lee (*Hanyang University*)

Thu-Mo-Po4.03-08 [19]: Feasibility Study of Distributed Optical Fiber Applied in the Temperature Measurement of HTS Cables

Kao Zhou, Li Ren, Jing Shi, Ying Xu (*Huazhong University of Science and Technology*) and DongSheng Pu (*State Key Laboratory of Advanced Electromagnetic Engineering*)

Thu-Mo-Po4.03-09 [20]: Characteristic Resistance Measurement of No-Insulation REBCO Pancake Coil under Different Conditions

So Noguchi (*Hokkaido University*), Takahiro Tatsuta, Daisuke Nishikawa, Hiroshi Ueda and Seokbeom Kim (*Okayama University*)

Thu-Mo-Po4.03-10 [21]: Design and Analysis of a Novel Two-Dimensional High Frequency Magnetic Tester for Nanocrystalline Alloy Material

Ming Yang, Yongjian Li (*Hebei University of Technology*), Qingxin Yang (*Tianjin University of Technology*), Shuaichao Yue (*State Key Lab of Reliability and Intelligence of Electrical Equipment, Hebei University of Technology*), Yifan Cui (*State Key Laboratory of Reliability and Intelligence of Electrical Equipment (School of Electrical Engineering, Hebei University of Technology)*) and Changgeng Zhang (*State Key Laboratory of Reliability and Intelligence of Electrical Equipment, School of Electrical Engineering, Hebei University of Technology*)

Thu-Mo-Po4.03-11 [22]: Implementation and first operational experiences with the high voltage In-Service-Tests on the superconducting magnet system of Wendelstein 7-X

Frank Füllenbach (*Max-Planck-Insatitut für Plasmaphysik*), Thomas Rummel (*Max-Planck-Institute for Plasma Physics*), Konrad Rieße, Thomas Mönnich (*Max-Planck-Institut für Plasmaphysik*), Hans-Stephan Bosch (*MPI für Plasmaphysik*) and Team W7-X (*Max-Planck-Institut für Plasmaphysik*)

Thu-Mo-Po4.03-12 [23]: Superconducting Cables Characterization with an electrical method

Luigi Morici, Giuseppe Messina (*ENEA*) and Edoardo Tamburo De Bella (*Department of electrical Engineering and Information Technology, University Tor Vergata*)

08:45 - 10:45 Level 2 Posters 1

Thu-Mo-Po4.04 - Fusion VII: Joints and Terminations

Session Moderators: Boris Stepanov, EPFL and Louis Zani, CEA-IRFM

Thu-Mo-Po4.04-01 [24]: Design and Manufacture of a prototype Nb3Sn-NbTi full-size joint sample for the CFETR Central Solenoid Model Coil

Guanghui Ma (*Institute of Plasma Physics Chinese Academy of Sciences*)

Thu-Mo-Po4.04-02 [25]: Development of CORC® Cable Terminations and Low-loss Joints for use in Magnets for Fusion

Jeremy Weiss, Danko van der Laan (*Advanced Conductor Technologies*), Tim Mulder (*CERN / Twente Technical University (NL)*), Herman Ten Kate (*CERN*), Leslie Bromberg and Philip Michael (*Massachusetts Institute of Technology*)

Thu-Mo-Po4.04-03 [26]: Dependence of joint resistance on current for ITER-TF joint samples

Shinsaku Imagawa (*National Institute for Fusion Science*), Hideki Kajitani (*National Institutes for Quantum and Radiological Science and Te*), Tetsuhiro Obana (*NIFS*), Suguru Takada, Shinji Hamaguchi (*National Institute for Fusion Science*), Hirotaka Chikaraishi (*NIFS*), Kazuya Takahata (*National Institute for Fusion Science*), Kunihiko Matsui (*Fusion Energy Research and Development Directorate, National Institute for Quantum and Radiological Science and Technology*) and Norikiyo Koizumi (*QST*)

Thu-Mo-Po4.04-04 [27]: Design Optimization and Assessment of Fabrication of ITER Central Solenoid Twin Box Joints

Ignacio Aviles Santillana (*CERN, University Carlos III (ES)*), Michael Guinchard, Oscar Sacristan De Frutos, Fritz Motschmann, Stefano Sgobba, Andrew George Lee Bruton, Enrique Gaxiola (*CERN*), Paul Libeyre (*ITER Organization*), Thierry Schild (*Iter*) and Patrick Decool (*CEA*)

Thu-Mo-Po4.04-05 [28]: Demountable Coaxial Clamped Joint For ITER Central Solenoid Module Final Test Program

Zbigniew Piec (*General Atomics*), Nicolai Martovetsky (*ORNL*), Kenneth Khumthong (*GA*), A. Langhorn (*Startech Inc.*), Sam Lloyd, Jeff Sheeron, Kurt Schaubel (*GA*) and John Smith (*General Atomics*)

Thu-Mo-Po4.04-06 [29]: Research and Development of the Heater Chains for the ITER Current Lead Terminals

Wanjiang Pan (*Institute of Plasma Physics, Chinese Academy of Sciences*), Jean-Yves Journeaux (*ITER International Organisation*), Yi Cao (*University of Science and Technology of China*), Cheng Wu (*Institute of Plasma Physcis Chinese Academy of Sciences*), Seungje Lee (*ITER International Organisation,*), Mo Shen (*University of Science and Technology of China*) and Yinfeng Zhu (*School of Mechanical and Electrical Engineering, Anhui Jianzhu University*)

Thu-Mo-Po4.04-07 [30]: Induced currents and AC losses models for a butt-joint with rutherfords shunts

Alexandre Torre (*CEA*) and Thierry Schild (*ITER IO*)

08:45 - 10:45 Level 2 Posters 1

Thu-Mo-Po4.05 - Other High Tc Wires and Cables

Session Moderators: Geonwoo Baek, Yonsei University and Alexander Otto, Solid Material Solutions, LLC

Thu-Mo-Po4.05-01 [31]: New precursor powders fabrication technique for Bi-2223 high temperature superconducting tapes

Shengnan Zhang, Lihua Jin, Yingjian Huang (*Northwest Institute for Non-ferrous Metal Research*), Chengshan Li (*Northwest Institute for Nonferrous Metal Research*), jianqing Feng, Zeming Yu, Xiaobo Ma and Pingxiang Zhang (*Northwest Institute for Non-ferrous Metal Research*)

Thu-Mo-Po4.05-02 [32]: Structure material performance evaluation for Bi2212 CICC conductor

Huang Chen (-), Huan Jin (*Institute of Plasma Physicas*), Fang Liu, Huajun Liu, Jinggang Qin, Dongshen Yang and Chao Zhou (-)

Thu-Mo-Po4.05-03 [33]: Mechanical and Electrical Testing of A Novel Enhanced Bi2212 Round Wire

Zhehua Mao and Jinggang Qin (*Institute of Plasma Physics, Chinese Academy of Sciences(ASIPP)*)

Thu-Mo-Po4.05-04 [34]: Critical Current under Axial Strain of High-Pressure HT Bi-2212 Round Wire

Huang Chen (*Institute of Plasma Physics, Chinese Academy of Sciences, University of Science and Technology of China*), Huajun Liu, Fang Liu, Yi Shi, Chao Dai, Chao Tian and Jinggang Qin (*Institute of Plasma Physics, Chinese Academy of Sciences*)

Thu-Mo-Po4.05-05 [35]: Tensile mechanical properties of silver alloy sheathed Bi-2212 wires

Chao Tian (*University of Science and Technology of China*), Huajun Liu, Fang Liu, Jinggang Qin, Chao Dai, Yi Shi and Zhehua Mao (*Institute of Plasma Physics, Chinese Academy of Sciences*)

Thu-Mo-Po4.05-06 [36]: Intra-wire resistance and AC loss of multi-filamentary Bi2212 round wire

Chao Zhou, Jinggang Qin (*Institute of Plasma Physics, Chinese Academy of Sciences*), Peng Gao (*University of Twente*) and Jiangang Li (*Institute of Plasma Physics, Chinese Academy of Sciences*)

Thu-Mo-Po4.05-07 [37]: Impact of Axial Tensile Strain on the Inhomogeneity of Critical Current for Bi-2212 Round Wire

Wei Chen (-)

Thu-Mo-Po4.05-08 [38]: Non-destructive evaluation of the critical current for Bi-2212 cable for fusion application

Yang Xinsheng and Wei Chen (*Southwest Jiaotong University*)

08:45 - 10:45 Level 2 Posters 1

Thu-Mo-Po4.06 - Wind, Wave, Tidal Generators II

Session Moderators: Kohei Higashikawa, Kyushu University and Liudmila Potanina, Russian Scientific R&D Cable Institute (JSC VNIIKP)

Thu-Mo-Po4.06-01 [39]: Analysis of a Double-sides Stator-PM Linear Generator for Wave Energy Conversion

Lei Huang, Binbin Hu and Minshuo Chen (*Southeast University*)

Thu-Mo-Po4.06-02 [40]: Performance of multi-layer fractional-slot concentrated windings for superconducting wind turbine generators in normal and short circuit operation conditions

Dong Liu (*Hohai University*) and Xiaowei Song (-)

Thu-Mo-Po4.06-03 [41]: Thermal and mechanical design of 10 MW class HTS wind power generator

Seokho Kim, Jaehwan Lee, Jeongmin Mun and Minwon Park (*Changwon National University*)

Thu-Mo-Po4.06-04 [42]: Comparison of Electromagnetic Performance of 10-MW HTS Double-Stator Flux Modulation Generators With Different Topologies for Offshore Direct-Drive Wind Turbines

Yi Cheng, Yuting Gao, Yuanzhi Zhang, Ronghai Qu and Qian Wang (*Huazhong University of Science and Technology*)

Thu-Mo-Po4.06-05 [43]: Design and feasibility study of a performance evaluation system for a large-scale HTS generator under short-circuit conditions

Byeong-Soo Go, Hae-Jin Sung, Minwon Park and In-Keun Yu (*Changwon National University*)

Thu-Mo-Po4.06-06 [44]: Design and property analysis of a performance evaluation system for HTS wind power generators

Changhyun Kim (*Changwon National University*), Hae-jin Sung (*Chnagwon National University*), In-Keun Yu and Park Minwon (*Changwon National University*)

Thu-Mo-Po4.06-07 [45]: A Novel Thermal Network Model for Double Stator Brushless Doubly-Fed Generator With Cage-Barrier Rotor Based on Improved Mechanical Structure

Xiaodong Jiang and Fengge Zhang (*Shenyang University of Technology*)

08:45 - 10:45 Level 2 Posters 1

Thu-Mo-Po4.07 - Magnetization and AC Losses II

Session Moderators: Kathleen Amm, BNL and Hiroshi Ueda, Okayama University

Thu-Mo-Po4.07-01 [46]: Core Loss Characteristics and Model Verification of Nanocrystalline Alloys Under Complex Working Conditions

Shipu Wu, Chengcheng Liu and Youhua Wang (*Hebei University of Technology*)

Thu-Mo-Po4.07-02 [47]: Transverse field measurements in a bulk superconducting Magnetic Shell for a CLAS12 Target at Jefferson Lab

Marco Statera (*INFN Milano - LASA*), Luca Barion (*INFN Ferrara*), Giuseppe Ciullo (*Universita e INFN, Ferrara (IT)*), Marco Contalbrigo (*INFN - National Institute for Nuclear Physics*), Paolo Lenisa (*Univers*), Andrew Sandorfi (*Jefferson Lab*), Michael Lowry (*JLAB*), Federico Spizzo (*Ferrara university*), Ilaria Balossino (*INFN Ferrara*) and Lucia Del Bianco (*Ferrara University*)

Thu-Mo-Po4.07-03 [48]: Magnetic Measurements of MQXFA Prototype Quadrupoles during Magnet Assembly

Xiaorong Wang (*Lawrence Berkeley National Laboratory*), Giorgio Ambrosio (*Fermilab*), Daniel Cheng (-), Guram Chlachidze (*Fermilab*), Joseph DiMarco (*Fermi National Accelerator Laboratory*), Sandor Feher (*Fermi National Accelerator Lab. (US)*), Paolo Ferracin (*CERN*), William Ghiorso, Christopher Hernikl (*Lawrence Berkeley National Laboratory*), Susana Izquierdo Bermudez (*CERN*), Thomas Lipton, Maxim Marchevsky, Scott Myers (*Lawrence Berkeley National Laboratory*),

Joseph F Muratore (*Brookhaven National Laboratory*), Fred Nobrega (*Fermilab*), Heng Pan, Soren Prestemon, GianLuca Sabbi (*LBNL*), Ahmet Pekedis (*Lawrence Berkeley National Laboratory*), Jesse Schmalzle (*BNL*), Honghai Song (*Brookhaven National Laboratory*), Ezio Todesco (*CERN*), Peter Wanderer (*Brookhaven Lab*) and Miao Yu (*Fermilab*)

Thu-Mo-Po4.07-04 [49]: A simplified electromagnetic modelling of accelerator magnets wound with Conductor on Round Core wires for ac loss calculations

Yusuke Sogabe, Masahiro Yasunaga and Naoyuki Amemiya (*Kyoto University*)

Thu-Mo-Po4.07-05 [50]: Field Quality Measurements of High-Temperature Superconducting Canted Cosine Theta Accelerator Magnets

Cory Myers (*Ohio State University*), Mike Sumption (*The Ohio State University*), Ted Collings (*MSE, OSU*), Joseph DiMarco (*Fermi National Accelerator Laboratory*), Soren Prestemon, GianLuca Sabbi (*LBNL*), Tengming Shen (*Lawrence Berkeley National Lab*), Laura Garcia Fajardo and Xiaorong Wang (*Lawrence Berkeley National Laboratory*)

Thu-Mo-Po4.07-06 [51]: Maximising the trapped field of HTS ring magnets

Muhammad Ali, Min Zhang and Weijia Yuan (*University of Strathclyde*)

Thu-Mo-Po4.07-07 [52]: AC Loss of Superconducting Materials- refined loss estimates for very high density motors and generators for hybrid-electric aircraft: MgB2 wires, Coated conductor tapes and wires

Mike Sumption (*The Ohio State University*)

Thu-Mo-Po4.07-08 [53]: Coupling time constants measurements of spirally-wound striated coated conductors

Yang Li, Ning Wang (*Kyoto University*), Yoshiyuki Yoshida (*National Institute of Advanced Industrial Science and Technology*), Takato Machi (*AIST*) and Naoyuki Amemiya (*Kyoto University*)

08:45 - 10:45 **Level 2 Posters 2**

Thu-Mo-Po4.08 - Wind, Wave, Tidal Generators - I

Session Moderators: Neil Mitchell, ITER Organization and Tatsushi Nakamoto, High Energy Accelerator Research Organization, KEK

Thu-Mo-Po4.08-02 [54]: Performance analysis of a metal-insulation type lab-scale HTS wind power generator

Hae-Jin Sung, Byeong-Soo Go, Minwon Park and Yu In-Keun (*Changwon National University*)

Thu-Mo-Po4.08-03 [55]: Characteristics Analysis of Fully HTS Synchronous Generators with Dual Field Windings

Kyeongdal Choi (*Korea Polytechnic University*), Myeonghee Lee (*KoreaPolytechnicUniversity*), Sangho Park, Jooyeong So, Gye-Won Hong, Woo-Seok Kim (*Korea Polytechnic University*) and Ji-Kwang Lee (*Woosuk University*)

Thu-Mo-Po4.08-04 [56]: Electromagnetic Design of HTS DC Generator with Iron-cored Stator and Rotor

Qian Wang, Ronghai Qu, Yi Cheng and Yuting Gao (*Huazhong University of Science and Technology*)

Thu-Mo-Po4.08-05 [57]: Topology and Preliminary Design of HTS Air Core Superconducting Generator

Han-Wook Cho, Gang-Hyun Jang, Tae-Kyoung Bang, Lee Jung-In, Hu-Seung Lee, Jang-Young Choi (*Chungnam National University*) and Kiruba Haran (*University of Illinois*)

Thu-Mo-Po4.08-06 [58]: Electromagnetic Design of an HTS Claw Pole Wind Generator

Yuanzhi Zhang, Yuting Gao, Yi Cheng and Ronghai Qu (*Huazhong University of Science and Technology*)

Thu-Mo-Po4.08-07 [59]: Electromagnetic design of tens MW-class fully-superconducting wind power generators with high-performance REBa2Cu3Oy wires

Shun Miura, Masataka Iwakuma (*Kyushu University*) and Teruo Izumi (*Advanced Industrial Science and Technology*)

Thu-Mo-Po4.08-08 [60]: Conceptual Design of floating Off-shore Wind Farm in Jeiu Island considering 10-MW-Class Permanent Magnet and High-Temperature Superconducting Generators

Jae Hyung Moon, Yoon Seok Chae, Jung Hyup Ko, Ji Hyung Kim, Huu Luong Quach (*jeju National university*), Chang Ju Hyeon, JungHyun Hong, Dae Hyoun Kim (-), Sail Park (*Korea Institute of Energy Research)*, Chang Jin Boo (*Jeju International University*), Yong Soo Yoon (*Shin Ansan University*), Hyung Wook Kim, Young Sik Jo (*Korea Electrotechnology Research Institute*) and Ho Min Kim (*Jeju National University*)

Thu-Mo-Po4.08-09 [61]: Investigation of multi-phase armature windings in HTS wind turbine generators

Dong Liu (*Hohai University*) and Xiaowei Song (-)

Thu-Mo-Po4.08-10 [62]: Short-circuit characteristics of an HTS wind turbine generator using non-insulated HTS tapes in its field winding

Dong Liu (*Hohai University*) and Xiaowei Song (-)

08:45 - 10:45 **Level 2 Posters 2**

Thu-Mo-Po4.09 - Joints Between Superconductors

Session Moderators: Shintetsu Kanazawa, Muroran Institute of Technology and Jun Lu, FSU/NHMFL

Thu-Mo-Po4.09-01 [63]: Joint properties for RE123-coated conductor in CJMB method

Shintetsu Kanazawa, Yasuteru Mawatari, Toshihiro Kuzuya, Yusuke Amakai, Yoshinori Tayu, Naoki Momono, Shinji Hirai (*Muroran Institute of Technology*) and Yoshinori Yanagisawa (*RIKEN*)

Thu-Mo-Po4.09-02 [64]: Development and test results of a superconducting joint resistance evaluation system

Kensuke Kobayashi, Akira Uchida, Munenori Amaya, Gen Nishijima and Hitoshi Kitaguchi (*National Institute for Materials Science*)

Thu-Mo-Po4.09-03 [65]: Evaluation of Joint Resistance and Electromechanical Properties in Various Type of Ultrasonic Weld CC Tape Joints

Michael de Leon and Hyung-Seop Shin (*Andong National University*)

Thu-Mo-Po4.09-04 [66]: Investigations on the synthesis and melt-growth process of low melt temperature REBCO materials

Zili Zhang, Jianhua Liu, Lei Wang (*Institute of Electrical Engineering, Chinese Academy of Sciences*) and Qiuliang Wang (-)

Thu-Mo-Po4.09-05 [67]: Research of Nb3Sn superconducting joint by powder metallurgy

Junsheng Cheng (*Institute of Electrical Engineering, Chinese Academy of Sciences*), Qiuliang Wang (-), Qinghang Qiu (*Beijing University of Technology*), Zili Zhang, Wanshuo Sun (*Institute of Electrical Engineering, Chinese Academy of Sciences*) and Hongli Suo (*Beijing University of Technology*)

Thu-Mo-Po4.09-06 [68]: Progress on the Superconducting Joint Technique for the Reacted MgB2 Wires for MRI Magnet Development

Byeongha Yoo, Haigun Lee (*Korea University*), Duck Young Hwang (*Kiswire Advanced Technology Co*), Hyun Sung Noh, Jimin Kim and Young-Gyun Kim (*Korea University*)

08:45 - 10:45 Level 2 Posters 2

Thu-Mo-Po4.10 - Current Leads

Session Moderators: Bartlomiej Glowacki, University of Cambridge and Mike Sumption, The Ohio State University

Thu-Mo-Po4.10-01 [69]: Comparative study of cryogenic NbTi/Cu and MgB2/Brass based current leads

Atul Garg, Hiren Nimavat, Dashrath Sonara, Gaurang Mahesuria, Rakesh Patel, Dikens Christian, Nitin Bairagi, Gaurav Purwar, Rajiv Sharma (*Institute for Plasma Research*), Pankil Shah, Ketan Patel, Pradip Panchal, Rohit Panchal, Vipul Tanna and Upendra Prasad (*Institute for Plasma Research)*

Thu-Mo-Po4.10-02 [70]: Comparison Analysis of Three Different Structures of Current Leads for the Superconducting Energy Pipeline

Xianhao Li, Li Ren, Jing Shi and Ying Xu (*Huazhong University of Science and Technology*)

Thu-Mo-Po4.10-03 [71]: Thermal Design and Test of 4kA Current Lead based on Stacked YBCO Conductor

Zongtai Xie (*Institute of High Energy Physic, CAS*), Feipeng Ning (*IHEP*) and Ling Zhao (*IHEP,CAS*)

Thu-Mo-Po4.10-04 [72]: Finite Element Analysis and Experimental test of current leads with parallel HTS tapes

Anbo Wu, Susumu Mine (*GE Global Research*), ye bai (*GE Global Research Center*), Minfeng Xu (*GE Global Research*) and Anfeng Li (*GE Healthcare*)

Thu-Mo-Po4.10-06 [73]: Design of a hybrid current lead for vertical testing cryostat

Dongsheng Ni, Shijun Zheng (*Institute of Modern Physics, Chinese Academy of Sciences*) Zheng Rong Ouyang (*High Magnetic Field Laboratory, Chinese Academy Sciences*), Wei Wu and Xudong Wang (*Institute of Modern Physics, Chinese Academy of Sciences*)

08:45 - 10:45 Level 2 Posters 2

Thu-Mo-Po4.11 - Current Limiters & Breakers

Session Moderators: Neil Mitchell, ITER Organization and Tatsushi Nakamoto, High Energy Accelerator Research Organization, KEK

Thu-Mo-Po4.11-01 [74]: Analysis on Protection Coordination of Over-Current Relay Using SFCL's Impedance Compensation for Protection of a Power Distribution System

Sung-Hun Lim (*Soonsil University*) and Park Min-Ki (*Soongsil University*)

Thu-Mo-Po4.11-02 [75]: MgB2- and MT-YBaCuO bulk superconductors for the inductive fault current limiters.

Tetiana Prikhna (*V. Bakul Institute for Superhard Materials of the national Academy of Ukraine*) and Vladimir Sokolovsky (*Ben-Gurion University of the Negev*)

Thu-Mo-Po4.11-03 [76]: Design and Performance Evaluation of a REBCO NI-SFCL applied in Short-Circuit Faults Occurred in 350 kV Flexible DC transmission

Rao Jin, Tao Wang (*Nanjing University of Science and Technology*), Kaizhong Ding (*Institute of Plasma Physics, Chinese Academy of Sciences*), Shuangsong Du (-) and Fujin Deng (*Southeast University*)

Thu-Mo-Po4.11-04 [77]: Integration of a Flux-Coupling-Type SFCL into a Solid State Transformer-based Energy Router for Its Current-Limiting Performance Enhancement

Lei Chen, Xuyang Zhang, Guocheng Li, Hongkun Chen (*Wuhan University*), Ying Xu, Li Ren and Yuejin Tang (*Huazhong University of Science and Technology*)

Thu-Mo-Po4.11-05 [78]: Optimal Designing and Performance Evaluation of Inductive Superconducting Fault Current Limiter Combined with Low-Voltage Mechanical Circuit Breaker in DC Microgrid System

Kyu-Hoon Park, Ho-Yun Lee, Mansoor Asif and Bang-Wook Lee (*Hanyang University*)

Thu-Mo-Po4.11-06 [79]: Current Limiting and Interrupting Characteristics of Flux-Lock Type SFCL with Mechanical Switch

Sung-Hun Lim, Min-Ki Park and Sang-Jae Choi (*Soongsil University*)

Thu-Mo-Po4.11-07 [80]: HTS Fault Current Limiting Module to Reduce Burden of a DC Circuit Breaker for 30 kV MDVC Power Grid

Jooyeong So, Woo-Seok Kim, Seyeon Lee, Kyeongdal Choi (*Korea Polytechnic University*) and Ji-Kwang Lee (*Woosuk University*)

Thu-Mo-Po4.11-08 [81]: Analysis of the recovery characteristics of superconducting coupled DC circuit breakers during reclosing operation

Seon-Ho Hwang, Hye-Won Choi and Hyo-Sang Choi (*Chosun University*)

Thu-Mo-Po4.11-09 [82]: Operating characteristics of arc-induction type DC circuit breaker with permanent magnets

Sang-Yong Park, Hui-Seok Gu and Hyo-Sang Choi (*Chosun university*)

Thu-Mo-Po4.11-10 [83]: Characteristics of a Current-limiting DC circuit breaker with a superconducting coil applied to the commutation circuit

Hye-Won Choi, Hyo-Sang Choi and Sang-Yong Park (*Chosun university*)

Thu-Mo-Po4.11-11 [84]: Improvement of Current Limiting and Interrupting Operation of Hybrid DC Circuit Breaker using Double Quench

Sung-Hun Lim, Sang-Jae Choi and Min-Ki Park (*Soongsil University*)

08:45 - 10:45 **Level 3 Posters**

Thu-Mo-Po4.12 - Power Applications I

Session Moderators: Kohei Higashikawa, Kyushu University and Federico Scurti, NCSU

Thu-Mo-Po4.12-01 [88]: Mobile Superconducting Magnetic Energy Storage for On-site Estimations of the Electric Power System Stability

Shinichi Nomura (*Meiji University*), Tanzo Nitta (*The University of Tokyo*) and Takakazu Shintomi (*KEK*)

Thu-Mo-Po4.12-02 [89]: Multi-objective filter designing for HTS SMES considering the voltage distribution characteristic

Meng Liao (-), Jing Shi and Li Ren (*Huazhong University of Science and Technology*)

Thu-Mo-Po4.12-03 [90]: Development of a 1-T Class Force-Balanced Helical Coils Using REBCO Tapes

Hiroharu Kamada, Akira Ninomiya, Shinichi Nomura (*Meiji University*), Tsuyoshi Yagai (*Sophia University*), Taketsune Nakamura (*Kyoto University*) and Hirotaka Chikaraishi (*NIFS*)

Thu-Mo-Po4.12-04 [91]: The model and characteristics of SMES coil (1MJ) constructed of corc cable

Zhidun Zeng (-), Zixuan Zhu, Yawei Wang (*University of Bath*), Min Zhang and Weijia Yuan (*University of Strathclyde*)

Thu-Mo-Po4.12-05 [92]: Magneto-Archimedes levitation properties for metals by ferromagnetic material arrangement in magnetic fields

Daiki Yamamoto, Kenichi Yamagishi and Osuke Miura (-)

Thu-Mo-Po4.12-06 [93]: Design and Fabrication of the Permanent Magnet Diverter for Deflecting Electrons on Wide-field X-ray Telescope

Lei Wang, Qiuliang Wang and Junsheng Cheng (*Institute of Electrical Engineering, Chinese Academy of Sciences*)

Thu-Mo-Po4.12-07 [94]: Research Magnets with High-Field Uniformity

Rainer Meinke, Reza Bahadori and TA Aravindakshan (*AML Superconductivity and Magnetics*)

Thu-Mo-Po4.12-09 [95]: Development and challenges of a commercial megawatt high temperature superconducting DC induction heater

Ping Yang (*Shanghai Maritime University*) and Yawei Wang (*University of Bath*)

Thu-Mo-Po4.12-10 [96]: Optimal design of multiple billet NI-HTS induction heating machine

Jin-geun Kim (-), Seungyong Hahn (*Seoul National University*), Arong Kim (*Research Institute of Industrial Science & Technology*), Soobin An (*Seoul National Univsrsity*) and Jongho Choi (*Supercoil Co., Ltd.*)

08:45 - 10:45 **Level 3 Posters**

Thu-Mo-Po4.13 - Levitation and Magnetic Bearings III

Session Moderators: Nikolay Bykovskiy, CERN and Toru Ogitsu, KEK

Thu-Mo-Po4.13-01 [97]: Numerical study on dynamic characteristic of HTS Maglev system based on H-formulation with motional electromotive force

Wenjiao Yang and Guangtong Ma (*Southwest Jiaotong University*)

Thu-Mo-Po4.13-02 [98]: Design optimization of a real-scale REBCO magnet with stepped cross-section shape and its application to EDS train

Tianyong Gong, Guangtong Ma, Ruichen Wang and Hangyu Qian (*Southwest Jiaotong University*)

Thu-Mo-Po4.13-03 [99]: Semi-Analytical Calculation of Levitation and Guidance Forces in a Superconducting EDS Train

Yao Cai (*Southwest Jiaotong University*), Yiyu Wang (-), Wenjiao Yang, Gang Li (*Southwest Jiaotong University*), Chao Wang (*School of Electrical Engineering, Southwest Jiaotong University*) and Guangtong Ma (*Southwest Jiaotong University*)

Thu-Mo-Po4.13-04 [100]: Dynamic Response Analysis of Superconducting EDS Train Based on Vehicle/Guideway Coupling Dynamics

Zhaoying Yan, Wenjiao Yang, Gang Li, Yao Cai, Yiyu Wang and Guangtong Ma (*Southwest Jiaotong University*)

Thu-Mo-Po4.13-06 [101]: 3-D Analysis of High-Tc Superconductor for Magnetic levitation under High-Speed Movement

Changqing Ye (*Hohai University*), Guangtong Ma, Tianyong Gong and Wenjiao Yang (*Southwest Jiaotong University*)

Thu-Mo-Po4.13-07 [102]: Numerical study and optimization for a prototype EDS maglev system

Xiao-Fen Li, Wei Wu, Zhijian Jin (*Shanghai Jiao Tong University*), Nan Shao and Dangwei Duan (*CRRC Changchun Railway Vehicles Co., LTD.*)

Thu-Mo-Po4.13-08 [103]: Study on the EDS-Maglev System Based on Dynamic Circuit Theory

Daoyu Hu (*nstitute of Magnetic Levitation and Electromagnetic Propulsion, CASIC*)

Thu-Mo-Po4.13-09 [104]: Levitation and guidance force for the system of coated conductor stacks and permanent magnets in a wide temperature range.

Maxim Osipov, Alexandr Starikovskii, Dmitry Abin (*National Research Nuclear University MEPhI (Moscow Engineering Physics Institute)*), Sergei Pokrovskii (*National Research Nuclear University MEPhI*), Irina Anischenko, Alexsey Podlivaev and Igor Rudnev (*National Research Nuclear University MEPhI (Moscow Engineering Physics Institute)*)

Thu-Mo-Po4.13-10 [105]: Vertical Dynamic Responses of the HTS Maglev System Under Track Random Irregularity

Li Wang (*School of Mechanics and Engineering, Southwest JiaotongUniversity*), Zigang Deng, Hongdi Wang and Haitao Li (*Applied Superconductivity Laboratory, State Key Laboratory of Traction Power, Southwest Jiaotong University*)

Thu-Mo-Po4.13-11 [106]: A new design and exciting for HTS superconducting magnet of Maglev

Yunhao Pan (*Shanghai Jiao Tong University*)

Thu-Mo-Po4.13-12 [107]: Investigation of the Levitation Force of High Temperature Superconducting Coils using Wind-and-Flip Method

Zihao Wang, Wei Wu, Jie Sheng, Yunhao Pan and Zhijian Jin (*Shanghai Jiao Tong University*)

08:45 - 10:45 **Level 3 Posters**

Thu-Mo-Po4.14 - Levitation and Magnetic Bearings IV

Session Moderators: Nikolay Bykovskiy, CERN and Toru Ogitsu, KEK

Thu-Mo-Po4.14-01 [108]: Proposal of Magnetically Levitated Mover Using High Tc SC Coils

Mochimitsu Komori, Yuki Tanabe, Ken-ichi Asami and Nobuo Sakai (*Kyushu Institute of Technology*)

Thu-Mo-Po4.14-02 [109]: Research on Electromagnetic Feasibility of Non-contact Eddy Current Brake System for Ultra-high-speed Maglev Trains

Su-Jeong Lee (*Yeungnam University and Gyeongbuk Technopark*), Jin Ho Kim (*Yeungnam University*), Ho-Young Kang, Junyoung Chae and Seung Min Choi (*Gyeongbuk Technopark*)

Thu-Mo-Po4.14-03 [110]: Guidance performance of YBCO bulks below the liquid nitrogen temperature zone

Shaolei Sun, Lei Wan, Zigang Deng (*Applied Superconductivity Laboratory, State Key Laboratory of Traction Power, Southwest Jiaotong University*), Li Wang (*School of Mechanics and Engineering, Southwest JiaotongUniversity*) and Jun Zheng (*Applied Superconductivity Laboratory, State Key Laboratory of Traction Power, Southwest Jiaotong University*)

Thu-Mo-Po4.14-04 [111]: Levitation Force Characteristics of High-Temperature Superconducting Bulks in a High Magnetic Field

Binjie Zhao, Zigang Deng, Zunxiang Hu (*State Key Laboratory of Traction Power, Southwest Jiaotong University*), Shuai Zhang (*School of Electrical Engineering, Southwest Jiaotong University*) and Jun Zheng (*State Key Laboratory of Traction Power, Southwest Jiaotong University*)

Thu-Mo-Po4.14-05 [112]: A superconducting magnetic and electrostatic hybrid suspension and feedback system for gravity measurement

Xinning Hu, Qiuliang Wang, Chunyan Cui, Hao Wang, Xing Huang (*Institute of Electrical Engineering, Chinese Academy of Sciences*) and Feifei Niu (*China Agricultural University*)

Thu-Mo-Po4.14-06 [113]: Effect of magnetic field attenuation due to superconducting joint resistance during gravity measurement

Xing Huang, Xinning Hu, Chunyan Cui, Hao Wang, Zhongming He and Qiuliang Wang (*Institute of Electrical Engineering, Chinese Academy of Sciences*)

Thu-Mo-Po4.14-07 [114]: Research of Position Detection and Magnetic Feedback on a Superconducting Levitation Sphere for Gravity Measurement

Chunyan Cui, Qiuliang Wang, Xinning Hu, Hao Wang, Zhongming He and Xing Huang (*Institute of Electrical Engineering, Chinese Academy of Sciences*)

Thu-Mo-Po4.14-08 [115]: Analysis and Experimental Test on a Permanent Magnet EDS System Employing an Annular Halbach Structure

Shuai Zhang (*School of Electrical Engineering, Southwest Jiaotong University*), Zigang Deng (*State Key Laboratory of Traction Power, Southwest Jiaotong University*), Li'an Jin (*School of Mechanics and Engineering, Southwest Jiaotong University*), Ze Zhang, Xiaochen Sang and Jun Zheng (*State Key Laboratory of Traction Power, Southwest Jiaotong University*)

10:45 - 12:30 Regency AB

Thu-Mo-Or16 - High Field Magnets for LHC Upgrade

Session Moderators: Soren Prestemon, LBNL and Renuka Rajput-Ghoshal, Jefferson Lab

10:45 **Thu-Mo-Or16-01 [Invited]: Status and Plans of the MQXFA Low Beta Quadrupoles for HL-LHC**

Daniel Cheng (-), Emmanuele Ravaioli, Ezio Todesco (*CERN*), Fred Nobrega (*Fermilab*), GianLuca Sabbi (*LBNL*), Giorgio Ambrosio (*Fermilab*), Giorgio Apollinari (*Fermi National Accelerator Lab. (US)*), Giorgio Vallone (*Lawrence Berkeley National Lab. (US)*), Guram Chlachidze (*Fermilab*), Heng Pan (*LBNL*), Honghai Song (*Brookhaven National Laboratory*), Ian PONG (*LBNL*), Jesse Schmalzle (*BNL*), Joseph DiMarco (*Fermi National Accelerator Laboratory*), Joseph F Muratore (*Brookhaven National Laboratory*), Juan Carlos Perez (*CERN*), Kathleen Amm (*Brookhaven National Laboratory*), Lance Cooley (ASC/*NHMFL/FSU*), Maria Baldini (*Fermi national accellerator laboratory*), Miao Yu (*Fermilab*), Michael Anerella (*Brookhaven National Laboratory*), Paolo Ferracin (*CERN*), Peter

Wanderer (*Brookhaven Lab*), Piyush Joshi (*Brookhaven National Laboratory*), Ruben Horacio Carcagno (-), Sandor Feher (*Fermi National Accelerator Lab. (US)*), Soren Prestemon (*LBNL*), Steve Krave (*Fermilab*), Stoyan Stoynev (*FNAL (US)*), Susana Izquierdo Bermudez (*CERN*), Thomas Strauss (*FNAL*), Vito Lombardo (*Fermi National Accelerator Laboratory*), Vittorio Marinozzi (*FNAL*) and Xiaorong Wang (*Lawrence Berkeley National Laboratory*)

11:15 **Thu-Mo-Or16-02: Assembly of MQXFBP1 prototype, the Nb3Sn Q2 quadrupole for HL-LHC**
Friedrich Lackner, Paolo Ferracin, Ezio Todesco, Stephane Triquet, Marc Pozzobon, Herve Prin, Christian Scheuerlein, Thomas Sahner, Nicolas Bourcey, Lucio Fiscarelli, Eelis Tapani Takala, Rosario Principe (*CERN*), Giorgio Ambrosio (*Fermilab*) and Attilio Milanese (*CERN*)

11:30 **Thu-Mo-Or16-03: Test Results of the First Two Full-Length Prototype Quadrupole Magnets for the LHC Hi-Lumi Upgrade**
Joseph F Muratore, Andrew Marone (*Brookhaven National Laboratory*), Daniel Cheng (-), Emmanuele Ravaioli (*CERN*), GianLuca Sabbi (*LBNL*), Giorgio Ambrosio (*Fermilab*), Giorgio Apollinari (*Fermi National Accelerator Laboratory*), Guram Chlachidze (*Fermilab*), Heng Pan (*LBNL*), Honghai Song, Kathleen Amm (*Brookhaven National Laboratory*), Maria Baldini (*Fermi national accellerator laboratory*), Maxim Marchevsky (*Lawrence Berkeley National Laboratory*), Michael Anerella, Paul Kovach (*Brookhaven National Laboratory*), Peter Wanderer (*Brookhaven Lab*), Piyush Joshi (*Brookhaven National Laboratory*), Ruben Horacio Carcagno (-), Sandor Feher (*Fermi National Accelerator Laboratory*) and Vittorio Marinozzi (*FNAL*)

11:45 **Thu-Mo-Or16-04: Mechanical performance of the first two prototype 4.5 m long Nb3Sn low-β quadrupole magnets for the Hi-Lumi LHC Upgrade**
Daniel Cheng (-), Giorgio Ambrosio (*Fermilab*), Eric Anderssen (*Lawrence Berkeley National Lab (US)*), Joseph DiMarco (*Fermi National Accelerator Laboratory*), Paolo Ferracin (*CERN*), Joseph F Muratore (*Brookhaven National Laboratory*), Heng Pan, Soren Prestemon, GianLuca Sabbi (*LBNL*), Giorgio Vallone (*Lawrence Berkeley National Lab. (US)*) and Xiaorong Wang (*Lawrence Berkeley National Laboratory*)

12:00 **Thu-Mo-Or16-05: A Database-Tool for Storage and Analysis of Magnet Parameters and Test Results**
Tiina Salmi (*Tampere University, Finland*), Susana Izquierdo Bermudez (*CERN*), Timo Tarhasaari (*Jalonne Oy*) and Antti Aleksis Stenvall (-)

12:15 **Thu-Mo-Or16-06: Prediction of the Reversible Critical Current Degradation in Nb3Sn Superconducting Accelerator Magnets**
Giorgio Vallone, Eric Anderssen, Soren Prestemon (*Lawrence Berkeley National Laboratory*), Bernardo Bordini and Paolo Ferracin (*CERN*)

10:45 - 12:45 **Regency CD**

Thu-Mo-Or17 - Very High Field Magnets

Session Moderators: Xavier Chaud, LNCMI-EMFL-CNRS, Univ. Grenoble Alpes, INSA, UPS and Gen Nishijima, National Institute for Materials Science

10:45 **Thu-Mo-Or17-01 [Invited]: High field cryogen-free superconducting magnet development beyond 30 T with advanced REBCO and high strength Nb3Sn conductors**

Satoshi Awaji (*Tohoku University*), Arnaud Badel, Tatsunori Okada, Kohki Takahashi (*HFLSM, Institute for Materials Research, Tohoku University*), Hiroshi Miyazaki (*Toshiba Energy Systems & Solutions Corporation*), Satoshi Hanai, Shigeru Ioka (*Toshiba Energy System & Solutions Corporation*), Shinji Fujita, Shogo Muto, Yasuhiro Iijima, Masanori Daibo (*Fujikura Ltd.*), Masahiro Sugimoto, Hirokazu Tsubouchi (*Furukawa Electric Co., Ltd.*), Hisaki Sakamoto (*Furukawa Electric Co., Ltd*), Hiroki Yokoyama and Kazuhiro Kajikawa (*Kyushu University*)

11:15 **Thu-Mo-Or17-02: The 40 T Superconducting Magnet Project at the National High Magnetic Field Laboratory**

Hongyu Bai (*National High Magnetic Fied Laboratory*), Dmytro Abraimov (*FSU, NHMFL, ASC*), Erick Arroyo (*National High Magnetic Fied Laboratory*), Kabindra Bhattarai (*National High Magnetic Field Laboratory*), Mark Bird (*FSU*), Scott Bole (*National High Magnetic Field Laboratory*), Ernesto Bosque (*Applied Superconductivity Center, National High Magnetic Field Laboratory, Florida State University*), Kurt Cantrell (*National High Magnetic Fied Laboratory*), Lance Cooley (*ASC/NHMFL/FSU*), Iain Dixon (*Florida State University*), Daniel Davis (*FSU/NHMFL*), Ashleigh Francis (*National High Magnetic Fied Laboratory*), Andrey Gavrilin (*Florida State University, Florida, USA*), Scott Gundlach (*National High Magnetic Fied Laboratory*), Seungyong Hahn (*Seoul National University*), Xinbo Hu (*ASC, NHMFL, FSU*), Kikelomo Ijagbemi (*National High Magnetic Field Laboratory*), Jan Jaroszynski (*Applied Superconductivity Center, National High Magnetic Field Laboratory, Florida State University*), Brent Jarvis (*National High Magnetic Fied Laboratory*), Kwang Lok Kim, Kwangmin Kim (*National High Magnetic Field Laboratory*), Youngjae Kim (-), David Larbalestier (*National High Magnetic Field Laboratory*), Jeremy Levitan (*National High Magnetic Fied Laboratory*), Jun Lu (*National High Magnetic Field Laboratory*), Joseph Lucia (-), Denis Markiewicz (*NHMFL*), William Marshall (*National High Magnetic Field Laboratory*), George Miller (*National High Magnetic Fied Laboratory*), Thomas Painter (*NHMFL, FSU*), Kyle Radcliff, Robert Stanton (*National High Magnetic Fied Laboratory*), Ulf Trociewitz (*ASC-NHMFL*), Youri Viouchkov, A.J. Voran (*National High Magnetic Fied Laboratory*), Robert Walsh (*Florida State University*), Hubertus Weijers (*NHMFL/FSU*), James Mike White and Greg Boebinger (*National High Magnetic Fied Laboratory*)

11:30 **Thu-Mo-Or17-03: Test and commissioning of the 32 T superconducting magnet**
Hubertus Weijers (*NHMFL/FSU*), A.J. Voran (*NHMFL*), B. Jarvis, S.R. Gundlach, W.A. Coniglio (*NHMFL / FSU*), Eric Stiers (*National High Magnetic Field Laboratory*), T.P. Murphy (*NHMFL / FSU*) and Mark Bird (*FSU*)

11:45 **Thu-Mo-Or17-04: Development of High Field Superconducting Magnets with Increasing Persistence and EXperimental Access**
Andrew Twin, Steven Ball, Neil Clarke, Timothy Hollis, Wenbin Ma, Ziad Melhem, Daniel Strange, Roman Viznichenko and David Warren (*Oxford Instruments*)

12:00 **Thu-Mo-Or17-05: Progress in the construction of the Nijmegen 45T hybrid magnet system**
Andries den Ouden, Matthias Hoffmann (*High Field Magnet Laboratory, Radboud University*), Frans Wijnen (*Radboud University Nijmegen*), Chris Wulffers (*High Field Magnet Laboratory, Radboud University, Nijmegen*), Gideon Laureijs (*High Field Magnet Laboratory, Radboud University*), Tim de Bruin (*High Field Magnet Laboratory, Radbod University*), Jos Perenboom (*High Field Magnet Laboratory, Radboud University Nijmegen*) and Peter Christianen (*High Field Magnet Laboratory, Radboud University*)

12:15 **Thu-Mo-Or17-06: From Manufacture to Assembly of the 43 T Grenoble Hybrid Magnet**
Pierre Pugnat, Benjamin Vincent (*LNCMI-EMFL-CNRS, UGA*), Bertrand Hervieu (*IRFU, CEA, Université Paris-Saclay*), Bruno Mallery, Charles Peroni (*LNCMI-EMFL-CNRS, UGA*), Christophe Berriaud (*IRFU, CEA, Université Paris-Saclay*), Cédric Grandclément, François Debray (*LNCMI-EMFL-CNRS, UGA*), Fréderic Molinié (*IRFU, CEA, Université Paris-Saclay*), Hans J. Schneider-Muntau (*CS&T*), Hubert Neyrial (*IRFU, CEA, Université Paris-Saclay*), Luc Ronayette, Mickael Pelloux (*LNCMI-EMFL-CNRS, UGA*), Patrick Graffin (*IRFU, CEA, Université Paris-Saclay*), Rolf Pfister, Romain Barbier (*LNCMI-EMFL-CNRS, UGA*), Romain Berthier (*IRFU, CEA, Université Paris-Saclay*), Thibault Disparti and Théo Boujet (*LNCMI-EMFL-CNRS, UGA*)

12:30 **Thu-Mo-Or17-07: Winding and 77 K Testing of Non-Insulated Coils for the IBS 25 T, 100 mm bore HTS Solenoid**
Shresht Joshi (*Brookhaven National Laboratory*), Magdelena Allen (*University of California*), Ramesh Gupta (*BNL*) and William Sampson (*Brookhaven National Laboratory*)

10:45 - 12:45 **Regency EF**

Thu-Mo-Or18 - Rotating Machines II

Session Moderators: Philippe Masson, AML Superconductivity and Magnetics and Yunxing Song, GE Global Research

10:45 **Thu-Mo-Or18-01 [Invited]: Development, test, installation, and commissioning of the 3 MW superconducing EcoSwing wind power generator**
Markus Bauer (*THEVA Dünnschichttechnik GmbH*)

11:15 **Thu-Mo-Or18-02: Development of non-insulated racetrack coils wound with second generation high temperature superconductor tapes for a stator system for wind generators**
Fabian Schreiner, Yingzhen Liu, Mathias Noe and Martin Doppelbauer (*Karlsruhe Institute of Technology*)

11:30 **Thu-Mo-Or18-03: Dual Superconducting Halbach Array Generator for large Direct Drive Wind Turbines**
Philippe Masson, Rainer Meinke and T.A. Aravindakshan (*AML Superconductivity and Magnetics*)

11:45 **Thu-Mo-Or18-04: Evaluation and Mitigation of AC Losses in a Fully Superconducting Machine for Wind Turbine Applications**
Thanatheepan Balachandran, Dongsu Lee and Kiruba S Haran (*University of Illinois at Urbana-Champaign*)

12:00 **Thu-Mo-Or18-05: New Type of Linear Switched Reluctance Generator for Wave Energy Applications**
Luis Garcia-Tabarés, Marcos Lafoz (*CIEMAT*), Marcos Blanco (*CIEAMT*), Francisco Garcia Lorenzo (*WEDGE*), Jorge Torres Miranda and Diego Obradors (*CIEMAT*)

12:15 **Thu-Mo-Or18-06: High temperature superconducting hybrid tape stacks - an enabling technology: challenges for DC and AC applications**
Bartlomiej Andrzej Glowacki (*ASCG Department of Materials Science and Metallurgy, University of Cambridge and Institute of Power Engineering*), Vicente Climente-Alarcon (*Department of Materials Science and Metallurgy, University of Cambridge*), Anis Smara (*ASCG, Department of Materials Science and Metallurgy, University of Cambridge*), Nikolay Mineev and Lukasz Tomkow (*Department of Materials Science and Metallurgy, University of Cambridge,*)

12:30 **Thu-Mo-Or18-07: Design and testing of a gas-helium cooled REBCO magnet prototype for a 10-Mvar HTS synchronous condenser**
Qihong Wu (*Department of Mechanical Engineering, Tsinghua University*), Timing Qu, Peng Song (*State Key Laboratory of Tribology, Department of Mechanical Engineering, Tsinghua University*), Changhong Hao, Yufan Yan (*Department of Mechanical Engineering, Tsinghua University*), Zhengjun Shi and Meng Song (*Electric Power Research Institute of Guangdong Power Grid Corporation*)

14:00 - 16:00 **Regency AB**

Thu-Af-Or19 - High Tc Wires and Cables II

Session Moderators: Kathleen Amm, BNL and Francesco Grilli, Karlsruhe Institute of Technology

14:00 **Thu-Af-Or19-01: Progress of SuperPower 2G HTS (RE)BCO Conductor Development for Magnet Applications**
Drew Hazelton (*SuperPower Inc.*)

14:15 **Thu-Af-Or19-02: New product line of SuperOx 2G HTS tapes customized for application in specific ranges of magnetic fields and temperatures**
Valery Petrykin (*SuperOx-Japan LLC*), Marat Gaifullin, Maki Okube (*SuperOx Japan LLC*), Tatsunori Okada (*Tohoku University*), Naoyuki Hirata, Vladimir Vyatkin, Miyuki Nakamura, Juhyun Chung (*SuperOx Japan LLC*), Satoshi Awaji (*Tohoku University*) and Sergey Lee (*SuperOx-Japan LLC*)

14:30 **Thu-Af-Or19-03: Development of ReBCO coated conductors with improved properties for magnet applications by THEVA**
Markus Bauer (*THEVA Dünnschichttechnik GmbH*)

14:45 **Thu-Af-Or19-04: Recent Advances in REBCO Tapes and Round Wires for High Magnetic Field Applications**
Venkat Selvamanickam (*University of Houston*)

15:00 **Thu-Af-Or19-05: Controllable Critical Current Degradation of ReBCO CC by Post-Manufacturing Annealing**
Griffin Bradford (*FSU - NHMFL - ASC*), Xinbo Hu (*ASC, NHMFL, FSU*), Jan Jaroszynski (*Applied Superconductivity Center, National High Magnetic Field Laboratory, Florida State University*), Dmytro Abraimov (*FSU, NHMFL, ASC*) and David Larbalestier (*National High Magnetic Field Laboratory*)

15:15 **Thu-Af-Or19-06: Electromechanical Performance of CORC® Cables and Wires under Axial Tension and Transverse Compression**
Danko van der Laan, Jeremy Weiss and Dustin McRae (*Advanced Conductor Technologies*)

15:30 **Thu-Af-Or19-07: Low cost transposed cables for coil windings made with Type NX 1G and ReBCO 2G HTS tapes**
Alexander Otto and Linda Saraco (*Solid Material Solutions, LLC*)

15:45 **Thu-Af-Or19-08: Experimental research of contact mechanical behavior among YBCO tapes in HTS cable**
Yang Liu and Yuanwen Gao (*Lanzhou University*)

14:00 - 16:00 **Regency CD**

Thu-Af-Or20 - Quench Detection and Protection Systems III

Session Moderators: Matthias Mentink, CERN and Emmanuele Ravaioli, CERN

14:00 **Thu-Af-Or20-01 [Invited]: Quench detection via Rayleigh backscattering interrogated optical fibers**
Federico Scurti (*NCSU*), Sasha Ishmael (*Lupine Materials and Technology*), Xiaorong Wang (*Lawrence Berkeley National Laboratory*), Jeremy Weiss, Danko van der Laan (*Advanced Conductor Technologies*), Soren Prestemon (*LBNL*) and Justin Schwartz (*NC State University*)

14:30 **Thu-Af-Or20-02: Modeling and Experimental Validation of Quench Protection Concepts for Canted-Cosine-Theta Type High-Field Magnets**
Jiani Gao, Alexander Gabard (*Paul Scherrer Institut*), Bernhard Auchmann (*CERN*), Carolin Zoller, Ciro Calzolaio, Giuseppe Montenero (*Paul Scherrer Institut*), Lucas Brouwer (*Lawrence Berkeley National Laboratory*), Philippe Lerch and Stephane Sanfilippo (*Paul Scherrer Institut*)

14:45 **Thu-Af-Or20-03: Acoustic sensor array for quench detection of CICC superconducting cables**
Makoto Takayasu (*MIT*)

15:00 **Thu-Af-Or20-04: Quench protection of the 16 T Nb3Sn ERMC and RMM magnets**
Emmanuele Ravaioli, Arjan Verweij, Davide Tommasini, Juan Carlos Perez and Susana Izquierdo Bermudez (*CERN*)

15:30 **Thu-Af-Or20-05: Quench simulations versus experimental observations on the HL-LHC MCBRD canted-cosine-theta short models and prototype magnets**
Matthias Mentink, Franco Julio Mangiarotti, Jeroen Van Nugteren (*CERN*), Michal Duda (*Polish Academy of Sciences (PL)*), Daniel Barna (*Wigner Research Centre for Physics*), Martin Istvan Novak (-) and Glyn Kirby (*CERN*)

14:00 - 15:45 **Regency EF**

Thu-Af-Or21 - Novel Applications and Power Applications

Session Moderators: Mark Ainslie, University of Cambridge and Timothy Haugan, U.S. Air Force Research Laboratory

14:00 **Thu-Af-Or21-01: A Superconducting Demonstrator Magnet for Magnetic Density Separation**
Jaap Kosse (*University of Twente*), Chao Zhou (*Institute of Plasma Physics, Chinese Academy of Sciences, Hefei, Anhui, China*), Marc Dhallé, Sander Wessel, Gonçalo Tomás, Erik Krooshoop (*University of Twente*), Peter Rem (*University of Delft*), Marcel ter Brake (*University of Twente, The Netherlands*) and Herman ten Kate (*CERN*)

14:15 **Thu-Af-Or21-02: A Superconducting Space Magnet for Antimatter Spectrometer**
Riccardo Musenich (*INFN e Universita Genova (IT)*), Oscar Adriani (*Dipartimento di Fisica*), Bertrand Baudouy (*CEA Saclay*), Valerio Calvelli (*CEA - Saclay*), Stefania Farinon (*INFN e Universita Genova (IT)*), Paolo Papini (*INFN*) and Bruna Bertucci (*Universita e INFN, Perugia (IT)*)

14:30 **Thu-Af-Or21-03: Practical Design and Performance Analysis Results of the First MgB2 Magnets for Superconducting Induction Heater in Korea**
Jongho Choi, Chan-Kyeong Lee, Sangho Cho (*Supercoil Co., Ltd.*), Minwon Park (*Changwon National University*) and Iwakuma Masataka (-)

14:45 **Thu-Af-Or21-04: Development of Superconducting-Magnetic-Energy-Storage (SMES) for Aerospace Applications**
Timothy Haugan (*U.S. Air Force Research Laboratory*) and Thomas Bullard (*UES Inc.*)

15:00 **Thu-Af-Or21-05: Potential of Long Solenoid Coil as Superconducting Cable with Energy Storage Function**
Kohei Higashikawa and Takanobu Kiss (*Kyushu University*)

15:15 **Thu-Af-Or21-06: Design and Test of 40 kV / 2 kA DC Superconducting Fault Current Limiter**
Qingquan Qiu (*Institute of Electrical Engineering, Chinese Academy of Science*), Liye Xiao (*Chinese Academy of Sciences*), Zhifeng Zhang (*Institute of Electrical Engineering Chinese Academy of Sciences*), Jingye Zhang (*Institute of Electrical Engineering, Chinese Academy of Sciences*), Naihao Song, Liwei Jing (-), Guomin Zhang (*Key Laboratory of Applied Superconductivity, Institute of Electrical Engineering, Chinese Academy of Sciences*) and Dong Xia (*Chinese Academy of Sciences*)

15:30 **Thu-Af-Or21-07: Development of a 220 kV/ 1.5kA Resistive Type Superconducting Fault Current Limiter**
Shaotao Dai, Tao Ma, Lei Hu, Bangzhu Wang and Teng Zhang (*Beijing Jiaotong University*)

16:30 - 18:30 Regency AB

Thu-Af-Or22 - NbTi Accelerator Magnets III

Session Moderators: Toru Ogitsu (KEK, High Energy Accelerator Research Organization) and Pierre Pugnat, CNRS - LNCMI

16:30 **Thu-Af-Or22-01: Improvement in training performance by enhancing coil end support of the Beam Separation Dipole for the High-Luminosity LHC**
Andrea Musso, Ezio Todesco (*CERN*), Hirokatsu Ohhata, Hiroshi Kawamata (*KEK*), Kenichi Sasaki (-), Kenichi Sasaki, Kenichi Tanaka (*KEK*), Kento Suzuki (-), Masahisa Iida (*KEK*), Michinaka Sugano (-), Naoki Okada, Naoto Takahashi (*KEK*), Nobuhiro KIMURA *(High Energy Accelerator Research Organization, KEK*), Norio Higahi, Ryutaro Okada, Tatsushi Nakamoto (*KEK*), Toru Ogitsu (-) and Yukiko Ikemoto (*kek*)

16:45 **Thu-Af-Or22-02: Test of the first full-length prototype of the HL-LHC D2 orbit corrector based on Canted Cosine Theta technology**
Franco Julio Mangiarotti, Glyn Kirby (*CERN*), Michal Duda (*Polish Academy of Sciences (PL)*), Matthias Mentink, Marta Bajko (*CERN*), Dominic Coll (*M&I Materials*), Vincent Jeremy Desbiolles, Jerome Feuvrier, Lucio Fiscarelli, Jean-Luc Guyon, Jacky Mazet, Jeroen Van Nugteren (*CERN*), Kevin Pepitone (*Uppsala University (SE)*), Juan Carlos Perez, Francois-Olivier Pincot, Gijs De Rijk (*CERN*), Jeff Robertson (*M&I Materials*), Jens Steckert, Ezio Todesco and Gerard Willering (*CERN*)

17:00 **Thu-Af-Or22-03: Cold tests of the first nested orbit corrector prototype for HL-LHC**
Jesús Ángel García-Matos, Fernando Toral, Jesús Calero, Pablo Gómez, Luis Garcia-Tabares, Daniel López Rodríguez, Teresa Martinez de Alvaro, Javier Munilla, Jose Antonio Pardo, Pablo Sobrino (*Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas (CIEMAT)*), Marta Bajko, Juan Carlos Perez, Ezio Todesco and Gerard Willering (*CERN*)

17:15 **Thu-Af-Or22-04: Assembly and Test of MQYYM: a 90 mm NbTi quadrupole magnet option for HL-LHC**
Damien Simon, Helene Felice (*Université Paris-Saclay (FR)*), Simon Perraud (-), Etienne Rochepault (*Université Paris-Saclay (FR)*), Jean-Michel Rifflet (-), Michel Segreti (*CEA/Saclay*), Juan Carlos Perez (*CERN*), Salvador Ferradas Troitino (*Centro de Investigaciones Energéti cas Medioambientales y Tecno*), Michael Guinchard, Ezio Todesco and Arnaud Pascal Foussat (*CERN*)

17:30 **Thu-Af-Or22-05: FAIR's first SIS100 Accelerator Quadrupole Doublet Module – Manufacturing Update and Test**
Anna Kario, Anna Szwangruber (*GSI Darmstadt*), Alexander Bleile (-), Kei Sugita, Jan-Patrick Meier, Egbert Fischer, Christian Roux and Peter Spiller (*GSI Darmstadt*)

17:45 **Thu-Af-Or22-06: Status of the SIS100 dipole magnet production and testing**
Patricia Aguar Bartolome (*GSI Helmholtzzentrum fuer Schwerionenforchung GmbH*), Anna Mierau, Christian-Eric Roux (*GSI*), Florian Kaether (*GSI Helmholtzzentrum für Schwerionenforschung GmbH, Darmstadt, Germany*), Giancarlo Golluccio (*GSI - Helmholtzzentrum fur Schwerionenforschung GmbH (DE)*), Pawel Kosek (*GSI*), Piotr Szwangruber (*GSI Helmholtzzentrum für Schwerionenforschung GmbH*), Walter Freisleben (-), Kei Sugita (*GSI*), Shekhar Santosh Mohite (*GSI,Darmstadt,Germany*), Alexander Warth (*GSI Helmholtzzentrum für Schwerionenforschung GmbH*) and Farid Marzouki (-)

18:00 **Thu-Af-Or22-07: Optimization of an Interaction Region Quadrupole Magnet for Future Electron-Ion Collider at Jefferson Lab**
Renuka Rajput-Ghoshal, Ruben Fair and Probie Ghoshal (*Jlab*)

18:15 **Thu-Af-Or22-08: Series Fabrication of the Superconducting Magnet Packages for LIPAC cryomodule**
Pablo Abramian (*CIEMAT*), Jesús Calero (*Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas (CIEMAT)*), Antonio Estevez, Pablo Gómez (*CIEMAT*), Luis Martinez Fresno (*Cent. Invest. Energ. Medioamb. Tec. (CIEMAT) - Consejo Sup. de I*), Joaquin Molla, Javier Munilla, Ivan Podadera Aliseda (*CIEMAT*), Nicolas Bazin (*CEA/Saclay*), Stéphane Chel (*CEA-Saclay*), Guillaume Devanz (*CEA*), Guy Phillips (*F4E*), Julio Lucas, Michel Lopez (*ELYTT Energy*), Marcos García (*ELYTT ENERGY S.L.*), Francisco Fernandez, Raul Bensmida (*Elytt Energy*) and Fernando Toral (*Centro de Investigaciones Energéti cas Medioambientales y Tecno*)

16:30 - 18:30 Regency CD

Thu-Af-Or23 - Magnets for NMR and Medical Applications

Session Moderators: Iain Dixon, NHMFL and Seungyong Hahn, Seoul National University

16:30 **Thu-Af-Or23-01: Construction and Test Results of a Cryogen-Free 23.5-T REBCO Magnet Prototype towards a Tabletop 1-GHz Microcoil NMR Magnet**
Dongkeun Park, Yi Li, Yoonhyuck Choi, Juan Bascuñàn and Yukikazu Iwasa (*Francis Bitter Magnet Laboratory / Plasma Science and Fusion Center, Massachusetts Institute of Technology*)

16:45 **Thu-Af-Or23-02: Development and charging test of a compact 1 GHz (23.5 T)-class NMR magnet with Bi-2223 inner coils**
Renzhong Piao, Yoshinori Yanagisawa, Masato Takahashi, Toshio Yamazaki (*RIKEN*), Hideaki Maeda (*RIKEN/Japan Science and Technology Agency*), Yu Suetomi (*Chiba University / RIKEN*), Takashi Noguchi (*IKEGAMI GIZYUTU*), Yasuyuki Miyoshi, Masatoshi Yoshikawa, Kazuyoshi Saito, Mamoru Hamada (*Japan Superconductor Technology, Inc.*), Shinji Matsumoto (*National Institute for Materials Science*) and Hiroto Suematsu (*JEOL RESONANCE Inc.*)

17:00 **Thu-Af-Or23-03: Operation and Performance Evaluation of a Conduction-Cooled 400 MHz/66-mm Metal-Clad No-Insulation All-REBCO NMR Magnet**
Jae Young Jang, Young Jin Hwang (*Korea Basic Science Institute*), Seungyong Hahn, Jaemin Kim (*Seoul National University*), Jun Hee Han (*Korea Basic Science Institute*), Yungil Kim (*SuNAM Co.,Ltd*), Kang Hwan Shin (*SuNAM Co., Ltd.,*), Hunju Lee (*SuNAM Co., Ltd.*), Sehwan In, Yong-Ju Hong, Hankil Yeom (*Korea Institute of Machinery & Materials*), Kwangmin Kim, Kwang Lok Kim (*National High Magnetic Field Laboratory*), Hongmin Yang, Minchul Ahn (*Kunsan National University*), Jeseok Bang (*Seoul National University*) and SangGap Lee (*Korea Basic Science Institute*)

17:15 **Thu-Af-Or23-04: Optimal Design of HTS/LTS Hybrid Magnet for 25T NMR**
Dongquan Wang, Yong Ren, Xinghao Wen, Junjun Li and Xiaogang Liu (*Institute of Plasma Physics, Chinese Academy of Sciences*)

17:30 **Thu-Af-Or23-05: Excitation Test of Superconducting Magnet for 230MeV Isochronous Cyclotron for Proton Therapy**
Jun Yoshida, Atsushi Hashimoto, Takaaki Morie, Yoshihiko Arakawa, Kazuya Taki, Hitoshi Mitsubori, Hiroshi Tsutsui, Takehisa Tsurudome, Yukio Mikami and Masayuki Hirabayashi (*Sumitomo Heavy Industries, Ltd.*)

17:45 **Thu-Af-Or23-06: Design and Test of a Curved Superconducting Dipole Magnet for Proton Therapy**
Lucas Brouwer (*Lawrence Berkeley National Laboratory*), Shlomo Caspi (-), Aurelio Hafalia (*Unknown*), Adrian Hodgkinson, Scott Myers, Jordan Taylor, Marcos Turqueti, Xiaorong Wang (*Lawrence Berkeley National Laboratory*) and Soren Prestemon (*LBNL*)

18:00 **Thu-Af-Or23-07: Magnetic design of superconducting toroidal gantry for hadron therapy**
Enrico Felcini (*CERN - EPFL*), Luca Bottura (*CERN*), Bertrand Dutoit (*EPFL*), Glyn Kirby, Jeroen Van Nugteren and Gijs De Rijk (*CERN*)

18:15 **Thu-Af-Or23-08: A Design Study on No-Insulation HTS Isochronous Cyclotron Magnet for Carbon Ion Therapy**
Jeonghwan Park (*Seoul National University*), Garam Hahn (*Pohang Accelerator Laboratory*), Soun Pil Kwon (*NFRI*), HyunJung Lee, Yong Chu (*National Fusion Research Institute*) and Seungyong Hahn (*Seoul National University*)

16:30 - 18:30 **Regency EF**

Thu-Af-Or24 - Diagnostics and Test Results of Coils

Session Moderators: Emanuela Barzi, Fermilab and Michael Parizh, GE Global Research

16:30 **Thu-Af-Or24-01: Diagnostics and control of superconducting magnets using diffuse field ultrasound**
Maxim Marchevsky and Soren Prestemon (*LBNL*)

17:00 **Thu-Af-Or24-02: Magnet diagnostic utilizing stray capacitance monitoring on a 2 m long CCT coil**
Emmanuele Ravaioli, Arjan Verweij, Franco Julio Mangiarotti, Gerard Willering, Glyn Kirby, Krzysztof Stachon, Mateusz Jakub Bednarek (*CERN*), Maxim Marchevsky (*Lawrence Berkeley National Laboratory*) and Vincent Jeremy Desbiolles (*CERN*)

17:15 **Thu-Af-Or24-03: Novel Characterization Technique to Visualize Local Defects in a REBCO Pancake Coil Winding**
Takanobu Kiss, Kohei Higashikawa, Shogo Ohta (*Kyushu University*), Yusuke Takarabe (*Kyushu Universit*), Kazutaka Imamura (*Kyushu University*), Hideaki Miura and Shoichi Yokoyama (*Mitsubishi Electric Corporation*)

17:30 **Thu-Af-Or24-04: "Thermal Eraser" to Mitigate Screening Current by Optimal Control on Temperature in an HTS Pancake Coil**
Jeseok Bang, Jaemin Kim, Uijong Bong, Jung Tae Lee (*Seoul National University*), Soobin An (*SeoulNationalUniversity*), Chaemin Im, Jeonghwan Park, Seong Hyeon Park (*Seoul National University*), So Noguchi (*Hokkaido University*) and Seungyong Hahn (*Seoul National University*)

17:45 **Thu-Af-Or24-05: 25 K performance of conduction-cooled solenoids wound from exfoliated filament YBCO cables**
Vyacheslav Solovyov and Paul Farrell (*Brookhaven Technology Group*)

18:00 **Thu-Af-Or24-06: Design and initial test results for a canted-cosine-theta dipole subscale magnet series**
Diego Arbelaez (*Lawrence Berkeley National Lab*), Soren Prestemon (*LBNL*), Lucas Brouwer, Daniel Dietderich (*Lawrence Berkeley National Laboratory*), Shlomo Caspi (-), Scott Myers (*Lawrence Berkeley National Laboratory*), Aurelio Hafalia (*Unknown*), Stephen Gourlay (*LBNL*), Marcos Turqueti and Maxim Marchevsky (*Lawrence Berkeley National Laboratory*)

18:15 **Thu-Af-Or24-07: Small solenoid made from round HTS superconducting cable**
Ján Šouc (*Institute of Electrical Engineering, Slovak Academy of Sciences*), Fedor Gömöry (*Slovak Academy of Sciences*), Michal Vojenčiak (*IEE, SAS*), Mykola Soloviov (*Institute of Electrical Engineering Slovak Academy of Sciences*) and Tomáš Kujovič (*IEE, SAS*)

FRIDAY, SEPTEMBER 27, 2019

08:00 - 09:45 **Regency AB**

Fri-Mo-Or25 - Accelerator Magnets - Miscellaneous

Session Moderators: Ramesh Gupta, BNL and Damien Simon, Université Paris-Saclay

08:00 **Fri-Mo-Or25-01: Progress in the development of superconducting undulators at the Advanced Photon Source**
Yury Ivanyushenkov, Joel Fuerst (*ANL*), Quentin Hasse, Matthew T. Kasa, Ibrahim Kesgin, Yuko Shiroyanagi and Efim Gluskin (*Argonne National Laboratory*)

08:15 **Fri-Mo-Or25-02: Construction and Cold Test of the Superferric Skew Quadrupole for HL-LHC**
Marco Statera (*INFN Milano - LASA*), Massimo Leone Sorbi (*Università degli Studi e INFN Milano (IT)*), Antonio Paccalini (*INFN Sezione di Milano (INFN)*), Pasini Alesandro (*INFN Milano - LASA*), Augusto Leone (*INFN Sezione di Milano (INFN)*), Carlo Uva, Danilo Felice Pedrini (*INFN Milano - LASA*), Francesco Broggi (*INFN - LASA Lab.*), Marco Prioli, Quadrio Mauro, Maurizio Todero (*INFN*

Milano - LASA), Samuele Mariotto (*University of Milan - INFN Milan*), Ezio Todesco, Andrea Musso (*CERN*), giovanni bellomo (*University of Milan*), Franco Alessandria (*INFN Milano - LASA*), Riccardo Umberto Valente (*LASA-INFN (Milano, Italy)*), Marco Campaniello (*SAES getters*), Marco Canetti, Fabrizio Gangini (*SAES Rial Vacuum*), Zanichelli Alessandro (*Rodofil*) and Paolo Manini (*SAES Getters*)

08:30 **Fri-Mo-Or25-03: Longitudinal gradient bend magnets for the upgrade of the Swiss Light Source storage ring**
Ciro Calzolaio, Marco Negrazus (*Paul Scherrer Institut*), Alexander Gabard (*Paul Scherrer Institute*), Serguei Sidorov (*Paul Scherrer Institut*), Philippe Lerch (*PSI - Paul Scherrer Institut*) and stephane sanfilippo (*Paul Scherrer Institut*)

08:45 **Fri-Mo-Or25-04: Fabrication and test of Bi-2212 Canted-Cosine-Theta coils**
Laura Garcia Fajardo (*Lawrence Berkeley National Laboratory*), Tengming Shen, Diego Arbelaez (*Lawrence Berkeley National Lab*), Lucas Brouwer (*Lawrence Berkeley National Laboratory*), Shlomo Caspi (-), Stephen Gourlay (*LBNL*), Aurelio Hafalia (*Unknown*), Maxim Marchevsky (*Lawrence Berkeley National Laboratory*), Ian Pong, Soren Prestemon (*LBNL*), Xiaorong Wang (*Lawrence Berkeley National Laboratory*), Ernesto Bosque (*National High Magnetic Field Laboratory*) and Lamar English (*Applied Superconductivity Center, National High Magnetic Field Laboratory, Florida State University*)

09:00 **Fri-Mo-Or25-05: Status of the CHART R&D Program for Superconducting Accelerator Magnets**
Bernhard Auchmann (*CERN*), Diego Arbelaez (*Lawrence Berkeley National Lab*), Lucas Brouwer (*Lawrence Berkeley National Laboratory*), Shlomo Caspi (-), Roland Felder (*PSI*), Jiani Gao (*PSI - Paul Scherrer Institut*), Barbara Gold (*PSI/ETHZ*), Giuseppe Montenero (*PSI*), stephane sanfilippo, Serguei Sidorov (*Paul Scherrer Institut*) and Theo Tervoort (*ETH Zurich*)

09:15 **Fri-Mo-Or25-06: Epoxy and quench training of Nb3Sn accelerator magnets**
Tengming Shen, Shijian Yin, Diego Arbelaez (*Lawrence Berkeley National Lab*), Lucas Brouwer (*Lawrence Berkeley National Laboratory*), Shlomo Caspi (-), Daniel Dietderich, Thomas Lipton (*Lawrence Berkeley National Laboratory*), Maxim Marchevsky (*Lawrence Berkeley National Lab. (US)*), Soren Prestemon (*LBNL*), Charlie Sanabria (*Lawrence Berkeley Laboratory*), James H. Swanson (*LBNL*), Steve Krave (*Fermilab*), Xingchen Xu (*Fermi National Accelerator Lab*) and Chiara Tarantini (*FSU*)

09:30 **Fri-Mo-Or25-07: Analysis of the transient mechanics behind superconducting accelerator magnet training**
Maxim Marchevsky (*Lawrence Berkeley National Laboratory*), Diego Arbelaez (*Lawrence Berkeley National Lab*), Lucas Brouwer (*Lawrence Berkeley National Laboratory*), Soren Prestemon (*LBNL*), Laurie Stephey, Mustafa Mustafa, Steve Farrell and FirstName Prabhat (*Lawrence Berkeley National Laboratory*)

08:00 - 09:30 **Regency CD**

Fri-Mo-Or26 - Fusion VIII: ITER

Session Moderators: Marco Breschi, University of Bologna and Maxim Marchevsky, LBNL

08:00 **Fri-Mo-Or26-01 [Invited]: Progress of ITER TF coil fabrication in Japan**
Norikiyo Koizumi (*QST*), Mio Nakamoto (-), Masahide Iguchi, Hideki Kajitani (*National Institutes for Quantum and Radiological Science and Te*) and Masataka Nakahira (*QST*)

08:30 **Fri-Mo-Or26-02: Progress on European ITER Toroidal Field Coil procurement: Cold Test and Insertion Work Package**
Boris Bellesia, Piergiorgio Aprili (*Fusion for Energy*), alessandro bonito oliva (*F4E*), Marc Jimenez, Alessandro Lo Bue, Eduard Viladiu (*Fusion For Energy*), Paolo Barbero, Marco Bolla and Francone Roberto (*SIMIC S.p.A.*)

08:45 **Fri-Mo-Or26-03: Current Centre Line integration in the manufacturing process of the ITER Toroidal Field Coils**
Marc Jimenez, Boris Bellesia, Jordi Amoros, Piergiorgio Aprili, Alessandro Bonito Oliva, Marc Cornelis, Alessandro Lo Bue (*Fusion For Energy*), Lionel Poncet (*ITER Organization*), Guim Pallas, Eduard Viladiu (*Fusion For Energy*), Emma Gautheron (*CERN*), Edoardo Pompa (*LATESYS*) and Santiago Tarrago (*EPFL*)

09:00 **Fri-Mo-Or26-04: Preparation of the ITER Central Solenoid Assembly**
Thierry Schild (*ITER IO*), Paul Libeyre, Andrew Bruton, Carl Cormany, Enrique Gaxiola (*ITER Organization*), Cornelius Jong (*ITER IO*), Neil Mitchell (-), Antony Mariani, Joseph Pallisa (*ITER Organization*), Wayne Reiersen (*PPPL/ORNL*), Nicolai Martovetsky, David Everitt (*ORNL*), Kevin Freudenberg (*Oak Ridge National Laboratory*), Travis Reagan (*US ITER Project*), David Vandergriff (*US ITER Project, Oak Ridge National Laboratory*), John Smith (*General Atomics*), Daniel Mullins, Robert Potts, Alan Stephens (*General Atomic*), Patrick Decool, Cyril Brun and Alexandre Torre (*CEA*)

08:00 - 10:00 **Regency EF**

Fri-Mo-Or27 - No-Insulation and Insulated REBCO Magnet Technology

Session Moderators: So Noguchi, Hokkaido University and Thomas Painter, NHMFL

08:00 **Fri-Mo-Or27-01: Current Status and Challenges in No-Insulation HTS Magnet Technology**
Seungyong Hahn (*Seoul National University*), Kwang Lok Kim, Kwangmin Kim (*National High Magnetic Field Laboratory*), Kabindra Bhattarai (*Florida State University*), Xinbo Hu (*ASC, NHMFL, FSU*), Thomas Painter (*NHMFL, FSU*), Iain Dixon (*NHMFL-FSU*), Jeseok Bang, Uijong Bong (*Seoul National University*) and David Larbalestier (*National High Magnetic Field Laboratory*)

08:15 **Fri-Mo-Or27-02: 30 T generation using an intra-layer no-insulation (LNI) REBCO coil in a 17 T LTS magnet**
Yu Suetomi (*RIKEN/Chiba University*), Taisuke Yoshida, Shunji Takahashi, Tomoaki Takao (*Sophia University*), Gen Nishijima, Hitoshi Kitaguchi (*National Institute for Materials Science*), Yasuyuki Miyoshi, Mamoru Hamada, Kazuyoshi Saito (*Japan Superconductor Technology, Inc.*), Renzhong Piao, Yoshinori Yanagisawa (*RIKEN*) and Hideaki Maeda (*RIKEN/Japan Science and Technology Agency*)

08:30 **Fri-Mo-Or27-03: Control of contact resistance of a long length REBCO conductor**
Jun Lu and Jeremy Levitan (*MS&T, NHMFL*)

08:45 **Fri-Mo-Or27-04: MI HTS Insert for Very High Field Magnet**
Xavier Chaud, Jungbin Song, Benjamin Borgnic, Francois Debray (*LNCMI-EMFL-CNRS, UGA, INSA, UPS*), Thibault Lécrevisse and Philippe Fazilleau (*IRFU, CEA, Université Paris-Saclay*)

09:00 **Fri-Mo-Or27-05: Thermal stability and mechanical characteristics of multiple no-insulation pancake coil system in high field magnets.**
Yawei Wang (*University of Bath*), Zixuan Zhu (-), Min Zhang and Weijia Yuan (*University of Strathclyde*)

09:15 **Fri-Mo-Or27-06: Field and Voltage transient behavior in REBCO HTS coils up to the limiting critical current: Comparison between Experiment and Modelling**
Blandine Rozier (*Université Grenoble Alpes*), Arnaud Badel (*Tohoku University*), André-Julien Vialle (*CNRS / Université Grenoble Alpes*), Tatsunori Okada (*Tohoku University*), Jérémie Cicéron (*Université Grenoble Alpes*), Kohki Takahashi (*Tohoku University*), Pascal Tixador (*Université Grenoble Alpes*) and Satoshi Awaji (*Tohoku University*)

09:30 **Fri-Mo-Or27-07: Screening current and hysteresis losses in the REBCO inserts of the 32 T magnet using a T-A homogenous model**
Edgar Berrospe (*Universidad Nacional Autonoma de Mexico*), Frederic Trillaud (*Universidad Nacional Autónoma de México*), Victor Zermeno (*NKT*), Francesco Grilli (*Karlsruhe Institute of Technology*), Mark Bird (*FSU*) and Hubertus Weijers (*NHMFL/FSU*)

09:45 **Fri-Mo-Or27-08: Influence of the screening current in a 3-T REBCO insert coil on the strain/stress distribution under a 15-T background magnetic field**
Yufan Yan (*Tsinghua University*), Timing Qu (*State Key Laboratory of Tribology, Department of Mechanical Engineering, Tsinghua University*), Mingzhi Guan (*The Institute of Modern Physics, Chinese Academy of Sciences*), Canjie Xin (*The Institute of Modern Physics of Chinese Academy of Science, Lanzhou*), Huajun Liu (*Chinese Academy of Sciences*) and Yunfei Tan (*High Magnetic Field Laboratory, CAS*)

10:30 - 11:15 **Regency Ballroom**

Friday Plenary 1

Session Moderators: Michael Parizh, GE Global Research

10:30 **Fri-Mo-PL6-01: Commercialization of Superconducting Technologies - CFS, MIT and High-field Fusion**
Brandon Sorbom (*Commonwealth Fusion Systems*)

11:15 - 12:00 **Regency Ballroom**

Friday Plenary 2

Session Moderators: Gen Nishijima, National Institute for Materials Science

11:15 **Fri-Mo-PL7-01: Recent Advances in Ultra-High Field Magnet Technology**
Mark Bird *(NHMFL*)

Closing & MT27 Announcement

13:15 – 16:15
TRIUMF Lab Tour

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NOTES

MT-26 Program - Schedule at a Glance

August 27, 2019

****Unless otherwise noted, all technical sessions and social events are taking place at the Hyatt Regency Vancouver downtown, Level 2 and Level 3.****

Sunday, 9/22/19

Registration
14:00 - 20:00
Level 2

Welcome Reception
18:30 - 20:30
Level 3, Regency Ballroom

Monday, 9/23/19

Exhibits Open
09:00 - 16:30
Level 2 and Level 3

Welcome: Jonathan Bagger

Plenary: Herman ten Kate
SUPER-Conductors for Successful Magnets
08:00 - 08:50 | Level 3, Regency Ballroom

IEEE Awards
08:50 - 09:15

Poster Sessions
(with coffee break)
09:15 - 11:15
Level 2 and Level 3

Oral Sessions
11:15 - 12:45
Level 3, Regency AB, CD, EF

Lunch
12:45 - 14:30

Poster Sessions
(with coffee break)
14:30 - 16:30
Level 2 and Level 3

Oral Sessions
16:30 - 18:00
Level 3, Regency AB, CD, EF

Exhibitor Reception
18:00 - 20:00
Level 2 and Level 3

Tuesday, 9/24/19

Exhibits Open
08:30 - 16:00
Level 2 and Level 3

Plenary: Helene Felice
Advances in Nb_3Sn Superconducting Accelerator Magnets
08:00 - 08:45 | Level 3, Regency Ballroom

Poster Sessions
(with coffee break)
08:45 - 10:45
Level 2 and Level 3

Oral Sessions
10:45 - 12:45
Level 3, Regency AB, CD, EF

Lunch
12:45 - 14:00

Poster Sessions
(with coffee break)
14:00 - 16:00
Level 2 and Level 3

Special Session
Magnet Technology and Conductor for Future High-field Applications
16:00 - 18:30
Level 3, Regency Ballroom AB

Wednesday, 9/25/19

Exhibits Open
09:00 - 16:00
Level 2 and Level 3

Plenary: Alessandro Bonito-Oliva
Toward Completion and Delivery of the First EU ITER Magnets
08:00 - 08:45 | Level 3, Regency Ballroom

Young Scientists Plenary
08:45 -09:30
Level 3, Regency Ballroom

Poster Sessions
(with coffee break)
09:30 - 11:15
Level 2 and Level 3

Oral Sessions
11:15 - 12:45
Level 3, Regency AB, CD, EF

Lunch
12:45 - 14:00

Poster Sessions
(with coffee break)
14:00 - 16:00
Level 2 and Level 3

Oral Sessions
16:00 - 18:00
Level 3, Regency AB, CD, EF

Banquet
18:30 - 23:00

Fairmont Hotel Downtown
(across the street)
Pacific & BC Ballrooms

Thursday, 9/26/19

Plenary: Timothy Coombs
Advances in Superconducting Rotating Machinery
08:00 - 08:45 | Level 3, Regency Ballroom

Poster Sessions
(with coffee break)
08:45 -10:45
Level 2 and Level 3

Oral Sessions
10:45 - 12:45
Level 3, Regency AB, CD, EF

Lunch
12:45 - 14:00

Oral Sessions
14:00 - 16:00
Level 3, Regency AB, CD, EF

Coffee Break: 16:00 - 16:30

Oral Sessions
16:30 - 18:30
Level 3, Regency AB, CD, EF

Friday, 9/27/18

Oral Sessions
08:00 - 10:00
Level 3, Regency AB, CD, EF

Coffee Break: 10:00 - 10:30

Plenary: Brandon Sorbom
Commercialization of Superconducting Technologies - CFS, MIT and High-field Fusion
10:30 - 11:15 | Level 3, Regency Ballroom

Plenary: Mark Bird
Recent Advances in Ultra-High Field Magnet Technology
11:15 - 12:00 | Level 3, Regency Ballroom

Closing & MT27 Announcement

TRIUMF Lab Tour
13:15 - 16:15
13:15 - busses load at the Hyatt *(Melborne Street Entrance)*
13:30 - departure
14:00 - tour
15:15 - busses load at TRIUMF
15:30 - departure

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