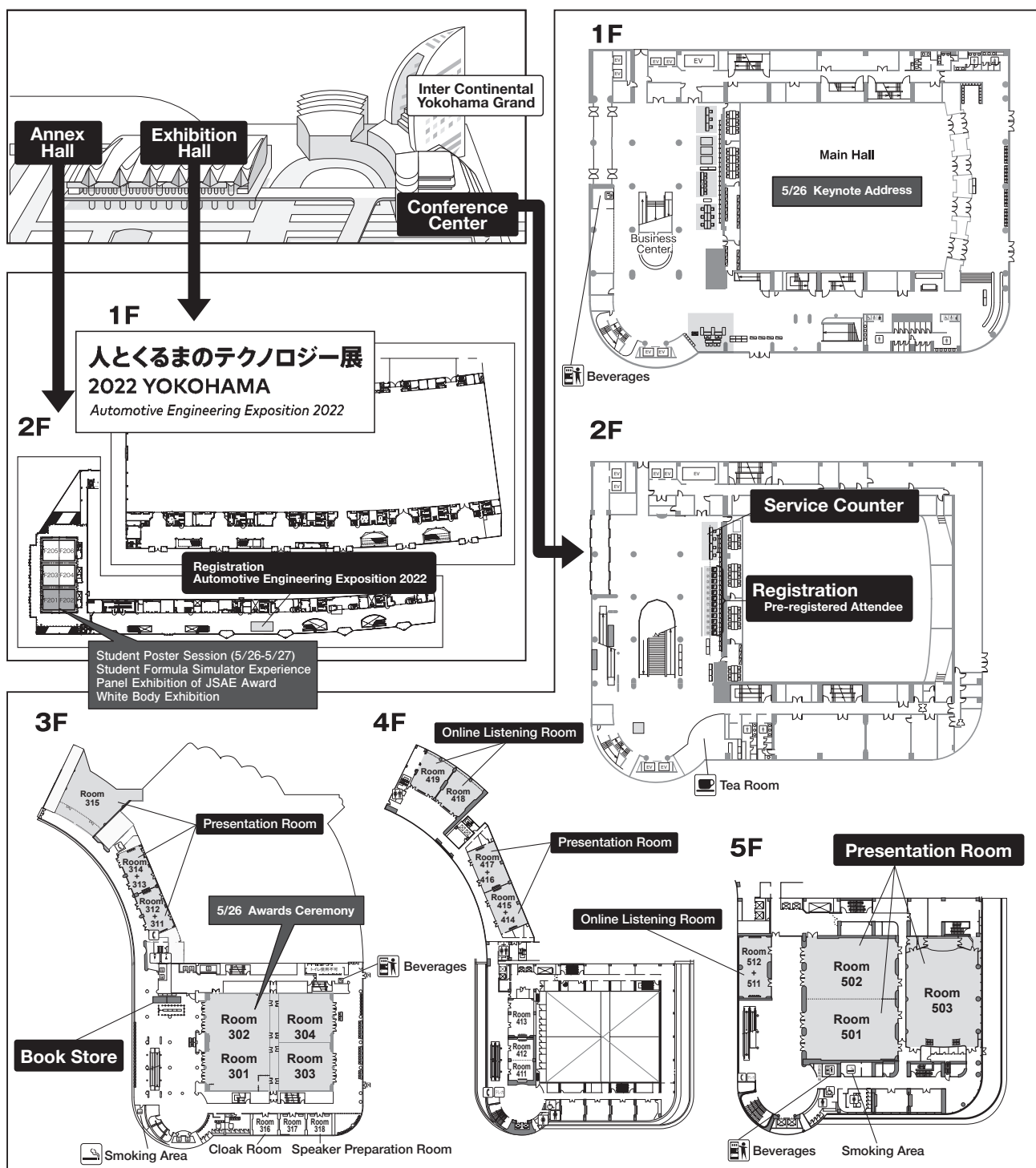


2022 JSAE Annual Congress (Spring)

Wednesday, May 25 – Friday, May 27 2022 / Pacifico Yokohama

Final Program

Floor Map



2022 JSAE Annual Congress (Spring)

Period : Wednesday, May 25 to Friday, May 27, 2022

Venue : PACIFICO YOKOHAMA

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Wednesday, May 25	12-20
Thursday, May 26.....	21-24
Friday, May 27	25-32

Wednesday, May 25 Congress Timetable

Room							
Pacifico Yokohama Conference Center							
	301 (3F)	302 (3F)	303 (3F)	304 (3F)	311+312 (3F)	313+314 (3F)	315 (3F)
9:30	Research on the Recognition Technology Required for Automated Driving Technology I 001 <u>002</u> <u>003</u> 004 006 No. 1 (OS) No. of presentation: 5 11:35	Interface between Design (Styling) and Technology 016 017 018 <u>019</u> No. 4 (OS) No. of presentation: 4	Vehicle Dynamics and Control I 025 026 027 028 No. 6 (OS) No. of presentation: 4	Theoretical Design of PMSMs for Traction Motors 039 040 041 042 No. 10 (OS) No. of presentation: 4	Hydrogen-Related Problems of Automotive Materials 051 052 053 10 min. Break 054 055 056 057 No. 13 (OS) No. of presentation: 7	MBD Guaranteed for Compatibility and Distribution by International Standard I -Innovation Support Technology through Collaboration between Organizations- 062 063 064 10 min. Break 065 066 067 No. 15 (OS) No. of presentation: 6	Evaluation and Sensing of Driver's State 077 <u>078</u> 079 10 min. Break 080 081 082 No. 18 (OS) No. of presentation: 6
13:00	Research on the Recognition Technology Required for Automated Driving Technology II 007 008 009 010 No. 2 (OS) No. of presentation: 4	Exhaust Emission Catalyst System —PM elimination for DPF & GPF— 020 <u>021</u> <u>022</u> 023 024 No. 5 (OS) No. of presentation: 5	Vehicle Dynamics and Control II 029 030 031 No. 7 (OS) No. of presentation: 3	Accidental Injury Prediction and Prevention, Medicine -Medical and Engineering Research for Casualties Reduction- 043 044 045 046 047 No. 11 (OS) No. of presentation: 5	12:35 13:35 Vehicle Development -Production/CAE- Optimization/Parts- 058 059 <u>060</u> 061 No. 14 No. of presentation: 4	12:10 13:10 MBD Guaranteed for Compatibility and Distribution by International Standard II -Innovation Support Technology through Collaboration between Organizations- 068 069 070 071 072 No. 16 (OS) No. of presentation: 5	12:10 13:10 Driver Behavior, Education, and Model 083 084 085 10 min. Break 086 087 <u>088</u> No. 19 (OS) No. of presentation: 6
15:00	Research on the Recognition Technology Required for Automated Driving Technology III 011 <u>012</u> 013 014 015 No. 3 (OS) No. of presentation: 5	14:15 14:55 No. 8 (OS) No. of presentation: 4	Vehicle Dynamics and Control III 032 033 034 035 No. 8 (OS) No. of presentation: 4	14:15 14:55 Advanced Power Electronics Component Technologies for Future Vehicles 048 049 <u>050</u> No. 12 (OS) No. of presentation: 3	15:15 15:15 No. 14 No. of presentation: 4	15:15 15:55 The Latest Technology in Thermal Management and Fluid Dynamics Contributing to the Mobility Evolution -Heat and Fluid Flow Control, Advanced Thermal Management and Design- 073 <u>074</u> 075 <u>076</u> No. 17 (OS) No. of presentation: 4	15:50 16:30 Human Factors and HMI in Driver Support and Automated Driving I 089 090 091 092 093 No. 20 (OS) No. of presentation: 5
17:00	17:00	17:00	17:40	17:40	17:40	17:35	18:35
18:00							

- * Time allocated for a presentation is 25 minutes; 15 minutes for presentation and 10 minutes for Q&A.
- * Program subject to change.
- * Boxed numbers denote English presentations.
- * Online participation is available for each session.

						Annex Hall F201+F202	Exhibition Hall
414+415 (4F)	416+417 (4F)	501 (5F)	502 (5F)	503 (5F)	Main Hall (1F)	Automotive Engineering Exposition 2022 Yokohama	
Wireless Power Transfer Technologies I -Static and Dynamic Wireless Power Transfer-094 095 096 No. 21 (OS) No. of presentation: 3 10:45 12:10	The Advanced Manufacturing Technology in Next Generation 107 108 109 10 min. Break 110 111 112 No. 24 (OS) No. of presentation: 6 12:10 13:10 13:50 15:05 15:30 17:45 18:10	Lubricants, Lubrication Technology and Tribology 123 124 125 126 127 No. 27 (OS) No. of presentation: 5 11:35 12:35 14:15 14:55 17:00	The Latest Noise and Vibration Technologies and Sound Design Technologies I 137 138 139 140 141 No. 30 (OS) No. of presentation: 5 11:35 12:35 14:15 14:55 16:10	Advanced Gasoline Engine Systems and Technologies I 149 150 151 152 No. 33 (OS) No. of presentation: 4 11:10 12:10 13:50 14:30 16:10			
Wireless Power Transfer Technologies II -Static and Dynamic Wireless Power Transfer-097 098 099 100 No. 22 (OS) No. of presentation: 4 13:50 15:05	Advanced Technologies for Automotive Body Structure I 113 114 115 116 No. 25 (OS) No. of presentation: 4 14:50 15:30	The New Technology for the Drivetrain Systems I 128 129 130 131 No. 28 (OS) No. of presentation: 4 14:15 14:55	The Latest Noise and Vibration Technologies and Sound Design Technologies II 142 143 144 145 No. 31 (OS) No. of presentation: 4 14:15 14:55	Advanced Gasoline Engine Systems and Technologies II 153 154 155 156 No. 34 (OS) No. of presentation: 4 13:50 14:30			
Electric Road System (Dynamic Charge and Power Supply) 101 102 103 10 min. Break 104 105 106 No. 23 (OS) No. of presentation: 6 17:45	Advanced Technologies for Automotive Body Structure II 117 118 119 10 min. Break 120 121 122 No. 26 (OS) No. of presentation: 6 18:10	The New Technology for the Drivetrain Systems II 132 133 134 135 136 No. 29 (OS) No. of presentation: 5 17:00	The Latest Noise and Vibration Technologies and Sound Design Technologies III 146 147 148 No. 32 (OS) No. of presentation: 3 16:10	Advanced Gasoline Engine Systems and Technologies III 157 158 159 160 No. 35 (OS) No. of presentation: 4 16:10			

Engine·After treatment·Powertrain	Body·Chassis·Production machining	ITS·Human Engineering	Parts·Materials	CAE/NV·Measurement·Fluid	HV·PHV·EV	Safety	Others
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Thursday, May 26 Congress Timetable

Room	Pacifico Yokohama Conference Center							
	301 (3F)	302 (3F)	303 (3F)	304 (3F)	311+312 (3F)	313+314 (3F)	315 (3F)	
9:30			Cars That Think and Communicate -Beyond Autonomous Driving- 161 162 163 164 No. 36 (OS) No. of presentation: 4 11:10	New Development of Model Distribution and Model Based Development I 169 170 171 No. 38 (OS) No. of presentation: 3 10:45	Fuel Cell Vehicle -Fuel Cell Stacks, Systems and Components- 177 178 179 180 181 No. 40 (OS) No. of presentation: 5 11:35		Human Factors and HMI in Driver Support and Automated Driving II 182 183 184 185 186 No. 41 (OS) No. of presentation: 5 11:35	
13:00	13:00	13:00	The New Frontier in Autonomous Vehicle's Cybersecurity 165 166 167 168 No. 37 (OS) No. of presentation: 4 15:05	12:10 New Development of Model Distribution and Model Based Development II 172 173 174 175 176 No. 39 (OS) No. of presentation: 5 14:15		12:35 Vehicle Motion Control 187 188 189 No. 42 No. of presentation: 3 13:50		
15:00	14:10							
17:00								
18:00								
			72nd JSAE Award 13th Engineering Education Award JSAE Engineering Level Accreditation 2021 Excellent Technical Paper Presentation Awards					

- * Time allocated for a presentation is 25 minutes; 15 minutes for presentation and 10 minutes for Q&A.
- * Program subject to change.
- * Boxed numbers denote English presentations.
- * Online participation is available for each session.

						Annex Hall F201+F202	Exhibition Hall
414+415 (4F)	416+417 (4F)	501 (5F)	502 (5F)	503 (5F)	Main Hall (1F)		
<p>Social Change and Next Generation Mobility I 190 191 192 193</p> <p>No. 43 (OS) No. of presentation: 4</p> <p>11:10</p>	<p>New Development of The Energy Storage System Technology I 197 198 199 200 201</p> <p>No. 45 (OS) No. of presentation: 5</p> <p>11:35</p>	<p>Driver Model 206 207 208</p> <p>No. 47 No. of presentation: 3</p> <p>10:45</p>	<p>The Latest Noise and Vibration Technologies and Sound Design Technologies IV 214 215 216 217 218</p> <p>No. 49 (OS) No. of presentation: 5</p> <p>11:35</p>	<p>Advanced Gasoline Engine Systems and Technologies IV 225 226 227 228 229</p> <p>No. 51 (OS) No. of presentation: 5</p> <p>11:35</p>			
<p>Social Change and Next Generation Mobility II 194 195</p> <p>No. 44 (OS) No. of presentation: 2</p> <p>13:00</p>	<p>New Development of The Energy Storage System Technology II 202 203 204 205</p> <p>No. 46 (OS) No. of presentation: 4</p> <p>14:15</p>	<p>Advanced Diesel Engine Systems and Technologies 209 210 211 212 213</p> <p>No. 48 (OS) No. of presentation: 5</p> <p>14:15</p>	<p>The Latest Noise and Vibration Technologies and Sound Design Technologies V 219 220 221 222 223 224</p> <p>10 min. Break</p> <p>No. 50 (OS) No. of presentation: 6</p> <p>15:15</p>	<p>The Latest Technology Trends in Automotive Energy 230 231 232</p> <p>No. 52 (OS) No. of presentation: 3</p> <p>13:50</p>			
						<p>10:00</p> <p>Student Poster Session Part I</p> <p>11:40</p>	<p>Automotive Engineering Exposition 2022 Yokohama</p>
						<p>13:30</p> <p>Student Poster Session Part II</p> <p>15:10</p>	
						<p>17:00</p> <p>Keynote Address</p> <p>18:00</p>	
							<p>18:00</p>

Speaker: Takafumi Anegawa
(Tokyo Electric Power Company Holdings, Inc.)

- Engine·After treatment·Powertrain
- Body·Chassis·Production machining
- ITS·Human Engineering
- Parts·Materials
- CAE/NV·Measurement·Fluid
- HV·PHV·EV
- Safety
- Others

Detail of technical sessions: page 12-32.

Friday, May 27 Congress Timetable

Room							
Pacifico Yokohama Conference Center							
	301 (3F)	302 (3F)	303 (3F)	304 (3F)	311+312 (3F)	313+314 (3F)	315 (3F)
9:30	Active Safety and Advanced Driver Assistance Systems I 233 <u>234</u> 235 236 No. 53 (OS) No. of presentation: 4 11:10	Automated Driving/System Control 247 248 249 250 251 No. 56 No. of presentation: 5 11:35	Crash Safety <u>260</u> <u>261</u> 262 No. 59 (OS) No. of presentation: 3 10:45		New Technologies for Advanced Measurements and Diagnostics I 276 277 278 279 No. 63 (OS) No. of presentation: 4 11:10		Dynamics, Control and Safety of Two-wheeled Vehicles -Motorcycles, Bicycles, and PMV- 287 288 289 290 291 No. 66 (OS) No. of presentation: 5 11:35
13:00	Active Safety and Advanced Driver Assistance Systems II 237 238 239 240 241 No. 54 (OS) No. of presentation: 5 14:15	Automotive Control and Modeling -New Issues and New Approaches- <u>252</u> 253 <u>254</u> 255 256 No. 57 (OS) No. of presentation: 5 14:40	Analysis of Real World Accidents and Safety Measures -Causes of Accident and Safety Issues- 263 264 <u>265</u> <u>266</u> 267 No. 60 (OS) No. of presentation: 5 14:15	The Latest Technology in Thermal Management and Fluid Dynamics Contributing to the Mobility Evolution -Aerodynamics and Aeroacoustics- <u>268</u> <u>269</u> <u>270</u> No. 61 (OS) No. of presentation: 3 13:25	New Technologies for Advanced Measurements and Diagnostics II 280 281 282 No. 64 (OS) No. of presentation: 3 14:05		Engineering-Ethics Today 292 293 294 295 No. 67 (OS) No. of presentation: 4 14:15
15:00	Active Safety and Advanced Driver Assistance Systems III 242 243 244 245 <u>246</u> No. 55 (OS) No. of presentation: 5 17:00	ADAS Scenario and Safety <u>257</u> <u>258</u> <u>259</u> No. 58 No. of presentation: 3 16:35		The Latest Technology in Thermal Management and Fluid Dynamics Contributing to the Mobility Evolution -Computational Fluid Dynamics (CFD)- 271 272 273 274 <u>275</u> No. 62 (OS) No. of presentation: 5 16:10	New Technologies for Advanced Measurements and Diagnostics III 283 284 285 286 No. 65 (OS) No. of presentation: 4 15:45		
17:00							
18:00							

- * Time allocated for a presentation is 25 minutes; 15 minutes for presentation and 10 minutes for Q&A.
- * Program subject to change.
- * Boxed numbers denote English presentations.
- * Online participation is available for each session.

						Annex Hall F201+F202	Exhibition Hall
414+415 (4F)	416+417 (4F)	501 (5F)	502 (5F)	503 (5F)	Main Hall (1F)		
Material I 296 297 298 ----- 10 min. Break ----- 299 300 301 No. 68 No. of presentation: 6 12:10	Concept Test and Cabin Environment of Vehicle [310] 311 312 313 314 No. 71 No. of presentation: 5 11:35	xEV I 324 325 326 327 328 No. 74 (OS) No. of presentation: 5 11:35	Gaseous-Fuel Engines and Carbon Neutral Technology for Gaseous-Fuel [339] [340] [341] 342 No. 77 (OS) No. of presentation: 4 11:10	The Latest Noise and Vibration Technologies and Sound Design Technologies VI 353 354 355 No. 80 (OS) No. of presentation: 3 10:45			
						10:00 Student Poster Session Part III 11:40	Automotive Engineering Exposition 2022 Yokohama
						12:10 Student Poster Session Part III 11:40	
						12:35 Student Poster Session Part III 11:40	
						13:10 Student Poster Session Part III 11:40	
Material II 302 [303] 304 305 No. 69 No. of presentation: 4 14:50	Electronics and Control [315] [316] [317] ----- 10 min. Break ----- 318 [319] 320 No. 72 No. of presentation: 6 15:15	xEV II 329 330 331 ----- 10 min. Break ----- 332 333 [334] No. 75 (OS) No. of presentation: 6 15:15	Research Trends in Carbon-Neutral Fuel for CI Engines 343 [344] 345 346 [347] No. 78 (OS) No. of presentation: 5 14:15	Technologies of Evaluations and Measures for Road Traffic Noise I 356 357 358 359 No. 81 (OS) No. of presentation: 4 13:50			
						13:30 Student Poster Session Part IV 15:10	
						14:15 Student Poster Session Part IV 15:10	
						14:30 Student Poster Session Part IV 15:10	
						14:55 Student Poster Session Part IV 15:10	
Material III 306 307 308 309 No. 70 No. of presentation: 4 17:10	Tire/Road Characteristics, Contact Properties and Related Technologies -Tire Mechanisms Toward the Future- 321 322 323 No. 73 (OS) No. of presentation: 3 17:10	xEV III [335] 336 337 338 No. 76 (OS) No. of presentation: 4 17:35	Effect of Automobile Emission on Atmospheric Environment [348] 349 350 351 352 No. 79 (OS) No. of presentation: 5 17:00	Technologies of Evaluations and Measures for Road Traffic Noise II 360 361 362 No. 82 (OS) No. of presentation: 3 15:45			
						15:10 Student Poster Session Part IV 15:10	
						15:30 Student Poster Session Part IV 15:10	
						15:55 Student Poster Session Part IV 15:10	
						17:00 Student Poster Session Part IV 15:10	

Engine·After treatment· Powertrain	Body·Chassis· Production machining	ITS·Human Engineering	Parts·Materials	CAE/NV· Measurement·Fluid	HV·PHV·EV	Safety	Others
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Detail of technical sessions: page 12-32.

INFORMATION

<https://www.jsae.or.jp/2022haru/english/>

All events are in Japanese unless otherwise specified

Events	Notes	May 25	May 26	May 27
Technical Sessions	Registration Required / Charged	●	●	●
72nd JSAE Engineering Award 13th Engineering Education Award JSAE Engineering Level Accreditation 2021 Excellent Technical Paper Presentation Awards	Free *Priority will be given to the admission invitee.		●	
Keynote Address	Registration Required / Free		●	
Automotive Engineering Exposition 2022 Yokohama	Registration Required / Free	●	●	●
Student Poster Session	Registration Required / Free		●	●

Free Wi-Fi	SSID: FREE-PACIFICO PASSWORD: none
Smoking Area	3F, 5F, Conference Center
Beverages	1F, 3F, 5F, Conference Center
Convenience Store	1F, 2F, Exhibition Hall
Business Center	1F, Conference Center / 2F, Exhibition Hall

※ Please see the map on the front page.

Opening Hours

Wednesday, May 25

8:00

Registration	2F Entrance Hall – Pre-registered Attendee	18:00
Service Counter	2F Entrance Hall – Pre-registered Attendee	18:00
Cloak Room	3F 316	18:45
Online Listening Room	4F 418, 419 5F 511+512	18:45
Speaker Preparation Room	3F 318	16:30
Book Store	3F	10:00~17:00

Thursday, May 26

8:30

Registration	2F Entrance Hall – Pre-registered Attendee	18:00
Service Counter	2F Entrance Hall – Pre-registered Attendee	18:00
Cloak Room	3F 316	18:15
Online Listening Room	4F 418, 419 5F 511+512	18:15
Speaker Preparation Room	3F 318	13:00
Book Store	3F	10:00~16:00

Friday, May 27

8:30

Registration	2F Entrance Hall – Pre-registered Attendee	18:00
Service Counter	2F Entrance Hall – Pre-registered Attendee	18:00
Cloak Room	3F 316	18:00
Online Listening Room	4F 418, 419 5F 511+512	18:00
Speaker Preparation Room	3F 318	16:00
Book Store	3F	10:00~16:30

※ Please see the map on the front page.

OTHER EVENTS

Award Ceremony

72nd JSAE Engineering Award
13th Engineering Education Award
JSAE Engineering Level Accreditation
2021 JSAE Award Congress Excellent Technical Paper Presentation Awards

Thursday, May 26 13:00 ~ 14:10 301+302, 3F, Conference Center

(Language: Japanese)

Keynote Address

Registration Required/Free Admission

Thursday, May 26, 17:00 ~ 18:00 Main Hall, 1F, Conference Center

(Language: Japanese)

Takafumi Anegawa

Fellow, Tokyo Electric Power Company Holdings, Inc.

Innovation beyond the industries

To mitigate the impacts of climate change, both the automobile industry and the energy industry are required drastic change. Innovation through the collaboration of both industries needs to solve this difficult problem.

We are now promoting the effective use of batteries loaded on EVs for the mass introduction of renewable energy. Furthermore, there are great expectations for the engineering capabilities of the automobile industry in the development of wind power generation.



Student Poster Session

Registration Required/Free Admission

Thursday, May 26 ~ Friday, May 27 Annex Hall F201, F202

(Language: Japanese)

* To enter the Annex Hall, you need the name card for Technical Sessions or Exposition.

Automotive Engineering Exposition 2022 Yokohama

Registration Required/Free Admission

Wednesday, May 25 ~ Friday, May 27 10:00 ~ Exhibition Hall

Prior registration is required to participate in the exposition.

Please check the exposition website for details.



International Conferences by JSAE

AVEC'22

15th International Symposium on Advanced Vehicle Control

September 12-16, 2022

Kanagawa Institute of Technology,
Kanagawa, Japan



Early Registration :
Jun. 06, 2022

<https://avec2022.org>
avec22@or.knt.co.jp



EVTeC 2023

6th International Electric Vehicle Technology Conference

Society of Automotive Engineers of Japan (JSAE) is pleased to announce that the 6th International Electric Vehicle Technology Conference will take place in Yokohama, Japan & Online (Hybrid Event), 2023.

EVTeC is seeking to provide a high-level technical and academic knowledges on the EV related technologies and the forthcoming future society. EVTeC 2023 will be asking to share your research findings, technology advances, strategies and perspectives.

EVTeC will call for abstracts from early summer 2022



IMPORTANT DATES (TBA)

Special Session Proposal by	End of Oct. 2022
Deadline for Extended Summary	End of Oct. 2022
Notification of Acceptance	End of Jan. 2023
Deadline for Final Manuscript	End of Mar. 2023

DATE
22-24 May 2023

VENUE
Pacifico Yokohama, Japan & Online (Hybrid Event)

Organized by
Society of Automotive Engineers of Japan, Inc.

Steering Committee

- Chair: Prof. Keiichiro Kondo, Waseda Univ.
- Vice Chairs: Prof. Kan Akatsu, Yokohama National Univ. Toshifumi Takaoka, TOYOTA MOTOR Corp.
- Program Chair: Prof. Kenji Natori, Chiba Univ.
- Delegation from OEMs, suppliers and academia



Digital and In-Person

SETC 2022

The **26th** SMALL POWERTRAINS AND ENERGY SYSTEMS TECHNOLOGY CONFERENCE



Preliminary Program is now available !

Oct. 31 – Nov. 3, 2022
In Himeji, Japan and Online

JSAE Annual Congress Spring, Technical Session Program

- This program is based on the data as of April 27, 2022.
- The abstracts of the presentations are available on the timetable of the website.
[https://www.jsae.or.jp/2022haru/english/program.html]
- <OS> is the organized session focused on the specific themes.
- There may be withdrawn presentations.
- Boxed numbers denote English presentations.

301 (3F)

[9:30~11:35]

1 Research on the Recognition Technology Required for Automated Driving Technology I
<OS> Akisue Kuramoto (Tokyo Institute of Technology)

001 Visualization of Evidence by AI Object Detection Results using 3D Point Clouds in Autonomous Driving
Michihiro Kuroki · Shinya Tanaka · Kenji Muto · Hiroshi Inou (DENSO)

002 Basic Study on Detecting Vehicles Outside the Field of View using Acoustic Signals
Masao Ishihama (Meiji University)
Motohiro Kanda · Shouji Yuasa (System Plus)

003 Acoustic Wave Propagation Analysis for Studying Possibilities of Detecting Vehicles Outside the Field of View
Naoto Hagino (Kanagawa Institute of Technology)
Masao Ishihama (Meiji University)

004 Deep Learning Based Early Recognition of Emergency Vehicles using On-Broad Microphones
Chisato Takatsu · Keisuke Yoneda · Naoki Suganuma (Kanazawa University)

006 Investigation on the Validation Method of Perception Performance of the Radar on an Automated Driving
Masao Nakagawa · Hiroyuki Yamamoto (NALTEC)

[12:35~14:15]

2 Research on the Recognition Technology Required for Automated Driving Technology II
<OS> Junichi Meguro (Meijo University)

007 Utilizing Human Social Norms for Multimodal Trajectory Forecasting via Group-based Forecasting Module
Hiroaki Minoura · Tsubasa Hirakawa · Takayoshi Yamashita · Hironobu Fujiyoshi (Chubu University)

008 Improving Clustering Accuracy for Object Tracking based on DBSCAN and IoU Techniques
Hisashi Nakada · Keisuke Yoneda · Naoki Suganuma (Kanazawa University)

009 Time-Series Optimization Models Based on MVL-Fusion for Low-Resolution 3D LiDAR
Shuncong Shen · Mai Saito · Toshio Ito (Shibaura Institute of Technology)

010 Road Profile Analysis based on Elevation Map with LiDAR for Autonomous Driving
Kosuke Suzuki · Ryo Yanase · Keisuke Yoneda · Naoki Suganuma (Kanazawa University)

[14:55~17:00]

3 Research on the Recognition Technology Required for Automated Driving Technology III
<OS> Takayoshi Yamashita (Chubu University)

011 Dead Reckoning Performance Improvement by Optimizing Heading Angle using RTK-FIX Solution in Satellite Invisible Environment
Kaito Kondo · Kazumasa Kawata · Miyu Otake · Yoshiki Atsumi · Takumi Ukai · Junichi Meguro (Meijo University)

012 Robustness Evaluation of Vehicle Localization in 3D Map using Convergence of Scan Matching
Yuki Kitsukawa (Nagoya University/Map IV)
Tatsuya Minami (Meijo University)
Yudai Yamazaki (Map IV)
Junichi Meguro (Meijo University)
Eijiro Takeuchi · Yoshiki Ninomiya (Tier IV/Nagoya University)
Shinpei Kato (The University of Tokyo)
Masato Eda (Nagoya University)

013 Map Generation and Localization based on Height Variance of LiDAR Point Cloud for Autonomous Driving
Ryo Yanase · Miya Kawaseki · Mohammad Aldibaja · Keisuke Yoneda · Naoki Suganuma (Kanazawa University)

014 Autonomous Vehicle Localization using Magnetic Markers Placed in Grid-Like Patterns
Kyoya Ishii · Keisuke Shimono · Yoshihiro Suda (The University of Tokyo)
Takayuki Ando · Tomohiko Nagao · Michiharu Yamamoto (Aichi Steel)
Hirotaka Mukumoto · Masaya Segawa (Advanced Smart Mobility)

015 High Accuracy RTK-GNSS/IMU Focusing on Acceleration Error Correction
Aoki Takanose (Nagoya University)
Kaito Kondo · Yoshiki Atsumi · Junichi Meguro (Meijo University)
Kazuya Takeda (Nagoya University)

302 (3F)

[9:30~11:10]

4 Interface between Design (Styling) and Technology
<OS> Masahito Takahashi (UD Trucks)

016 Fusion of "Design" and "Function" based on Decorative Film
Masato Osaki (Nissha)

- 017 Initiatives for Locally Produced and Locally Consumed Mobility
Kazuhiko Saito (Nagaoka Institute of Design)
- 018 Vintage Styling and Design Development of Motorcycles
Seiichi Ino (Kawasaki Motors)
- 019 ShyTech Displays
 -High Quality User Experience Content When and Where Needed-
Andreas Brueninghaus · Juergen Baethis · Kai Hohmann · Jochen Moeller (Continental Automotive)

【12:10~14:15】

5 Exhaust Emission Catalyst System
 -PM elimination for DPF & GPF-
 <OS> Masaru Ogura (The University of Tokyo)

- 020 Numerical Calculation of PM Trapping and Oxidation of Particulate Filter
 -Evaluation of catalyst loading position dependence-
Maki Nakamura · Koji Yokota · Masakuni Ozawa (Nagoya University)
- 021 Manufacturing of Three-way Catalyst Membrane Particulate Filter and Porosity Measurement using Electron Microscopy Image Analysis
Phyozin Koko · Teerapat Suteerapongpun · Katsunori Hanamura (Tokyo Institute of Technology)
- 022 Thin Film Ceria using RF Sputtering on Metal Fibers for Catalyzing Diesel Soot Oxidation
Ban-seok Oh · Preechar Karin · Mek Srilomsak (KMUTT) · Watcharin Po-ngen (King Mongkut's University of Technology North Bangkok) · Sompong Srimanosaowapak · Witthawat Wongpisan (MTEC) · Katsunori Hanamura (Tokyo Institute of Technology)
- 023 Study on the Methods of Catalytic Activity Evaluation, Accelerated Deterioration, and Reactivation of Diesel Exhaust Gas Catalysts
Junko Uchisawa · Akira Obuchi · Asuka Yamamoto · Shunsuke Suzuki · Norifumi Mizushima (AIST)
- 024 Evaluation of CO₂ Sorption Characteristics of Metal-Organic Frameworks
Shigeru Yoshimoto · Hiroyuki Hosomi · Masaaki Takeda (Toray Research Center)

303 (3F)

【9:30~11:10】

6 Vehicle Dynamics and Control I
 <OS> Makoto Yamakado (Kanagawa Institute of Technology)

- 025 Reduction of Longitudinal Vibration by Side-View Arrangement of Suspension
Kazuaki Sugiyama · Shingo Koumura · Hiroki Kanbe · Tsuyoshi Yoshimi (Toyota Motor)
- 026 Analysis of Unsprung Mass Vibration of Rigid Suspension during Vehicle Starting
Shingo Koumura · Shumei Matsuda (Toyota Motor)
- 027 Proposal of Data Based Preview Controller for Active Vehicle Suspension
Hiroki Furuta · Jin Hozumi · Shuta Yokota · Toru Takashima (Toyota Motor)
- 028 A Study of Suspension Hysteresis Reduction Method for Mass Production Vehicle
Tetsuji Nishimura · Kouhei Watabe (Honda Motor)

【12:10~13:25】

7 Vehicle Dynamics and Control II
 <OS> Pongsathorn Raksincharoensak (Tokyo University of Agriculture and Technology)

- 029 Study of Enhanced Responsiveness of Electric Power Steering System Including Digital Delay
Takashi Miyoshi · Tsutomu Tatsuishi (Honda Motor)
- 030 The Effect of the Difference between Front and Rear Wheel Lateral Stiffness on the Dynamic Stability at Directional Change
Saiichiro Oshita · Yoshio Kano · Makoto Yamakado · Masato Abe (Kanagawa Institute of Technology)
- 031 Principles and Applications of DYC in Transient State. 3rd Report
 -Effects of Friction Torque of the Front and Rear Differential Gears of 4WD Vehicle-
 Shigeharu Shibahata · Yasuji Shibahata (Vlabo)

【14:05~15:45】

8 Vehicle Dynamics and Control III
 <OS> Junya Takahashi (Hitachi)

- 032 The Development to Improve Turning Trajectory by Integrated Control System of Brake and Driving Force for Vehicle with High Power Two Motors
Ryosuke Hira · Tatsuya Suzuki · Kensuke Ito · Masaaki Nawano (Nissan Motor)
- 033 Development of Performance Design Method for Electric AWD Vehicles Motion Control while Acceleration/Deceleration by using a Driving Simulator and CAE
Naoya Machida · Ryota Suzuki · Shota Sawasato · Takeji Katakura (Nissan Motor)
- 034 Development of Driving Force Characteristic Design Technology to Realize Confident and Natural
Satoshi Yamanaka · Kuninori Kumagai (Toyota Motor)
- 035 Development of Kinematic Posture Control (KPC)
Naoki Hiraga · Fuminori Kato · Daisuke Umetsu (Mazda) · Makoto Yamakado · Masato Abe (Kanagawa Institute of Technology)

【16:25~17:40】

9 Vehicle Dynamics and Control IV
 <OS> Fuminori Kato (Mazda)

- 036 Extraction of Vehicle Motion Characteristics to Reduce Passenger's Head Motion for Suppressing Motion Sickness in Autonomous Driving
Kenta Maeda · Takahiro Ito · Junya Takahashi (Hitachi) · Kentaro Ueno · Shuji Ohshita (Hitachi Astemo) · Kai Watanabe · Ryoga Hoshino · Yoshio Kano · Makoto Yamakado · Masato Abe (Kanagawa Institute of Technology)
- 037 Model Predictive Vehicle Speed Control for Mainlane Vehicles Considering Merging Vehicles
 Reo Terano · Kohei Honda · Hiroyuki Okuda · Tatsuya Suzuki (Nagoya University)
- 038 Development of Inverse Magic Formula for Tire Performance Requirement Analysis
Takao Kobayashi (Bridgestone)

304 (3F)

[9:30~11:10]

10 Theoretical Design of PMSMs for Traction Motors
<OS> Hideaki Arita (Mitsubishi Electric)

- 039 Stator and Rotor Core Shape Optimization of Permanent Magnet Synchronous Motors based on Mechanism of Torque Ripple Generation
Katsumi Yamazaki · Taiga Uematsu (Chiba Institute of Technology)
Akihiro Tanaka · Toru Nakada (Nissan Motor)
- 040 Electromagnetic Design of Induction Motors for Electric Vehicles using Self-Organizing Methods
Taketsune Nakamura · Yushi Kido (Kyoto University)
- 041 Comparative Study on Measured and Analyzed Drive Performances of HEFSM Employing Variably Magnetizable PM for Improving Torque Density and Efficiency based on Optimizations of Aspect Ratio and PM Arrangement
Takashi Kosaka · Mitsuru Saito · Takeshi Okada · Hiroaki Matsumori · Nobuyuki Matsui (Nagoya Institute of Technology)
- 042 Acoustic Noise and Vibration Comparison of Switched Reluctance Motors made of High Silicon Steel, Amorphous Iron, and 0.2mm Silicon Steel
Akira Chiba · Haruki Sobue · Yifei Cai · Yusuke Fujii · Kyohei Kiyota (Tokyo Institute of Technology)
Soichiro Yoshizaki (JFE Steel)
Kunihiro Senda (JFE Techno-Research)

[12:10~14:15]

11 Accidental Injury Prediction and Prevention, Medicine -Medical and Engineering Research for Casualties Reduction-
<OS> Sadayuki Ujihashi (Nippon Bunri University)

- 043 Study on Methodologies to Validate the Algorithm for the Emergency/Automatic Collision Notification System using ITARDA's In-Depth Accident Data
Toru Kiuchi (Institute for Traffic Accident Research and Data Analysis)
Tetsuya Nishimoto (Nihon University)
- 044 Construction of Injury and Road Closure Time Prediction Algorithm in Highway Accidents
Fuga Goyo · Tetsuya Nishimoto (Nihon University)
Toru Kiuchi (Institute for Traffic Accident Research and Data Analysis)
Hirotoshi Ishikawa (Helicopter Emergency Medical Service Network)
- 045 Construction of a Vehicle Damage Level Recognition Model based on Deep Learning
Kento Nakao · Tetsuya Nishimoto (Nihon University)
Tomokazu Motomura (Nippon Medical School, Chiba Hokusoh Hospital)
- 046 Toward Realization of Image-Based Emergency Automatic Reporting System (Type 2 D-Call Net)
Takuro Miyazaki · Hirotoshi Ishikawa (Emergency Medical Network of Helicopter and Hospital HEM-Net)
Ken Itou · Toru Hayakawa (Tokio Marine & Nichido Fire Insurance)
Yuichi Komada (Tokio Marine & Nichido Risk Consulting)
Seiichiro Yoshizawa · Hiroaki Hozawa (Premier Aid)
Kunihiro Mashiko (Minamitama Hospital)

- 047 Injury Severity Prediction Based on Select Vehicle Category of Real-World Accidents Data
Susumu Ejima · Tsukasa Goto (SUBARU)
Peng Zhang · Kristen Cunningham · Stewart Wang (University of Michigan)

[14:55~16:10]

12 Advanced Power Electronics Component Technologies for Future Vehicles
<OS> Tomohiro Fukazu (Honda R&D)

- 048 Development of Low Conductivity Coolant for Battery Electric Vehicles
Yuva Kusano · Masao Watanabe (Toyota Motor)
Youichiro Yoshii · Kazuyoshi Kizuki · Yu Sasaki (Japan Chemical Industries)
- 049 Development of New Motor for Electrification Vehicle
Ryosuke Shibata · Yukio Tsuchiya · Kazuki Norimoto · Akihide Takehara (Toyota Motor)
- 050 SiC Power Modules Test using Inverter Closed-Loop Control and Electric Motor Emulator
-Active Power Cycling Test of Automotive SiC Power Modules based Inverter in Emulated Load Conditions-
Irene Luciani · Matteo Petrelli · Matteo Fioravanti (AEA)

311+312 (3F)

[9:30~12:35]

13 Hydrogen-Related Problems of Automotive Materials
<OS> Shoichi Hirosawa (Yokohama National University)

- 051 Behavior of Hydrogen and Lattice Defects from Incubation Period to Fracture in Hydrogen Embrittlement of High-Strength Steels
Kenichi Takai · Yuri Sugiyama · Kei Saito (Sophia University)
- 052 Relationship between Delayed Fracture Behavior and Microstructure in Ultra-High Strength Steel Sheets
Katsutoshi Takashima (JFE Steel)
Ken'ichi Yokoyama (Kyushu Institute of Technology)
- 053 Tomography for Bridging Nano and Macro: Semi-Spontaneous Interfacial Debonding
Hiroyuki Toda (Kyushu University)
Kazuyuki Shimizu (Iwate University)
Hiro Fujihara (Kyushu University)
Kyosuke Hirayama (Kyoto University)
- 054 Improvement of Environmental Hydrogen Embrittlement Resistance in High-Strength Aluminum Alloys by Means of Surface Modification
Keitaro Horikawa (Osaka University)
- 055 High-Pressure Hydrogen Tank for FCEV
Yuji Kuriyama · Yoshiaki Kameda · Takashi Mitsuda (Toyoda Gosei)
- 056 Application of Massive Hydrogen Storage and Transportation System to Hydrogen Refueling Station -Hydrogen Refueling Station by using SPERA HydrogenTM System-
Yoshimi Okada (Chiyoda)
- 057 Effect of Internal Fractures under Tensile Loading on Gas Permeability of FRP
Haruya Adachi · Akio Ohtani (Kyoto Institute of Technology)

【13:35~15:15】

14 Vehicle Development -Production/CAE・optimization/Parts-
Daisuke Ito (Kansai University)

058 Development of in Mold Coating Clear Coat Paint for
Carbon Fiber Sheet Molding Compound Roof
Katsunori Ito・Keiji Ambo (Toyota Motor)

059 Development of High Performance Corrosion Resistance
Paint for Truck Frames
Makoto Chikura・Naoki Ogawa (Hino Motors)
Masafumi Shono・Hiroki Muto
(Axalta Shinto Coating Systems)

060 Impact Detection for the High Voltage Battery
-Reduces Weight – Ensures Safety-
Johannes Vetter・Andreas Forster・Udo Geissler
(Continental)

061 The Study of Crosstalk Suppression in Wheel Force
Sensor
Kaori Inamura (Tokyo City University)
Takahisa Mori・Yohei Koyama・Hiroki Yamaguchi (A&D)
Toshiaki Sakurai・Tetsuo Maki・Toshiyuki Sugimachi
(Tokyo City University)

313+314 (3F)

【9:30~12:10】

15 MBD Guaranteed for Compatibility and Distribution by
International Standard I
-Innovation Support Technology through Collaboration
between Organizations-
<OS> Junichi Ichihara (AZAPA)

【OS Keynote Address】

062 MBD Guaranteed for Compatibility and Distribution by
International Standard -General Remarks-
Toshiji Kato (Doshisha University)

063 Development of 3-Cylinder Engine Model using
International Standard Language
-Engine Multi Physics Analysis-
Kimitoshi Tsuji (Digital Twins)
Yoshiyuki Koyama (Koyama Garage)

064 Development of Engine Fuel System Model by using
International Standard Language
Yoshiyuki Koyama (Koyama Garage)
Kimitoshi Tsuji (Digital Twins)

065 Proposal for Heat Loss Calculation by High-Precision
Actuator Modeling
Takuya Shinoda・Masashi Inaba・Keita Omi (DENSO)
Hiroki Nakamizo・Ryuta Yasui
(Tokyo Institute of Technology)
Masanari Ueda
(Siemens Electronic Design Automation Japan)
Haruki Takei (Siemens)
Yoshinori Aruga (Koa)
Takao Egami (Toshiba Electronic Devices & Storage)
Daisaku Mukaiyama (Rubycon)

066 Proposal of a Fast and Accurate Transient Thermal
Analysis Model for Semiconductor Devices
Hiroki Nakamizo (Tokyo Institute of Technology)
Takuya Shinoda (DENSO)
Ryuta Yasui (Tokyo Institute of Technology)
Haruki Takei・Qun Yuan (Siemens)
Tatsuya Nakajima (IDAJ)

067 Transient Thermal Analysis Model Creation Method for
Semiconductor Devices
-DSRC Model Creation Method-
Ryuta Yasui (Tokyo Institute of Technology)
Takuya Shinoda (DENSO)
Hiroki Nakamizo (Tokyo Institute of Technology)
Haruki Takei・Qun Yuan (Siemens)
Tatsuya Nakajima (IDAJ)

【13:10~15:15】

16 MBD Guaranteed for Compatibility and Distribution by
International Standard II
-Innovation Support Technology through Collaboration
between Organizations-
<OS> Osamu Seya (TechnoPro)

068 Development of Electric Vehicle Cabin Thermal Model by
using International Standard Language (Fifth Report)
-Multi-Domain Analysis of Heat Transfer, Humidity and
CO2 Concentration in EV Cabin-
Tsunehiro Saito (AGC)
Hiroyuki Tanaka (Mitsubishi Motors)
Kimitoshi Tsuji (Digital Twins)
Hidetoyo Noyama
(Mitsubishi Heavy Industries Thermal Systems)

069 Proposal of Man-Hour Reduction in Experiments by
Utilizing MBD in Cooperation with Tier 1 and Tier 2
-Modeling of Passive Components Compatible with VHDL-
AMS and Utilization of the Model-
Yoshinori Aruga (KOA)
Daisaku Mukaiyama (Rubycon)
Masanari Ueda
(Siemens Electronic Design Automation Japan)
Takuya Shinoda (DENSO)
Naoto Taoka (IDAJ)
Haruki Takei (Siemens)
Noboru Takizawa (Unaffiliated)
Takao Egami (Toshiba Electronic Devices & Storage)
Shiho Arimoto (Hitachi Astemo)

070 A Study of Thermal and Electrical Multi-Domain Model of
Aluminum Electrolytic Capacitors (First Report)
Daisaku Mukaiyama (Rubycon/Nagoya University)
Yoshinori Aruga (KOA)
Masanari Ueda・Haruki Takei (Siemens)
Takuya Shinoda (DENSO)
Noboru Takizawa (Unaffiliated)
Takao Egami (Toshiba Electronic Devices & Storage)
Shiho Arimoto (Hitachi Astemo)
Hideki Jonokuchi (Nagoya Institute of Technology)

071 Development of Thermal Comparator by VHDL-AMS
and Modeling of Thermal Protection Function of Boost
Converter
Noboru Takizawa (Unaffiliated)
Shiho Arimoto (Hitachi Astemo)

072 A Boost Converter with Water Cooling Unit Whose Flow
Rate is Controlled by a Thermal Comparator
Noboru Takizawa (Unaffiliated)
Shiho Arimoto (Hitachi Astemo)

[15:55~17:35]

17 The Latest Technology in Thermal Management and Fluid Dynamics Contributing to the Mobility Evolution -Heat and Fluid Flow Control. Advanced Thermal Management and Design-
<OS> Satoshi Someya (AIST)

073 Visualization and Temperature Variation for Forced Air Cooling of Electronic Engine Control Unit (ECU)
Ryota Yamaguchi · Kazuaki Inaba · Ryuta Yasui (Tokyo Institute of Technology)
Masafumi Umeno · Takuya Shinoda (DENSO)
Hiroki Nakamizo (Tokyo Institute of Technology)

074 The Thermal System as a Key Differentiator for Performance and Comfort in a BEV -Using Vtms Benchmark Results for Target Setting to Define the Right Operations Strategies-
Michael Bires · Georg Schrank (AVL List)

075 Effect on Performance Improvement of DPF by Setting Vacuum Insulation Device
Minoru Tsuda · Junichi Ohara · Dai Yamanishi · Masateru Ishida · Kazuyuki Maeda (National Fisheries University)

076 Thermal Propagation of Li-Ion Batteries: a Simulation Methodology for Enhanced and Accelerated Virtual Development
Bernhard Brunnsteiner · Wenzel Prochazka (AVL List)
Yosuke Tsukamoto (AVL Japan)

315 (3F)

[9:30~12:10]

18 Evaluation and Sensing of Driver's State
<OS> Chiyomi Miyajima (Daido University)

077 Detection of Presence in a Vehicle Cabin using Space Potential Fluctuation
Kenji Kouno · Yoshihiro Suda (The University of Tokyo)
Hiroyuki Suto · Yusuke Umetani (Toyota Motor)

078 In-Cabin Sensing - Advanced Driver Distraction and Occupant Safety Solutions -Detection, Analysis and Monitoring of Driver and Passenger State-
Heinz Abel · Holmer-Geert Grundmann · Andreas Forster · Lars Weisgerber · Mario Schühler (Continental Automotive)

079 Evaluation of Driving Skill and Occupant Status using Human Body Motion and Driving Behavior Indices
Akinari Hirao (AIST)
Yoh Kato (AIST/Sumitomo Riko)
Toshihisa Sato (AIST)

080 Prediction of Decreasing Arousal Level by Deep Learning for Face Images
Yuki Mekata · Miwa Nakanishi (Keio University)

081 Driver's Sleepiness Estimation using Millimeter Wave Radar and Camera
Katsuki Kubo · Toshio Ito (Shibaura Institute of Technology)
Fumiharu Nakajima (Murakami)

082 Research on the Vital Monitoring of the Driver using a Millimeter-wave Radar Sensor
Youhei Murakami · Jun Kuroda · Tooru Sahara (Kyocera)
Toshio Ito · Rei Masuda (Shibaura Institute of Technology)

[13:10~15:50]

19 Driver Behavior, Education, and Model
<OS> Tetsuya Kaneko (Osaka Sangyo University)

083 Relation of On-Dash Cam Observation of Passing Stop Intersections Behavior and Emergency Braking of Elderly Drivers
-Study on Driver Characteristics for Delaying Driving Cessation (33)-
Takashi Yonekawa · Hirofumi Aoki (Nagoya University)
Kan Shimazaki (Kindai University)
Takahiro Tanaka · Kazuhiro Fujikake · Makoto Inagami · Masae Kojima · Kunitomo Aoki · Akio Hirano · Natsuka Takeda (Nagoya University)

084 A Study to Develop a Simple Questionnaire on Driving Characteristics of Elderly Drivers
-Study on Driver Characteristics for Delaying Driving Cessation (34)-
Masae Kojima (Nagoya University)
Kojiro Shojima (National Center for University Entrance Examinations)
Hirofumi Aoki (Nagoya University)
Kan Shimazaki (Nagoya University/Kindai University)
Satsuki Yamauchi · Takahiro Tanaka · Takashi Yonekawa (Nagoya University)

085 Development of a Driving Aptitude Test Program Corresponding to the Driving Characteristics of Elderly Drivers
Hirofumi Aoki (Nagoya University)
Kan Shimazaki (Nagoya University/Kindai University)
Masae Kojima (Nagoya University)
Kazumitsu Shinohara (Osaka University)
Takatsune Kumada (Kyoto University)
Takahiko Kimura (Kansai University of Welfare Sciences)
Kazuma Ishimatsu (Jikei University of Health Care Sciences)
Naoko Kawano (Osaka Metropolitan University)
Seiichi Oota · Kazuaki Tadokoro (National Agency for Automotive Safety & Victims' Aid)

086 Analysis of Relationship between Cognitive Functional Assessment Score and Driving Behavior and Attention Characteristics of Aged Drivers
Shinichiro Goto (Soka University/Kochi University of Technology)
Kaechang Park · Takeshi Asaoka · Masayasu Atsumi (Soka University)

087 Examination of Accident Prevention Measures Due to Incorrect Brake and Accelerator Pedal Pression (First Report)
-Artificial Occurrence of Pedal Misapplication Situation and Observation of Driver's Reaction-
Naoya Mamata · Toru Fukutomi · Yasuo Fujii (Tokyo University of Agriculture and Technology)
Machiko Hiramatsu · Tsuyoshi Sakuma (Nissan Motor)
Hirosi Mouri (Tokyo University of Agriculture and Technology)

088 Evaluation of Pedestrian's Sensitivity to the Trajectory of Ultra-Compact Mobility Using Biometric Measurement
Toshiyuki Sugimachi · Yuichi Sueshige · Hideo Miyachi · Toshiaki Sakurai · Tetsuo Maki (Tokyo City University)

[16:30~18:35]

20 Human Factors and HMI in Driver Support and Automated Driving I

<OS> Hiroyuki Sakai (Toyota Central R&D Labs.)

- 089 Reduction of Driver Mental Strain by Situation-Adaptive Control of In-Vehicle Illumination
Takuya Takeda · Takahiro Naito · Hiroaki Ogawa · Kazuya Miura · Akihiro Hayashi (DENSO)
- 090 Effects of External HMI of Automated Driving Truck in Operational Design Domain on Acceptance of Peripheral Driver
Jongseong Gwak · Keisuke Shimono · Yoshihiro Suda (The University of Tokyo)
- 091 Method of Preventing Distracted Driving in Advanced Driver Assistance Systems
Daichi Chikuma · Kazunori Shidoji (Kyushu University) · Takayuki Moritani · Toshiki Yoshihara (Mazda)
- 092 Relationship between Attentional Resources and Driving Behavior when using an Automotive Peripheral Vision Device
Yuto Shimomura · Yuta Irisuna (Kagawa University) · Atsushi Kanbe (Aichi University of Technology) · Keisuke Suzuki (Kagawa University)
- 093 A Study on the Evaluation Index of Driver's Condition for Automated Lane Keeping System
Koki Muto · Daiki Yoshino · Shoko Oikawa · Toshiya Hirose (Shibaura Institute of Technology)

414+415 (4F)

[9:30~10:45]

**21 Wireless Power Transfer Technologies I
 -Static and Dynamic Wireless Power Transfer-**

<OS> Katsuhiro Hata (The University of Tokyo)

- 094 Study on Dynamic Wireless Power Transfer System on Expressways from the Viewpoint of Economic Feasibility
Takehiro Imura · Kanta Sasaki · Yuto Yamada · Koki Hanawa (Tokyo University of Science) · Nagato Abe (Toa Road)
- 095 High Efficiency 10kW Class Wireless Power Transfer by CPT
 -Increased Power Consumption of Electric Field Coupling Couplers-
Mitsuru Masuda · Naoki Tsurutani · Hiroyuki Yamazaki · Hirokazu Takewaki (Furukawa Electric)
- 096 Theoretical Analysis of Resonant Type on Tolerance and Frequency Selectivity Against FOD
Atsuo Hatono (Nippon Institute of Technology)

[12:10~13:50]

**22 Wireless Power Transfer Technologies II
 -Static and Dynamic Wireless Power Transfer-**

<OS> Keisuke Kusaka (Nagaoka University of Technology)

- 097 International Standard and Social Implement of Dynamic Wireless Power Transfer for EV in the World
 -Technical Issue and Directionality-
Yukio Yokoi (Takushoku University)

- 098 Mathematically Optimal Locations of In-Motion Wireless Power Transfer System on Expressways
Yudai Honma · Daisuke Hasegawa · Katsuhiro Hata · Takashi Oguchi (The University of Tokyo)

- 099 Experimental Verification of the Effect of Asphalt Mixture on Coil Embedment for Dynamic Wireless Power Transfer -Distance between Pavement Material and Coil, Rolling Compaction and Heat-
Koki Hanawa · Takehiro Imura · Yoichi Hori (Tokyo University of Science) · Nagato Abe (Toa Road)
- 100 Research on the Basic System for Dynamic Wireless Power Transfer Connected with Photovoltaic in the Off-Grid Environment
Masamichi Sugizaki · Shogo Urano · Kanta Sasaki · Takehiro Imura · Yoichi Hori (Tokyo University of Science)

[15:05~17:45]

23 Electric Road System (Dynamic Charge and Power Supply)

<OS> Hitoshi Tsunashima (Nihon University)

[OS Keynote Address]

- 101 Electrification of the Swedish Transport System
 -Electric Road Systems, ERS, a Contribution to Reach a Fossil Free Transport System-
Jan Pettersson (Trafikverket)
- 102 Development of 450-kW Dynamic Charge System for Heavy-Duty Electric Trucks
Takamitsu Tajima · Kouichi Sato · Wataru Noguchi · Hiroyuki Abe · Tomohisa Aruga · Toshitaka Togami · Hiroka Shigi · Jun Ito (Honda R&D)
- 103 Research on a Method of Installing 450kW Electric Road System on Highways (1st Report)
Kazuki Shimamura · Hina Tamiya (JARI) · Takamitsu Tajima (Honda R&D)
- 104 Decarbonising Road Freight - Synergy Potential and Rationality of Combined Infrastructures for Stationary and Dynamic Charging of Electric Trucks
 -European Perspectives and Research Agenda-
Michael Lehmann (University of Applied Sciences Erfurt)
- 105 Research & Innovation for Electric Roads
Martin G. H. Gustavsson (RISE Research Institutes of Sweden)
- 106 Mobility Energy Revolution and the Development
Keiichi Koseki (ENEOS)

416+417 (4F)

[9:30~12:10]

24 The Advanced Manufacturing Technology in Next Generation

<OS> Takashi Matsumura (Tokyo Denki University)

- 107 Study of Simulation about Deflection and Distortion during Cutting Process
Hisao Eto · Yoshihiro Oonishi · Takeo Miyaguchi (ITOCHU Techno-Solutions) · Jared Recker (Third Wave Systems)
- 108 Construction of High-Design, Low-Cost Instrument Panel Molding Technology
Chiriki Watanabe · Yasushi Arahata · Yushi Shinno · Koji Watanabe (Honda Motor)

- 109 Development of Automatic Path Generating Technology for Spot Welding Robot
Wataru Toyama (Honda Motor)
- 110 Establishment of Remote Laser Welding Mass Production Technology Applied to Press Frames for Small Scooters for the ASEAN Region
Hideaki Akahoshi · Kohei Kanaya (Honda Motor)
- 111 Practical Application of STAF (Steel Tube Air Forming) Process Capable of High-Strength Continuous Closed Cross-Section
Noboru Itagaki · Masayuki Ishizuka · Kei Yamauchi · Hiroyuki Kan · Kimihiro Nogiwa · Norieda Ueno (Sumitomo Heavy Industries)
- 112 Direct Resistance Joule Heating of Al-Si Coated Steel Pipes in the Steel Tube Air Forming Process
Ryohei Ikeda · Masashi Kawakami · Akihiro Ide · Masayuki Ishizuka · Kimihiro Nogiwa · Hiroyuki Kan · Norieda Ueno (Sumitomo Heavy Industries)

[13:10~14:50]

25 Advanced Technologies for Automotive Body Structure I
 <OS> Shigenobu Okazawa (University of Yamanashi)

- 113 A Tailored Solution for Non-Linear Dynamic Analysis of Body Structures
Fumio Numata · Noriyuki Muramatsu · Kazumasa Kato (Magna International Japan)
 Markus Breiffuss · Oliver Grieshofer (Magna Powertrain)
- 114 Clarification of Impact Load Transfer Path using Graph Structured Analysis
Tomohito Okuyama · Masanori Honda · Mitsugu Mera · Kyohei Yukita · Isamu Kizaki (Mazda)
- 115 Comparative Study of Crash Performance and Lightweight Effect between Steel Roll-formed and Aluminum Extruded Bumper Beams
Dongyong Shi · Kenichi Watanabe · Hideki Ishitobi · Narikazu Hashimoto · Taiki Yamakawa (Kobe Steel)
- 116 Topology Optimization Method for Vehicle Body Structure to Meet Multiple Performance Requirements for Body Stiffness, Crashworthiness and NVH at the Same Time
Naomi Wada (Mazda)
 Yuji Wada (Tokyo Institute of Technology)
 Kohei Yuge (Seikei University)
 Isamu Kizaki · Kohji Hashida · Sakayu Terada · Kyoso Ishida (Mazda)

[15:30~18:10]

26 Advanced Technologies for Automotive Body Structure II
 <OS> Masaki Omiya (Keio University)

- 117 Predicting Mechanical Property of Fiberreinforced Plastic Considering Microstructure by Numerical Simulation
Hirofumi Sugiyama · Kenta Ishizuna · Yasutake Haramiishi · Shigenobu Okazawa (University of Yamanashi)
- 118 Strength Evaluation of Multipoint Clinch and Adhesive Bonded Joints of High Strength Steel and Aluminum Alloys
Reika Akita (ITOCHU Techno-Solutions)
 Yunwu Ma · Pengjun Luo · Seiichiro Tsutsumi · Ninshu Ma (Osaka University)
 Yohei Abe · Ken-ichiro Mori (ToyoHashi University of Technology)
- 119 New Method for the Assessment of Adhesive Joint Failure Under Cyclic Loads
Kazumasa Kato · Masatoshi Yamakawa · Noriyuki Muramatsu (Magna International Japan)
 Manuel Frank · Klaus Hofwimmer (Magna Powertrain)

- 120 Prediction of Stress Distribution in Plastic Deformation of Bending Plate Member using Machine Learning
Kanta Suzuki (University of Yamanashi)
 Kazuya Yamauchi · Kosuke Kojima (Mazda)
 Ichiro Kiriyama · Kotaro Ito (University of Yamanashi)
 Yuta Yokoyama (University of Yamanashi/Diver Technology)
 Hirofumi Sugiyama (University of Yamanashi)
 Shigenobu Okazawa (University of Yamanashi/Diver Technology)
- 121 Prediction of Energy Absorption Properties of an Aluminum Extrusion Part using Deep Learning
Tsuyoshi Nishihara · Takashi Nagatani · Kaori Suzuki · Keita Ohmine (Mazda)
- 122 Application of CAE/ML Technique for Multifunctional Trade-Off Study between Mass and Performances
Yoshio Fujita · Shigeki Kojima · Kosho Kawahara (Toyota Motor)

501 (5F)

[9:30~11:35]

27 Lubricants, Lubrication Technology and Tribology
 <OS> Junpei Yoshida (Honda R&D)

- 123 An Investigation on Oil Consumption in 4-Cycle Engine (Third Report)
Hiroshi Watanabe (Bear Chemical & Liquid Machine Technology)
 Byung Hee Kang (SK Innovation R&D Center)
- 124 Development of EHD Analysis Considering Running-in Process for Engine Bearings
Yohei Kurabe · Yuna Suzuki · Yuichiro Kajiki (Taiho Kogyo)
- 125 Estimation of the Distribution of MoS2 on Sliding Surface by AFM/Raman Combined Analysis
Toshimitsu Numata · Sawa Araki · Yuriko Fujii · Nobuo Kojima · Ritsuko Kitano · Momoka Miyoshi · Kiyotaka Nakamura (Nissan ARC)
- 126 A Study on the Oil Film Thickness on the Lower Side Surface of the Oil Ring of a Gasoline Engine
 Akemi Ito · Ken Miura · Rina Yamada (Tokyo City University)
- 127 Effect of Oil Properties on Oil Distribution in Pattern Coating Piston
Kenta Sato · Akito Watanabe (Gunma University)
 Moritsugu Kasai · Hiroshi Oki (Idemitsu Kosan)
 Hisanobu Kawashima · Hidekazu Suzuki · Tsuneaki Ishima (Gunma University)

[12:35~14:15]

28 The New Technology for the Drivetrain Systems I
 <OS> Keiji Sato (Transmission Research Association for Mobility Innovation)

- 128 Development of Two-Way Roller Clutch without Backlash
Takeshi Yamamoto (Tokai University)
- 129 Consideration on Lubrication of High-Speed Rotating Gear (First Report)
 -Relationship between the Behavior of Lubricating Oil and Air Flow on the Tooth Surface-
Kensuke Suzuki · Kazuki Sakai · Kaori Sakai · Tomoyuki Hara (Univance)

- 130 Development of Single Tooth Pinion Gear to Achieve High Efficiency and High Speed Reduction (Third Report)
 Teppei Tokizaki · Motoaki Kobayashi · Kumiko Masubuchi · Tsubasa Ishizeki · Yoshichika Kawashima (Mitsuba)
- 131 Fast Optical Measurement of the Roughness and Waviness of Mechanical Components for Electric Power Steering Systems to Improve Efficiency and Quietness
Hiroyuki Maruyama · Kunihiko Takao · Tatsuya Yaoita (KEN Automation)
 Boris Brodmann · Rainer Brodmann (Optosurf)

[14:55~17:00]

29 The New Technology for the Drivetrain Systems II
 <OS> Akihiro Aoyama (Doshisha University)

- 132 New Development 1.8L Hybrid System for MPV
Masataka Sugiyama · Hironori Nagano · Ryosuke Shibata · Kenshi Yamanaka · Yusuke Kuruma · Akihiro Makino · Masahiro Yamada · Satoshi Shimizu · Tomoaki Abe (Toyota Motor)
- 133 Development of New Hybrid Transaxle for New MPV
Hironori Nagano · Hidetomo Shiota · Tomohisa Taga · Hiroki Kunifuda · Yota Mizuno · Tatsuo Obata · Iori Matsuda · Shinichiro Suenaga (Toyota Motor)
- 134 Electrical Powertrain Oil Cooled for C-Crossover EV
Hiroki Wada · Takeshi Inoo · Karim Mikati · Yukinori Tsukamoto (Nissan Motor)
- 135 Development of a New CVT Featuring High Efficiency and Wide Ratio Coverage
Shingo Suzuki · Kouhei Toyohara · Takuro Kawasumi · Masatsugu Endo · Makoto Oguri (JATCO)
- 136 Improvement of Drivability in Sport Driving by Cooperative Control of Engine and CVT
Suguru Inoue · Takehiko Katsurano · Yoshito Kakuta · Takumu Ishida · Takaaki Waki · Hiroyuki Nagaya · Tomotaka Terajima (SUBARU)

502 (5F)

[9:30~11:35]

30 The Latest Noise and Vibration Technologies and Sound Design Technologies I
 <OS> Takashi Kondo (Honda R&D)

- 137 Extracting of High Contributing Body Vibration Mode to Road Noise using Operational Data Measured Separately
Yuri Arai · Miho Nakatsuka · Masashi Komada (Toyota Motor)
 Junji Yoshida (Osaka Institute of Technology)
- 138 Modelling of Helical Spring and its Utilization based on Vibration Propagation
Kosuke Nakanishi · Toru Yamazaki · Kai Kurihara (Kanagawa University)

- 139 Tire Test Stand Measurements for Blocked Forces Identification and Tire Noise Auralization
Rabah Hadjit (HBK)
 Markus Brandstetter · Athanasios Poulos (Hexagon)
 Bret Engels · Yumiko Sakamoto (HBK)

- 140 Auralization of Road Noise CAE Simulation Results for Interactive Sound Quality Evaluations
 Rabah Hadjit (HBK)
 Fredrik Sjogren · Athanasios Poulos · Cyril De Walque (Hexagon)
Yumiko Sakamoto (HBK)

- 141 Trochoidal Curve Representation of Tire Rolling Motion as The Basis of Tire Vibration Analysis
Masao Ishihama (Ishihama Giken Consulting)

[12:35~14:15]

31 The Latest Noise and Vibration Technologies and Sound Design Technologies II
 <OS> Toru Yamazaki (Kanagawa University)

- 142 Intermediate Index of Structural Transmission Characteristics to Enhance Engine Combustion Noise Quality
Kenji Torii (Honda Motor)
 Keizo Konishi (Honda R&D)
- 143 Engine Noise Contribution Analysis by Operational TPA for Improvement Examination
Seiya Yamagishi · Hisashi Ozawa · Kenichi Yamashita (Isuzu Advanced Engineering Center)
- 144 The Effect of Connecting-Rod I-Beam-Section Specification on Vibration-Transmission and Decay Characteristics of Diesel Engines
Shun Nakagawa · Hitoshi Oguchi · Masato Mikami (Yamaguchi University)
- 145 Analysis of Factors Causing Combustion Pressure Vibration in Gasoline Engines
Naruki Ezawa · Tatsuya Kuboyama (Chiba University)
 Toshio Yamada (Sustainable Engine Research Center)
 Yasuo Moriyoshi (Chiba University)

[14:55~16:10]

32 The Latest Noise and Vibration Technologies and Sound Design Technologies III
 <OS> Hirotaka Shiozaki (Mitsubishi Motors)

- 146 Reduction Technologies of Rear Differential Gear Whine Noise by Controlling Vibration Characteristics of Leaf Suspension
Jun Kokaji · Masashi Komada · Hideo Satoh (Toyota Motor)
 Junzo Tamari · Koji Suzuki · Taira Sugiyama (Estech)
- 147 Development of Technology for Predicting Engine Vibration during Start-up by Applying a Model of Hydraulic Mount Characteristics
Satoshi Watanabe (Honda Motor)
 Yuki Wakimoto (Newton Works)
 Tomohiro Kitayama · Kazunori Miyata · Takahiro Sakuma · Taketo Maeda (Auto Technic Japan)
- 148 Electric Power Steering Noise Prediction by Transfer Path Analysis
Hirotaka Kamano (Toyota Motor)

503 (5F)

[9:30~11:10]

33 Advanced Gasoline Engine Systems and Technologies I
 <OS> Kazuhiro Akihama (Nihon University)

- 149 Development of High-Accuracy End-Gas Autoignition Prediction Model (Eighth Report)
 -Expansion of Application Conditions for Ignition Delay Time Equations and Rediscussion of Error Correction Method-
Kazunari Kuwahara (Osaka Institute of Technology)

- 150 Development of a Prediction Model of Soot Particle Size Distribution Applicable for Design Calculations of Internal Combustion Engines (First Report)
-Validation for iso-octane/n-heptane/toluene Blended Fuels-
Jun Hashimoto · Haruki Tokuyama · Takeru Imahara (Oita University)
- 151 Atomization Process in Multi-Hole Nozzle Spray for Port Fuel Injection (Fourth Report)
-Proposal of Sheet Breakup Model for Numerical Simulation-
Kanako Nishimura · Dai Matsuda · Eriko Matsumura · Jiro Senda (Doshisha University)
- 152 Analysis of Spray Characteristics of Direct Injection SI Engines under Low Temperature Conditions
-Controlled fuel and wall temperature as experimental parameters-
Akira Adachi · Fuma Maekawa · Dai Matsuda · Eriko Matsumura · Jiro Senda (Doshisha University)
Masahiro Okuma · Yusuke Saiki (DENSO)

- 160 Impact of Gasoline Performance Packages on Particulate Emissions in Direct Injection Spark Ignition Engine
Marc Walter · Uwe Lutz · Mathias Lohmann · Thomas Hartmann · ChangKyu Seo (BASF)

[12:10~13:50]

34 Advanced Gasoline Engine Systems and Technologies II
<OS> Daijiro Tanaka (Yamaha Motor)

- 153 Development of the In-Cylinder Fuel Direct Injection Technology for Supercharged Gasoline Engine for Motorcycle
Satoaki Ichi · Yoshimoto Matsuda (Kawasaki Motors)
Atsushi Hisano · Yota Sakurai · Masahito Saitou (Kawasaki Heavy Industries)
- 154 Development of Supercharged 2-Stroke Engine with Intake and Exhaust Valve for Series Hybrid System (First Report)
Atsushi Hisano · Youta Sakurai · Masahito Saitou (Kawasaki Heavy Industries)
Satoaki Ichi · Yoshimoto Matsuda (Kawasaki Motors)
- 155 Automatic Mechanical Tappet Clearance Adjustment Mechanism for Small Motorcycles Contributing to Emission Reduction
Naoto Ono · Masaya Kurokawa (Honda Motor)
- 156 A Study on Cold Emission Reduction of Direct-Injection Gasoline Engine by Controlling the In-Cylinder Gas Properties (First Report)
Takeaki Kudo · Junki Hori · Masatoshi Seto · Ryosuke Hara · Tatsuya Fujikawa · Masahisa Yamakawa (Mazda)

[14:30~16:10]

35 Advanced Gasoline Engine Systems and Technologies III
<OS> Takashi Kondo (Honda Motor)

- 157 An Investigation on Combustion Cycle-by-Cycle Variations Affected by Spark Discharge Behavior under High EGR Ratio
Ryota Asakura · Taizo Kitada · Yoshiya Inoue · Ryota Nakada · Kazuo Kurata (Mitsubishi Motors)
- 158 A Study on Improvement of Main Flame Ignition Performance by Multiple Pre-Discharge
Eiichiro Ohata (Hitachi Astemo)
Kazuhiro Oryoji · Tomoyuki Hosaka (Hitachi)
- 159 The Dedicated Hybrid Engine Combining e-fuel Compatibility, Product Cost and Production Boundaries
Wolfgang Schoeffmann · Paul Kapus · Mirko Plettenberg · Michael Howlett · Gerald Teuschl · Christoph Sams (AVL List)

303 (3F)

[9:30~11:10]

36 Cars That Think and Communicate
-Beyond Autonomous Driving-
<OS> Yuichiro Toda (Okayama University)

- 161 Information Integration Method from On-Board and Roadside Sensors in Multimodal-Mobility Environment
Takuma Ito · Wataru Furuse · Misato Nihei (The University of Tokyo)
- 162 Effectiveness of Pedestrian-Information Display for Right-Turning Vehicles at Intersections
Kodai Kaneko · Yuta Kusakari · Shoko Oikawa (Tokyo Metropolitan University)
Yasuhiro Matsui (NALTEC)
Naoyuki Kubota (Tokyo Metropolitan University)
- 163 Development of Reinforcement Learning System for Urban Autonomous Driving
Katsuo Semmyo · Wei-Fen Hsieh · Shin Sakamoto · Masahiko Watanabe (NTT DATA Automobiligence Research Center)
- 164 Driving Dialogue Dataset for a Transformer-Based Conversational System that Talks about Scenery
Ko Koga · Toshifumi Nishijima (Toyota Motor)
Hiroaki Sugiyama (NTT)

[13:00~15:05]

37 The New Frontier in Autonomous Vehicle's Cybersecurity
<OS> Ryo Kurachi (Nagoya University)

[OS Keynote Address]

- 165 Autonomous Driving and Cyber Physical Security
Tsutomu Matsumoto (Yokohama National University)
- 166 Paving the Way for the "Software Defined Vehicle"
-A fundamental paradigm change towards IoT mobility-
Martin Schleicher (Continental)
- 167 Coverage Guided Fuzzing of Remote Embedded Devices
David Lazar · Chiharu Ota (Argus Cyber Security)
- 168 Cloud-Based Vehicle Cyber Security in the New Software-Enabled Ecosystem
Simiao Wang · Monique Lance (Argus Cyber Security)

304 (3F)

[9:30~10:45]

38 New Development of Model Distribution and Model Based Development I
<OS> Masakazu Mukai (Kogakuin University)

- 169 About the Outlines of FMI 3.0 and eFMI Specifications
Yutaka Hirano (Woven Planet Holdings)
Kazuhiko Ito (Gaio Technology)
Seiji Ishikawa (ETAS)
Hisaki Iwai (Bosch)
Norifumi Yoshimatsu (3V-SG)
Dai Araki (Toshiba Digital Solutions)
- 170 Challenges and Countermeasures in using FMUs to Perform Scenario-Based Testing in a Cloud Environment
Takashi Yamada · Kensuke Araki · Katsuya Tsuzuki (dSPACE Japan)

171 Examination of Model Exchange and Distributed Co-Simulation using SSP Standard

Dai Araki (Toshiba Digital Solutions)
Hiroyuki Hagiwara · Tomohiro Moriyama (NEXTY Electronics)
Junichi Ichihara (AZAPA)
Rui Gao · Meng Lan (Modelon)

[12:10~14:15]

39 New Development of Model Distribution and Model Based Development II
<OS> Yutaka Hirano (Woven Planet Holdings)

- 172 Development of OpenModelica Interface for External Control
Kunihiro Matsuzawa · Hajime Sato · Takashi Yamashita (AdvanceSoft)
- 173 Development of C++ Library for Converting a Simulator to FMU
Hajime Sato · Takashi Yamashita · Kunihiro Matsuzawa (AdvanceSoft)
- 174 Development of Simulation Controlling Redundant Motor System
Atsuto Ogino · Kota Ishikawa · Yoshifumi Ohashi (Aisin)
- 175 Road Surface Marking Image Generation for Automotive Camera Recognition System Verification
Takeshi Chibahara · Sho Fujiwara (Honda Motor)
Mari Kawabata · Hutchinson Killian (ANSYS Japan)
- 176 Model based Development Calibration of Hybrid Propulsion using a SiL Environment
-PHEV Application as Use Case-
Gerald Teuschl · Peter Ebner · Mario Ninaus · Chiller Stefan · Martin Christian · Goetschl Peter · Knapp Patrick (AVL List)

311+312 (3F)

[9:30~11:35]

40 Fuel Cell Vehicle
-Fuel Cell Stacks, Systems and Components-
<OS> Seiji Sano (Toyota Motor)

- 177 Light-Duty Commercial Vehicle Demonstrator Featuring a Low-Cost PCB Fuel Cell
Tom Mason · Vidal Bharath · Puneet Jethani (Bramble Energy)
Jonathan Hall · Stephen Borman · Mike Bassett (Mahle Powertrain)
- 178 Model-Based Development of Fuel Cell Systems for Heavy Duty Trucks
Marius Zubel · Marius Walters · Sascha Tews (FEV Europe)
Takuya Tsukinari (FEV Japan)
Julian Toussaint (RWTH Aachen University)
- 179 Energy Management for Fuel Cell Powertrains Optimizing Hydrogen Efficiency and Component Lifetime
Johannes Pell · Christoph Schörghuber · Arno Huss (AVL List)
- 180 Study of Auxiliary Brake Apparatus by Air Compression and Release for Stop of Heavy FCV Regenerative Brake
Yasufumi Iijima · Toshinori Fujita · Takashi Shibayama (Tokyo Denki University)

181 Analytical Technique on Proton Transport Resistance in Support Pores in PEFC Catalyst Layer

Masahiro Komoto (Suzuki Motor)
Shota Katayama (FC-Cubic)

315 (3F)

[9:30~11:35]

41 Human Factors and HMI in Driver Support and Automated Driving II

<OS> Yohei Michitsuji (Ibaraki University)

182 Estimation of Readiness for Automated Driving (First Report)

-Developing Estimation Model-

Yasuo Sakaguchi · Yuji Muragishi · Hiroshi Kuroyanagi
(Toyota Central R&D Labs.)
Tsutomu Tamura · Yuki Nakahara · Toru Ono ·
Robert Fuchs (JTEKT)

183 Estimation of Readiness for Automated Driving (Second Report)

-Validation of Estimation Model-

Yasuo Sakaguchi · Yuji Muragishi · Hiroshi Kuroyanagi
(Toyota Central R&D Labs.)
Tsutomu Tamura · Yuki Nakahara · Toru Ono ·
Robert Fuchs (JTEKT)

184 Human-Centric Automated Driving for Intersection Crossing

-C-ITS Control Application for Public Transport-

Sven Jansen · Jochem Brouwer (TNO Traffic & Transport)
Koichi Kawaguchi (TNO Japan)

185 Evaluation of Interface Design for Recognition Phase Human-Automation Cooperation in Automated Driving

Atsushi Kuribayashi (Nagoya University)
Eijiro Takeuchi (Tier IV/Nagoya University)
Alexander Callbaro · Yoshio Ishiguro · Kazuya Takeda
(Nagoya University/Tier IV)

186 Decision-Making of Lane Change Timing using Lane-Level Route Planning in Lv.2 Advanced Driver-Assistance Systems

Ryuta Hashimoto · Takahiro Seta · Ichi Gi ·
Ryo Masutani · Atsuki Kinoshita (Woven Core)

[12:35~13:50]

42 Vehicle Motion Control

Ryohei Fukatsu (Daihatsu Motor)

187 Development of an Electronically Controlled On-Demand Braking System

Masaki Maruyama · Takayuki Yamamoto ·
Masanori Izuka · Yoshio Masuda (Advics)

188 Bench Drivability Calibration Method by Parameter Optimization using Empirical Model

Youta Morinaga · Toru Nishizawa · Shigeko Kawaguchi
(AVL Japan)
Daisuke Yamada · Toshiyuki Naoi · Kosuke Tsuchiya ·
Hideharu Takimoto (SUBARU)

189 Integrated Vehicle Dynamics Control Ordered by Six-Component Force at Center of Gravity with Brakes Mounted on Each Wheel

Sota Ukai (Toyota Motor)
Manabu Nagasaka (Advics)
Etsuo Katsuyama (Toyota Motor)

414+415 (4F)

[9:30~11:10]

43 Social Change and Next Generation Mobility I

<OS> Toshiyuki Sugimachi (Tokyo City University)

190 Analysis of Transitions in Fields of Automated Driving-Related Research in Japan based on JSAE Papers

Keisuke Shimono · Shoichi Suzuki · Manabu Umeda ·
Takahiko Uchimura · Yoshihiro Suda
(The University of Tokyo)

191 Further Promotion of ASV (Advanced Safety Vehicle) in Order to Advance Automated Driving

Nana Takahashi · Ayumu Shinohara · Hideki Hayashi
(MLIT)
Toru Kojima (NALTEC)
Nobuhito Kiuchi (MLIT)

192 Occupant Safety Use Cases in Highly Automated Vehicles

Genis Mensa · Maria De Odriozola (Applus+ IDIADA)

193 Study of Road Facility's Application to Autonomous Driving

Takeki Ogitsu (Gunma University)
Yoshikazu Takahashi (Nippon Paint Industrial Coatings)
Chihiro Komine (Nippon Mobility)

[12:10~13:00]

44 Social Change and Next Generation Mobility II

<OS> Takahiro Suzuki (Tohoku University)

194 A Proposal for Personal Mobility for a Decarbonized Society

Kenji Morita (JARI)

195 A Study on Reduction of Walking Load by Traction using the Electric Wheelchair

Hideaki Inoue · Yoshito Ikemata · Hiroaki Fujii
(Teikyo University)

416+417 (4F)

[9:30~11:35]

45 New Development of The Energy Storage System Technology I

<OS> Noriko Yoshizawa (AIST)

197 Mass Production of Graphene Composites as Next-Generation Capacitor Materials for Automobiles

Jie Tang · Yukinori Hato (Materials Innovation Tsukuba)

198 3D Structural Analysis of Lithium Ion Secondary Battery Material

Yoshitake Honda · Shusaku Ogiu · Norio Saito ·
Keita Hiraka · Ayano Isoda · Keigo Atobe ·
Tomonori Ishigaki · Toru Akiba (Nissan ARC)

199 Application of Bipolar Type Nickel Metal Hydride Batteries to Electrified Vehicle

Motoyoshi Okumura · Hiroyuki Kaiya · Shigeru Fukuda ·
Satoshi Morioka · Daiki Terashima · Masanobu Ouchi ·
Junta Katayama · Isao Takahashi · Koji Nagai
(Toyota Motor)

200 Degradation Analysis of Sulfide-Based All-Solid-State Batteries via Cycle Testing

Keisuke Ando · Tomoyuki Matsuda (JARI)
Takuya Miwa · Mitsumoto Kawai (LIBTEC)
Daichi Imamura (JARI)

- 201 Investigation of Cylindrical Lithium-Ion Battery Fire Suppression using Liquid-Submerged Technique
Pongkorn Meelapchotipong · Chinda Charoenphonphanich (KMITL)
 Nattanai Kunanusont · Manop Masomtob (National Energy Technology Center)

【12:35~14:15】

46 New Development of The Energy Storage System Technology II
 <OS> Kazuhito Kishi (Ricoh)

- 202 Development of Thermal Models of Lithium-ion Batteries for Electric Vehicles
Tomoyuki Matsuda · Masao Myojin · Keisuke Ando (JARI)
 Takahisa Muta · Hirofumi Yasuda (LIBTEC)
 Daichi Imamura (JARI)
- 203 A Study on a Variable Battery Connection and Quick Charging Behaviors
 -A Report of Simulations and Experimental Results-
Masayoshi Wada (Tokyo University of Science)
- 204 Potential Analysis and Interface Technology of Battery Swapping EVs
Masanori Ishigaki · Keisuke Ishikawa · Kosuke Tahara · Takaji Umeno (Toyota Central R&D Labs.)
- 205 Optimized Design of Solar Power for Virtual Grid Community using Electric Vehicles
Hideyuki Chisaka · Tsuguhiko Nakagawa (Gifu University)

501 (5F)

【9:30~10:45】

47 Driver Model
 Yoshikazu Hattori (Woven Core)

- 206 A Study on Short-Term Future Vehicle Speed Prediction using Gaussian Mixture Regression
Sangtaek Jun · Kim Soonhyo · Kazushi Sanada (Yokohama National University)
 Hajime Umezu · Yui Nishio (Honda Motor)
- 207 Effect of Input Data on Model Accuracy in NARX Driver Model
Harushi Nagatsuma · Shoko Oikawa · Toshiya Hirose (Shibaura Institute of Technology)
- 208 Motion Planning and Tracking for Overtaking Vulnerable Road Users Considering Individual Driving Style
Manh Dung Vu · Hirofumi Aoki · Dong Haitao · Sueharu Nagiri (Nagoya University)
 Thanh Tung Nguyen (Hanoi University of Science and Technology)
 Anh Son Le (Phenikaa University)
 Tatsuya Suzuki (Nagoya University)

【12:10~14:15】

48 Advanced Diesel Engine Systems and Technologies
 <OS> Tomohiro Shimazu (Industrial Power Alliance)

- 209 Kinetic Energy Conversion Process in a Non-Evaporating Diesel Spray
Dai Matsuda · Eriko Matsumura · Jiro Senda (Doshisha University)

- 210 Quantitative Analysis of Lubricant Oil Splash by Impingement of Spray Droplets on Lubricant Film in Diesel Engine (Part 2)
 -Investigation of the Influence of K-Factor and Non-Dimensional Film Thickness on Lubricant Splash Volume-
 Hironari Maeta · Daina Umehara · Ippei Kimura · Eriko Matsumura (Doshisha University)
- 211 Infrared High-Speed Thermography of Combustion Chamber Wall Impinged by Diesel Spray Flame
 -Effects of Wall Surface Roughness on Heat Transfer-
Tatsuki Takahashi · Yuusei Miyagawa · Hiroyuki Kinoshita · Yohei Tanaka · Shoichi Motegi · Tetsuya Aizawa (Meiji University)
- 212 Thermal Efficiency Improvement for a Diesel Engine Achieved by High-Heels Heat Release Rate Profile
Kazumasa Watanabe · Noboru Uchida (New A.C.E Institute)
- 213 Study on Applying Machine Learning to Calibrate Turbocharger Model Parameters for Workload Reduction and Accuracy Improvement (Second Report)
Kei Izawa · Yusuke Umehara · Kaname Naganuma · Minoru Nakazawa (Kanazawa Institute of Technology)
 Yuta Takahashi · Hitoshi Matsui (Isuzu Motors)

502 (5F)

【9:30~11:35】

49 The Latest Noise and Vibration Technologies and Sound Design Technologies IV
 <OS> Masashi Komada (Toyota Motor)

- 214 Sound Transmission Loss of Multi-Layered Sound-Proof Material with Edges of Cut out Compressed
Takashi Yamamoto (Kogakuin University)
 Daisuke Kato (Howa)
- 215 Development of a Method to Predict Vehicle Body Openings for Improving Sound Insulation
Yusuke Akaike · Hirotaka Shiozaki · Masayuki Taketani · Yasuma Miyasaka (Mitsubishi Motors)
- 216 Design of Microscopic Perforated Absorber Considering Manufacturability and Application to Road Noise Control
Yosuke Komatsu (Mahle Filter Systems)
- 217 Evaluation of Parts Deformation Mode in Natural Vibration of Vehicle Body
Takeshi Kawachi · Nasa Kawagoshi (Nippon Steel)
- 218 Design Technique for Reducing Broadband Frequency Vibration on Structures Based on Vibration Energy Flow Analysis
Keisuke Abe · Yunosuke Tanaka (SUBARU)

【12:35~15:15】

50 The Latest Noise and Vibration Technologies and Sound Design Technologies V
 <OS> Hisayoshi Matsuoka (Nissan Motor)

- 219 Challenges in Optimising System NVH Performance of Electrified Powertrains through Developing Correlated Component Models
Jordan Craven · Michael Bryant · Chris Norton (Drive System Design)
- 220 An Enhancement of Development Process of Fuel Efficiency and Torsional NV using Transmission VRS
Hiroki Kuwamoto · Takeshi Kitahata · Takeshi Ishiwada · Masayoshi Ota · Hirokazu Kurihara · Hiroaki Sumitomo (Toyota Motor)

221 Nonlinear Vibration Analysis of Vehicle Drivetrain using Return Map

Yoshihiro Yamakaji (Exedy)
Nobutaka Tsujiuchi · Akihito Ito (Doshisha University)

222 Description of Vibration Phenomena in Steering Response by Energy Transmissibility

Akihito Kurokawa · Toru Yamazaki · Kazuro Iwata · Kai Kurihara (Kanagawa University)
Masanori Kawagoe (Mitsubishi Motors)
Yukinobu Nakamura (Information Services International-Dentsu)

223 Development of Thermal Management and Noise/Vibration Control Material Model Technology by Model-Based Research (MBR) (2nd Report)

Keisuke Yamakawa (Mazda)
Takashi Yamamoto (Hiroshima University/Kogakuin University)
Daiji Katsura · Minoru Inoue (Mazda)
Nozomu Hatakeyama · Ryuji Miura · Junnosuke Okajima (Hiroshima University/Tohoku University)
Kenji Inaba · Yukie Ishizawa (Hiroshima University)
Hideyuki Yukawa (Mazda/Hiroshima University)
Hiroyuki Ito (Toyo Seat)
Takayoshi Ishimoto (Kogakuin University/Hiroshima University)
Joji Ohshita (Hiroshima University)

224 Evaluation of a New Accelerated BEM Method (H-Matrix) to Support Vehicle Pass-By Noise and Acoustic Vehicle Alerting System Design and Performance Prediction

Massimiliano Calloni · Anton Golota · Lassen Mebarek · Johnny Lefebvre · Yi Guan · Chadwyck Musser (ESI)

503 (5F)

[9:30~11:35]

51 Advanced Gasoline Engine Systems and Technologies IV

<OS> Satoaki Ichi (Kawasaki Motors)

225 Practical Use of 1D Engine Model to Improve Powertrain Development Efficiency (First Report)

-Modeling Process for High Accuracy 1D Engine Simulation-

Hiromitsu Matsuda · Shunichi Kubota · Shunsuke Goto · Takahiro Taira · Junya Yoshizawa · Seiichi Nishikita · Osamu Suzuki · Koichi Takase · Shinichi Kakami · Masaki Suzuki (Honda Motor)

226 Practical Use of 1D Engine Model to Improve Powertrain Development Efficiency (Second Report)

-Concurrent Development using Real-Time Engine Model-

Kenichiro Ogata · Takashi Furuya · Masayuki Hagiwara · Hiromitsu Matsuda · Hidekazu Hironobu · Keiji Shiota (Honda Motor)

227 Powertrain On Board Diagnosis Development by Model Application

-Efficient Development Process-

Kazuki Tsurumi · Shinji Satoh · Masaya Sunago · Takuya Matsumoto · Tomoyuki Tsuji · Takuya Atsumi (Toyota Motor)

228 Influence of Combustion Mode on Heat Loss Distribution in Gasoline Engines

Hirotsugu Matsuda · Kenji Uchida · Yuji Harada · Hiroyuki Yamashita (Mazda)

229 Development of Model-Based Control System for a Low Pressure Loop EGR with a Negative Pressure Control Valve

Taichi Ando · Yukiyo Yamada · Kenji Suzuki · Tomohiro Yanaka (Nissan Motor)

[12:35~13:50]

52 The Latest Technology Trends in Automotive Energy

<OS> Tsutomu Kikuchi (Nissan Motor)

230 Supply of Carbon-Neutral Drop-in Fuels by the Biomass-Nuclear Synergistic Process

Masao Hori (Nuclear Systems Association)

231 Potential for Hydrocarbon Fuels to Extend the Lean Limit of Super Lean-Burn Engines (Part III)

Yuki Yasutake · Taketora Naiki · Ken Obata · Manabu Watanabe (ENEOS)

232 Effects of Fuel Components on Lean and EGR Diluted Combustion in Gasoline Engine

Kazuki Kaneko · Naoyoshi Matsubara · Nozomi Yokoo · Koichi Nakata (Toyota Motor)
Taketora Naiki · Ken Obata · Manabu Watanabe (ENEOS)

301 (3F)

[9:30~11:10]

53 Active Safety and Advanced Driver Assistance Systems I
<OS> Kenta Maeda (Hitachi)

- 233 An Analysis of the Relationship between Drivers' Behavior Types and Law Violations in Traffic Accident
-Accident Statistical Analysis by Drivers' Behavior Types and Law Violations-
Yasufumi Sekine (Fukuyama University)
- 234 Development of Visibility Estimation Model on Winter Road Conditions using Image-based Driver's Visibility Index by On-Board Video Camera
Yuki Nakamura · Toru Hagiwara (Hokkaido University)
Yasuhiro Nagata (Hokkaido Development Engineering Center)
Sho Takahashi (Hokkaido University)
- 235 Relationship between Driving Risk Assessment Test using Touch Panel Display and Compensation Intention and Driving Behavior
-Study on Driver Characteristics for Delaying Driving Cessation (35)-
Kan Shimazaki (Kindai University/Nagoya University)
Masae Kojima · Hiroko Shinkai · Makoto Inagami · Hirofumi Aoki (Nagoya University)
- 236 Examination for Contact Risk During Merging using Vehicle Trajectory Data Observed
Takashi Kodama (Hanshin Expressway)
Yoann Pencreach (Forum8)
Shin Hashimoto · Masakazu Nakanishi · Jun Tanabe (Regional Futures Research Center)

[12:10~14:15]

54 Active Safety and Advanced Driver Assistance Systems II
<OS> Yuichi Omoda (Japan Automobile Research Institute)

- 237 An Effectiveness Estimation Method for Active Safety Systems Based on Crossing Collision Spreadsheet Database
Masami Aga (Toyota Motor)
Masumi Nakajima (Yamaha Motor)
Shinji Hamada (Kawasaki Heavy Industries)
Kenji Kawaguchi (Institute for Traffic Accident Research and Data Analysis)
- 238 Research on Offering Information to Drivers Aiming to Help Prevent Car-to-Bicycle Crossing Collisions
Asuka Harada · Hitoshi Kanamori (Nagoya University)
Masami Aga · Yasunobu Yokoi (Toyota Motor)
Nihan Karatas · Yuki Yoshihara · Takahiro Tanaka (Nagoya University)
- 239 Infrastructure Alert System Based on Intersection Monitoring using Measurement Sensor and Infrared Camera
Mai Saito · Chotaro Yamamoto · Hiroto One · Takumi Masamoto · Ang Li · Emil Dobber · Houcheng Li · Toshio Ito (Shibaura Institute of Technology)
Hiroyuki Nomura · Kazuhiro Oda (Continental Automotive)
- 240 Proposal of an Active Safety System for Motorcycle Riders Based on Structural Equation Modeling
Ryo Yamamoto · Kifle Hailu · Keisuke Suzuki (Kagawa University)

- 241 Investigation of Effectiveness and Conflict of Road Projection Lamp, using VR System
-Accident Prevention for Bicycle Rider-
Kohei Murata · Tatzuma Kitazawa · Hiroyuki Ishida (Koito Manufacturing)

[14:55~17:00]

55 Active Safety and Advanced Driver Assistance Systems III
<OS> Tsukasa Shimizu (Toyota Central R&D Labs.)

- 242 Stochastic Reliability Estimation of Deep Learning for Parking Vehicle Shape Estimation using Millimeter Wave Radar
Tokihiko Akita · Haruya Kyutoku (Toyota Technological Institute)
Yusuke Akamine (SOKEN)
- 243 Proposal of a Decision-Making Method for Initiate Lane Change Support Functions based on Investigation of the Impact on Other Vehicles Resulting from Lane Change Action
Nozomu Hirose · Chihiro Oguro · Daichi Katou (Honda Motor)
- 244 Development of Path Planning Algorithm for Self-Parking Decrease Dependence of Maneuver Position
Noriyasu Hasejima · Takehito Ogata (Hitachi)
- 245 Development of AEBS for Trucks and Buses
Naomi Yamanaka · Shunsuke Hataya · Naoto Kota · Keitaro Sakurai (Hino Motors)
- 246 Efficient Development and Testing Approach for Successful GSR (General Safety Regulation) Homologation
-From Legislation to Successful Verification and Validation-
Philipp Quinz · Benjamin Wimmer · Christoph Wolf (AVL List)
Kazutomo Itoh (AVL Japan)
Gernot Hasenbichler (AVL List)

302 (3F)

[9:30~11:35]

56 Automated Driving/System Control
Shin Kato (AIST)

- 247 Construction of an Automatic Operation System for Large Dump Trucks at a Construction Site
Masayuki Nishida · Yuki Sakamoto · Atsushi Oshiba · Yosuke Takahashi · Chunyu Zhang · Yosuke Maeda (Hino Motors)
- 248 The Redundant System for Fail-Safe Operation in the Event of Malfunction
Takefumi Yamada · Naoki Isokane (Woven Core)
Keita Kinoshita · Satoshi Takahashi (Toyota Motor)
- 249 Classification of Minimal Risk Maneuver for Automated Driving
Junji Yoshino · Toshihiro Hiraoka · Keisuke Shimono · Manabu Umeda · Yoshihiro Suda (The University of Tokyo)
- 250 Passing through the Intersection Based on the Blind Spot Information for Automated Driving
Keisuke Yoneda · Naoki Ichihara · Tadashi Okuno · Naoki Suganuma (Kanazawa University)
- 251 Driving Trajectory of Autonomous Driving Based on HD Map
Shun Fujioka · Takao Kashu · Shuichi Yokokawa (Woven Core)
Toshikazu Ozeki (Toyota Mapmaster)

【12:35~14:40】

57 Automotive Control and Modeling
-New Issues and New Approaches-
<OS> Toshihiro Aono (Hitachi)

- 252 Blackbox Analysis of Automotive Systems by Logic and Optimization
-Software Science Approaches to Efficiency and Deployability-
Ichiro Hasuo (National Institute of Informatics/SOKENDAI)
Masaki Waga (Kyoto University/National Institute of Informatics)
Zhenya Zhang (Nanyang Technological University)
Étienne André (Université de Lorraine)
Paolo Arcaini · Fuyuki Ishikawa · Masaaki Konishi · James Haydon (National Institute of Informatics)
- 253 Optimizing Electric Energy Consumption on Longitudinal Motion Planning for EV Cruising Task
Gaku Takano · Makoto Obayashi · Keisuke Uto (DENSO IT Laboratory)
- 254 Monte Carlo Tree Search and Knowledge Graphs for Decision Making in Autonomous Vehicles
Irene Cara · Mauro Comi · Beatrice Masini · Beatrice Masini · Ihsan Yalcinkaya · Rutger Beekelaar (TNO)
- 255 Model Predictive Control of Fuel-Efficient Vehicle-Following Model Considering Nonconvex and Discontinuous Characteristics of Engine and its Low-Computational-Cost Implementation
Hongjia Ou · Andreas Themelis · Tsuyoshi Yuno · Taketoshi Kawabe (Kyushu University)
- 256 Deep Neural Network Modeling of Diesel Engine for Application of Model Predictive Control
Takuma Degawa (Transtron)
Masakazu Mukai (Kogakuin University)
Masatoshi Ogawa (Transtron/Fujitsu)
Takayuki Takei · Toshikado Akimichi · Shigeaki Kurita (Transtron)

【15:20~16:35】

58 ADAS Scenario and Safety
Toshiyuki Sugimachi (Tokyo City University)

- 257 Determining Traffic Safety Impact of AD using a Multi-Level Approach
Marcel Meeuwissen · Eleni Charoniti · Gerdien Klunder (TNO)
- 258 StreetWise: Scenario-Based Approach to Describe Real-World Traffic
Olaf Op den Camp · Erwin de Gelder · Jeroen Uittenbogaard · Jeroen Broos (TNO)
- 259 Effect of Speeds and Time-Gaps as Setting Conditions of Adaptive Cruise Control System on Driver's Risk Feeling when the Leading Vehicle Decelerates on Snowy Road Surface
Shuhei Wada · Sho Takahashi · Toru Hagiwara (Hokkaido University)
Kazunori Munehiro (Civil Engineering Research Institute for Cold Region)
Minoru Okada (DENSO)
Toshiyuki Naito (Docon)

303 (3F)

【9:30~10:45】

59 Crash Safety
<OS> Mitsutoshi Masuda (Toyota Motor)

- 260 Frontal Impact Crash Test for Powered Two-Wheelers
Karl Morgans · María del Mar Rasines Laudes · Genís Mensa · Maria de Odriozola (Applus+ IDIADA)
- 261 Side Impact Crash Test for Powered Two-Wheelers
Maria de Odriozola Martínez · Genís Mensa · Simona Roka · Karl Morgans · María del Mar Rasines Laudes (Applus+ IDIADA)
- 262 Development of Human Body FE Model with Different Body Shapes Based on CT Images
Yuva Takeuchi · Yoshihiko Tanaka · Koji Mizuno (Nagoya University)
Minoru Yamada · Yoshitake Yamada · Yoichi Yokoyama · Masahiro Jinzaki (Keio University)

【12:10~14:15】

60 Analysis of Real World Accidents and Safety Measures
-Causes of Accident and Safety Issues-
<OS> Koji Mizuno (Nagoya University)

- 263 Evaluation of Traffic Accident Risk for Road Alignment using Real Vehicle Cockpit with Wide Visibility Driving Simulator
Seiya Tanaka · Kazunari Tsuiki · Yusuke Uchida (Suwa University of Science)
Akinori Yamashita (Japan Radio)
Masashi Makita (Teikyo University)
Hiroshi Kuniyuki (Suwa University of Science)
- 264 A Study on Operation Method for Emergency Stop Switch While Driver's Sudden Illness
Toshiaki Tanaka · Shunta Kobayashi (Suwa University of Science)
Daisuke Ito (Kansai University)
Hiroshi Kuniyuki (Suwa University of Science)
- 265 Analysis of Side Impact Airbag Performance in NASS CDS III
Kazuo Higuchi (Unaffiliated)
- 266 Construction of Collision-Type Prediction Models Based on Pre-Crash Data for Advanced Driver Assistance Systems
Junhao Wei · Yusuke Miyazaki (Tokyo Institute of Technology)
Kouji Kitamura (AIST)
Fusako Sato (JARI)
- 267 Construction of Injury Prediction Model for Car Occupants using Gradient-Boosting Decision Tree Model
Keita Takahashi · Yusuke Miyazaki (Tokyo Institute of Technology)
Koji Kitamura (AIST)
Fusako Sato (JARI)

304 (3F)

[12:10~13:25]

61 The Latest Technology in Thermal Management and Fluid Dynamics Contributing to the Mobility Evolution
-Aerodynamics and Aeroacoustics-
<OS> Kota Fukuda (Tokai University)

268 The Impact of Speed and Blockage Ratio on the Aerodynamics of the Evacuated Tube Transportation System

Zhiwei Zhou · Chao Xia · Xizhuang Shan (Tongji University)
Zhigang Yang (Tongji University/Beijing Aeronautical Science and Technology Research Institute)

269 Influence of Aerodynamic Pressure Drop in Cooling Module on Backflow in PHEV Condenser

Haibo Wu (Tongji University/SAIC Volkswagen Automotive)
Sichuan Xu (Tongji University)
Jiangbin Zhou · Wenshi Cui (SAIC Volkswagen Automotive)

270 Flow Field Analysis of a Racing Car based on Dimensionality Reduction and Clustering

Michaela Reck (Technical University of Munich)
René Hilhorst (Toyota GAZOO Racing Europe)
Marc Hilbert (Leiden University)
Thomas Indinger (Technical University of Munich)

[14:05~16:10]

62 The Latest Technology in Thermal Management and Fluid Dynamics Contributing to the Mobility Evolution
-Computational Fluid Dynamics (CFD)-
<OS> Toru Takabayashi (Honda Motor)

271 Improvement of Knock Resistance of Spark-Ignition Gasoline Engines using 3D Combustion Simulation based on the ECFM-RANS Model

Tomonori Kuroki · Kazuhito Okui · Yuta Shima · Yasuhisa Ono (Daihatsu Motor)

272 Evaluation of Fuel Injector Atomization Process by Detailed Numerical Analysis of Two-Phase Flow

Taisuke Nambu · Yasuhiro Mizobuchi (JAXA)
Yukari Sakano · Tetsuya Sato (Waseda University)

273 Development of a New Cross-Sectional Shape of 2-Piece Oil Control Ring by CFD Analysis

Yushi Abe · Toshiyuki Sakai · Akira Hikone · Masayuki Ohira · Naoki Umeda (TPR)

274 Development of Control Technology for Handling Abnormal Combustion during High-Speed Operation

Yoshihisa Nakamoto · Kiyotaka Sato · Mitsugu Mera · Takamasa Adachi · Masatoshi Seto · Yudai Koshiro · Ryohei Ono · Daichi Takashima · Keiichiro Sueshige · Hiroyuki Yamashita (Mazda)

275 Aerodynamics Control of a Simplified Vehicle Model Affected by an Overtaking Vehicle using Continuous Jet

Chao Yan · Takuji Nakashima · Hidemi Mutsuda · Taiga Kanehira (Hiroshima University)
Itsuhei Kohri (Tokyo City University)
Makoto Tsubokura (Riken/Kobe University)

311+312 (3F)

[9:30~11:10]

63 New Technologies for Advanced Measurements and Diagnostics I
<OS> Atsushi Shimada (Hitachi)

276 International and Domestic Trends of Environmental Regulations on Vehicles
-Towards Carbon Neutrality-

Makoto Tanikura (MLIT)

277 Real Road Test Reproduction Method of Battery Electric Vehicles in the Chassis Dynamometer Test Cell

Yoji Komatsu (HORIBA)
Kunio Tabata · Alex Mason (HORIBA Mira)
Masaru Uraoka (HORIBA)

278 A Study on Real Driving Emissions Measurement Test Method by using Driving Robot for Passenger Vehicles

Nobunori Okui (NALTEC)

279 Effects from Ambient Temperature and Humidity on Emission Measurements of Light Duty Vehicles

Noritsune Kawaharada · Nobunori Okui (NALTEC)

[12:10~13:25]

64 New Technologies for Advanced Measurements and Diagnostics II
<OS> Kotaro Tanaka (Ibaraki University)

280 Estimation of Hydrogen and Oxygen Concentrations in Gasoline Engine Exhaust Gas using FTIR Analysis

Makoto Nagaoka · Yuji Gyoten · Takashi Saito · Hirotaka Yabushita (HORIBA)

281 Evaluation of the Life Cycle Greenhouse Gas (GHG) Emissions of a Lightweight Steel Body and Part

Masahiro Kubo · Keinosuke Iguchi · Shunji Hiwataishi (Nippon Steel)

282 A Novel Analytical Approach using TOF-SIMS for Imaging the Distributed States of Constituent Components in Friction Materials

Kenta Kurimoto · Mitsuki Yaguchi (Nisshinbo Brake)

[14:05~15:45]

65 New Technologies for Advanced Measurements and Diagnostics III
<OS> Takayuki Fuyuto (Toyota Central R&D Labs.)

283 Proposal of a Method for Predicting the Temperature and Humidity Deterioration Life of PA66 in an Actual Environment using an Enhanced Arrhenius Model

Takeru Fukuda · Ryo Hayakawa (Honda Motor)

284 Quality Abnormality Prediction Technology Utilizing Rust Prevention Quantitative Evaluation Method by Model-Based Research

Teruaki Asada · Katsunobu Sasaki · Tatsuya Ezaki · Tsutomu Shigenaga · Akihide Takami (Mazda)

285 Measurements of Car Body Deformation in ED Paint Tank and oven by Water- and Heat-Resistant Displacement Meter and Comparison with CAE

Takeshi Kashiyama · Toshiro Ohori · Manabu Shiohara · Yoshiyuki Murano · Takuya Matsumoto (Suzuki Motor)

- 286 Extraction of Failure Signal Feature Based on Physical Modeling for the Failure of Mechanical Device and Feedback to the Design by Set-Based Design Method
Haruo Ishikawa (The University of Electro-Communications)
 George Kuwabara · Yasuhiro Fukunaga (Photron)

315 (3F)

[9:30~11:35]

- 66 Dynamics, Control and Safety of Two-wheeled Vehicles -Motorcycles, Bicycles, and PMV-
 <OS> Tomoya Kitani (Shizuoka University)

- 287 Using Omnidirectional Cameras to Measure Position of a Motorcycle
Junji Hirasawa
 (National Institute of Technology, Ibaraki College)
- 288 Analysis of the Effect of Motorcycle Structural Flexibility on Weave Mode 2nd Report
 -Solution using a Pseudo 10 Degree Frame Flexibility Model-
Tsuyoshi Katayama · Kenta Furusawa · Akira Takahashi · Takahiko Yoshino (Kurume Institute of Technology)
- 289 Comparison of the Effect of Frame Damping Characteristics of Four Models on Wobble Mode of Motorcycle
Takahiko Yoshino · Akira Takahashi · Kenta Furusawa · Tsuyoshi Katayama (Kurume Institute of Technology)
- 290 Development of Motion Analysis Device for Rider and Motorcycle
Masakazu Tomosada · Masaru Katayama · Yoshihiro Fujioka · Yukito Fukushima · Daiki Izumi · Soichiro Ikeda · Takeshi Kobuki · Akiyasu Takami
 (National Institute of Technology, Matsue College)
- 291 Design Requirements for a Personal Mobility Vehicle (PMV) with an Inward Tilt Mechanism to Maintain Straight Running on Slant Roads and Rutted Roads
Tetsunori Haraguchi (Nihon University/Nagoya University)
 Tetsuya Kaneko (Osaka Sangyo University)
 Ichiro Kageyama (Nihon University)

[12:35~14:15]

- 67 Engineering-Ethics Today
 <OS> Akira Higashimata (Nissan Motor)

[OS Keynote Address]

- 292 Engineering-ethics, Present and Future
Yasuki Motozawa (Shiga University of Medical Science)
- 293 Ethics as Social Acceptance
Norihisa Miki (Keio University)
- 294 Analyze Decision Models and Interactions among a Pedestrian and Drivers at an Unsignalized Intersection
Toru Watanabe · Takuma Yamaguchi · Hiroyuki Okuda · Tatsuya Suzuki (Nagoya University)
 Ryo Wakisaka · Kazunori Ban (Toyota Technical Development)
- 295 Consideration for Autonomous Driving Technology to Bring Well-Being to Society
Atsushi Iwamura · Hidekazu Nishimura (Keio University)

414+415 (4F)

[9:30~12:10]

- 68 Material I
 Yasuhiro Matsui (NTSEL)
- 296 Plastic Flow Joining and Strength Evaluation of Steel and Aluminum Alloys
Kaoru Mannami · Yuto Ando · Souichiro Nishino (Ibaraki University)
 Ryo Tominaga · Naonori Ishii (Aoyama Seisakusho)
- 297 Evaluation of Joining Strength in Friction Stir Welding of Wrought and Die Casting Aluminum Alloys
Yuki Matsuo · Souichiro Nishino (Ibaraki University)
 Eitaro Yukutake (Industrial Technology Innovation Center of Ibaraki Prefecture)
- 298 Aluminum Die-Cast/Rolled Plate Friction Stir Spot Welding
Kojiro Tanaka · Katsuya Nishiguchi · Satoko Shimada (Mazda)
 Yukihiro Sugimoto (Hiroshima University)
- 299 Textures Analysis using Neutron All Directions Scattering for Dissimilar Material Junctions
Takanori Itoh (Nissan ARC)
- 300 Observation of Aluminum-Adhesive Interface using Scanning Transmission X-ray Microscope
 Qiuyi Yuan · Takanori Itoh (Nissan ARC)
- 301 Development of Structural Adhesive with High Corrosion Resistance
Motoyasu Asakawa · Kazuhi Koga · Katsuhiko Fukuda · Nobuaki Watanabe · Hiroyuki Nagatomo · Tatsuya Ezaki (Mazda)
 Daisuke Makino · Yusuke Murachi · Yuuki Toude (Cemedine)

[13:10~14:50]

- 69 Material II
 Fumihiko Gejima (Nissan Motor)
- 302 Fatigue Strength Prediction using an Effective Stress Model in a Stainless Steel Sheet
Gyoko Oh (Tokyo Roki)
- 303 Prediction of the Failure in Bending for the Valorization of the 2nd and 3rd Generation of Steels for Hot Stamping
 Ludovic Dormegny · Yves Drouadaine · Pascal Dietsch · Clément Philippot · Dominique Cornette · Masahito Katsukura (ArcelorMittal)
- 304 Effect of Load Mode on Fatigue Strength of 1180MPa Class Recycled Steel
Nobuo Nagashima · Masao Hayakawa · Kotobu Nagai · Hiroyuki Masuda (National Institute for Materials Science)
 Eizaburo Nakanishi · Nobufumi Nakanishi · Masaru Iwasaki (Tokyo Steel)
- 305 Improvement of Bending Crash Energy Absorption and Vibration Characteristics of Ultra High Strength Automotive Structural Members with Multi-Material Structure
Kazuhiko Higai · Takeshi Shiozaki · Yoshikiyo Tamai (JFE Steel)

[15:30~17:10]

70 Material III
Kenichi Furukawa (Suzuki Motor)

- 306 Improvement of Fire Resistance of Fiber Reinforced Plastics
Takumi Sugiura · Yuto Goto · Asami Nakai · Masayuki Okoshi (Gifu University)
Haruhiko Nakamura · Makoto Murai (DaikyoNishikawa)
Junichi Ogawa · Takuya Tanigawa · Shuhei Yasuda (Mazda)
- 307 Internal Structure and Mechanical Properties of Injection Molded FRP Bolt with High Fiber Content
Hayato Kikuta · Akio Ohtani (Kyoto Institute of Technology)
- 308 Continuous Molding for Thin Plate of Carbon Fiber Reinforced Thermoplastics
Keisuke Takamura · Ryusei Yasutomo · Asami Nakai (Gifu University)
Noriaki Nakamura (Tokyo Rope International)
Arata Anzai (Tokyo Rope)
- 309 Strength Evaluation of Injection Molded CFRTP based on Fracture Surface Analysis
-Effect of Injection Molding Condition-
Taichi Umezu (Ibaraki University)
Hidemaru Sootome (Industrial Technology Innovation Center Of Ibaraki Prefecture)
Akinori Hoshikawa · Souichiro Nishino (Ibaraki University)

416+417 (4F)

[9:30~11:35]

71 Concept Test and Cabin Environment of Vehicle
Yasufumi Sekine (Fukuyama University)

- 310 Energy Consumption of Automotive Cabin Air Purification Systems
Gursaran D. Mathur (Highly-Marelli)
- 311 Prediction of Improvement in EV Electricity Costs with Phenolic Foam Insulation (First Report)
Mitsuru Nishikawa · Reoto Ai (Asahi Kasei)
Yoshiyuki Oe (Asahi Kasei Construction Materials)
Miho Konishi (Asahi Kasei)
Daichi Fukushima · Taiji Mochizuki · Satoshi Takaki (Sumitomo Electric Industries)
- 312 A Study on Selection Method of Survey Cooperators Considering Psychological Distance Scale in Concept Test
Masaya Ando (Chiba Institute of Technology)
Akira Saito · Motoki Maekawa · Hideki Kobayashi (Toyota Motor)
- 313 Relationship between Kansei Evaluation and Physical Characteristics of Haptic Switches
Hajime Yasuda · Tomotaka Igarashi (Nissan Motor)
Akinari Hirao (AIST)
- 314 Study on Ventilation Volume of EV in the Case of Transport for COVID-19 Patient
Koichi Oshino (Unaffiliated)

[12:35~15:15]

72 Electronics and Control
Yu Takano (SUBARU)

- 315 Co-Design of Advanced Powertrains through Modular Energy Management
-Creating Automated Control Generation for Innovative Powertrains-
Steven Wilkins · Avedis Dadikozyan (TNO/Technical University of Eindhoven)
Paul Mentink · Frank Kupper (TNO)
- 316 ENSEMBLE: Overview and Main Results
Antoine Schmeitz · Dehlija Willemsen · Koichi Kawaguchi (TNO)
- 317 Thin Printed Piezoelectric Sensors for Human Machine Interfaces
Peter Zalar · Peter Rensing · Marieke Burghoorn · Joost Fijn · Edsger Smits · Jeroen van den Brand (Holst Centre/TNO)
- 318 Materials Informatics and Digital Transformation System for Automotive Material Development
Ryo Aoki · Kazuto Ide · Masao Yano · Noritsugu Sakuma · Tetsuya Shoji (Toyota Motor)
- 319 Next Service Date Forecasting for Commercial Vehicles
-Using Large Amount of Time-Series Connectivity Data from Global Tractor Fleet-
Gei Chiara · Zivadinovic Milan · Brunner Dominik · Jukic Gordana · Manda Harisyam · Schagerl Gerhard (AVL List)
- 320 Approach to Improve the Efficiency of Software Development for Advanced Driver Assistance Systems by using Continuous Integration (CI)
Takuro Yuhara · Keisuke Sato · Tomonori Nambu · Kazuma Sugimoto (Nissan Motor)

[15:55~17:10]

73 Tire/Road Characteristics, Contact Properties and Related Technologies
-Tire Mechanisms Toward the Future-
<OS> Daisuke Yokoi (Suzuki Motor)

- 321 Construction of Characteristic Measurement System for Ordinary Road Friction
Ichiro Kageyama (Consortium on Advanced Road Friction Database/Nihon University)
Yukiyo Kuriyagawa (Nihon University)
Tetsunori Haraguchi (Consortium on Advanced Road Friction Database/Nihon University)
Tetsuya Kaneko (Osaka Sangyo University)
Minoru Nishio (Absolute)
Gaku Matsumoto (Nihon Michelin Tire)
- 322 Air Gap Design of In-Tire Repeater Coil for Dynamic Wireless Power Transfer System Considering Tire Deformation
Shota Yamada (The University of Tokyo)
Hayato Sumiya (The University of Tokyo/DENSO)
Tatsuya Yanagi (The University of Tokyo/Rohm)
Osamu Shimizu · Hiroshi Fujimoto (The University of Tokyo)
Isao Kuwayama · Yasumichi Wakao (Bridgestone)
Takahiro Ohyama (NSK)

- 323 Measurement of Strain Distribution, Acceleration, and Sound Pressure in Tread Blocks of Rotating Tires
Masami Matsubara · Kohei Ishii · Shozo Kawamura
 (Toyohashi University of Technology)

501 (5F)

[9:30~11:35]

74 xEV I

<OS> Takashi Majima (IHI Inspection & Instrumentation)

- 324 Development of a High Power Density In-Wheel Motor using Halbach Array Magnets
Makoto Ito · Tetsuya Suto · Akeshi Takahashi · Takafumi Hara · Ryuichiro Iwano (Hitachi)
- 325 Development of Direct-Cooling Technology for In-Wheel Drive System
Tetsuya Suto · Makoto Ito · Akeshi Takahashi · Ryuichiro Iwano · Takafumi Hara (Hitachi)
- 326 Basic Study of Motor Drive System with Mechanical Winding-Changeover
Akeshi Takahashi · Shinji Sugimoto · Kazuo Nishihama (Hitachi)
 Katsuhiro Hoshino · Noriyuki Maekawa (Hitachi Astemo)
 Takatoshi Kushida · Hirotsu Otsuki (Hitachi Industrial Products)
- 327 Energy Loss Comparison of Traction Motor Winding Changeover Methods for Electric Vehicle
Keisuke Takeuchi · Akeshi Takahashi · Kazuo Nishihama (Hitachi)
 Katsuhiro Hoshino · Noriyuki Maekawa (Hitachi Astemo)
- 328 A Development of Short-Time Initial Rotor Position Estimation Technology Based on the Magnetic Saturation and Saliency of PMSM for xEV Applications
Hiroaki Sato · Shigehisa Aoyagi (Hitachi)
 Hirokazu Matsui (Hitachi Astemo)

[12:35~15:15]

75 xEV II

<OS> Osamu Shimizu (The University of Tokyo)

- 329 A Study of Inductance Estimation Method of Battery Pack for LC Resonance Prediction of Electric Vehicle Powertrain
 Toshitaka Iwase · Yasuyuki Moriyama · Tohru Shibata · Yihuang Wang · Yuichiro Nakashima (Toyota Technical Development)
- 330 Flux-based Cascade Vector Control for xEV Applications Reducing Calibration Time
Shun Taniguchi (Hitachi)
 Kentaro Matsuo (Hitachi Astemo)
 Kazuaki Tobarai · Toshiyuki Ajima (Hitachi)
 Kenichi Yoshida · Eigo Kishimoto (Hitachi Astemo)
- 331 Feasibility Study on Two-Speed Transmission using Selectable One-Way Clutch
Takafumi Hagita · Shinji Okada · Takaya Yamada · Osamu Katayama (NSK Warner)
 Sakiya Watanabe · Daisuke Gunji (NSK)
- 332 A Prediction of CO₂ Emissions by HEVs or EVs with Modified Drivetrains of Engine Powered Delivery Truck
Noritaka Matsuo (Matsuo Engineering Office)
- 333 A Study of Energy Management System for Hybrid Electric Vehicle using External Information
 Yui Nishio · Yutaka Murata · Takuro Koto · Masaki Ueno · Shinya Miwa (Honda Motor)

- 334 Optimization of Energy Management Strategy for PHEV Powertrain System based on Fuzzy Control
Haibo Wu (Tongji University/SAIC Volkswagen Automotive)
 Jiangbin Zhou (SAIC Volkswagen Automotive)
 Sichuan Xu (Tongji University)

[15:55~17:35]

76 xEV III

<OS> Takeshi Kato (Honda R&D)

- 335 Functional Integrated Electronics for HV Architectures -From Today's Dedicated Electronics to Multifunctional Power Supplies in Electric Vehicles-
Philip Brockerhoff · Christian Bottke · Thomas Kühner · Waldemar Heimann · Ayman Ayad · Patricia Schmusch · Martin Ehrmann · Takuya Mimori (Vitesco Technologies)
- 336 Novel Automatic Switching Technology for Transmitter Coil of Dynamic Wireless Power Transfer System
Masaya Takahashi · Yusei Nakayashiki · Mitsuru Shibamura · Kazuyuki Kato · Eisuke Takahashi · Nobuhisa Yamaguchi · Keisuke Tani (DENSO)
- 337 Evaluation of Road-Embedded Dynamic Power Transfer System for Outdoor Use Logistic Vehicle
Osamu Shimizu (The University of Tokyo)
 Kazuyoshi Hanabusa (TDK)
 Kota Arasaki (TDK-Lambda)
 Daisuke Gunji (NSK)
 Yuto Sakai (Shinmei Industry)
 Hiromori Ikeda (Toyota T&S Construction)
 Fuminori Matsuoka (Toyota Motor)
- 338 Verification of the Effect of Tire and Suspension Deformation on Power Transmission to the Coil Mounting Position for Dynamic Wireless Power Transfer
Havato Sumiya (DENSO/The University of Tokyo)
 Osamu Shimizu · Sakahisa Nagai · Hiroshi Fujimoto (The University of Tokyo)
 Shimpei Takita · Eisuke Takahashi · Nobuhisa Yamaguchi · Keisuke Tani (DENSO)
 Daisuke Gunji (NSK)
 Isao Kuwayama (Bridgestone)

502 (5F)

[9:30~11:10]

77 Gaseous-Fuel Engines and Carbon Neutral Technology for Gaseous-Fuel

<OS> Hiroshi Kawanabe (Kyoto University)

- 339 Magnetic Sector Hydrogen Analyzer for Direct and Continuous Wet Measurements of Engine Exhaust
Jorge E. Lamas · M. C. C. Laedan · Kenji Hara (HORIBA)
- 340 High Efficiency Hydrogen Internal Combustion Engine -Carbon Free Powertrain for Commercial Vehicles and Passenger Cars-
Bernhard Raser · Paul Kapus (AVL List)
 Peter Grabner (Graz University of Technology)
 Anton Arnberger · Renè Heindl · Michael Egert · Neil Kunder · Günter Fraidl · Michael Weissbaeck (AVL List)
- 341 Experimental H₂-ICE Study using a Heavy-Duty Single-Cylinder Setup
 -Increasing the Load Range at Low Engine-out NO_x Emissions-
Xander Seykens · Erik Doosje · Cemil Bekdemir (TNO)

- 342 A Study on Combustion and Emission Characteristics in NH3-Diesel Dual Fuel Engine under High Load Condition
Daichi Matsunaga · Yusuke Honda · Kenji Hiraoka · Kazuteru Toshinaga (Yanmar Holdings)

【12:10~14:15】

78 Research Trends in Carbon-Neutral Fuel for CI Engines
 <OS> Takuya Yamaguchi (Kurume Institute of Technology)

- 343 Effect of Blending of Fatty Acid Methyl Ester on Combustion and Exhaust Characteristics of Hydrotreated Vegetable Oil
Shoi Koshikawa · Eriko Matsumura · Jiro Senda (Doshisha University)

- 344 Combustion, Emission and Soot Analysis of Diesel-Biodiesel-Ethanol Blended Fuels on Common Rail Direct Injection Diesel Engine
Phyo Wai · Preechar Karin · Mek Srilomsak · Watanyoo Phairote (KMUTL) · Nuwong Chollacoop (MTEC) · Hidenori Kosaka (Tokyo Institute of Technology) · Watcharin Po-ngen (King Mongkut's University of Technology North Bangkok)

- 345 Chemical Kinetics Model for the Analysis of OME Spray Combustion
Yasuyuki Sakai (Ibaraki University)

- 346 CFD Analysis of OME Spray Combustion
Takumi Tanaka · Ouga Sasaki · Wataru Higuma · Yasuyuki Sakai · Kotaro Tanaka · Satoshi Sakaida · Mitsuru Konno (Ibaraki University) · Takeshi Seto · Naoya Ishikawa (Isuzu Advanced Engineering Center)

- 347 Zero-Emission, Maximum Performance - The Latest Generation of Hydrogen Combustion Engines -The Development Pathway That Ultimately Led to an Innovative Hydrogen Combustion Concept, Bringing Hydrogen Engine Powered Vehicles Back to the Road-
 Miguel Santos · Alvaro Sousa · Paul LaValla (Keyou)

【14:55~17:00】

79 Effect of Automobile Emission on Atmospheric Environment
 <OS> Hideyuki Ogawa (Hokkaido University)

- 348 An On-site Check Methodology of a Particle Number Counting System with a Particle Generator
Kazuki Nakamura (AVL Japan) · Christos Dardiotis · Madlen Pramstrahler (AVL List)

- 349 Evaluation of Solid Particle Number and Size Distribution from Light-Duty Vehicles with Gasoline Direct Injection Engine
Ayumi Shimura · Nobunori Okui (NALTEC)

- 350 Impact of Ambient Temperature on Particle Emissions from DI Gasoline Vehicle
Taichi Kimura · Hiroyuki Yamada (Tokyo Denki University) · Yoshinori Kondo · Hidenori Konno (National Institute of Environmental Study)

- 351 Effect of Ambient Temperature on Fuel Economy and Emission Performance of Some Gasoline Hybrid Vehicles (Second Report)

Yoshinori Kondo (National Institute for Environmental Studies) · Hiroyuki Yamada (Tokyo Denki University) · Akihiro Fushimi (National Institute for Environmental Studies) · Katsumi Saitoh (Environmental Science Analysis & Research Laboratory)

- 352 Impacts of Transboundary Air Pollution from East Asia on Air Quality in Japan in 2050
Yoshiaki Yamadaya (Ibaraki University) · Kentarou Hayashi (Tokyo Denki University) · Tazuko Morikawa (JARI) · Hiroyuki Yamada (Tokyo Denki University) · Kotaro Tanaka (Ibaraki University) · Shinichiro Okayama (Nissan Motor) · Yoshiaki Shibata (Institute of Integrated Atmospheric Environment) · Hiroe Watanabe (Nissan Motor) · Toru Kidokoro (Toyota Motor)

503 (5F)

【9:30~10:45】

80 The Latest Noise and Vibration Technologies and Sound Design Technologies VI
 <OS> Michiaki Sekine (NALTEC)

- 353 Influence of Vehicle Interior Design and Sound on Comfortability in Cabin using VR System
Junji Yoshida · Kanta Imamori · Natsuki Kawabata (Osaka Institute of Technology)

- 354 Creation of Operating Feeling of Rotary Switches in Consideration of the Combination of Tactile Sensation and Operating Sound
Toru Miyairi (Chuo University/Tokyo Metropolitan Industrial Technology Research Institute) · Hisato Shimomura · Takeshi Shirasaka · Takashi Otomo (Alps Alpine) · Takeshi Toi (Chuo University)

- 355 Evaluation of Pure Tone Cognition in Electric Vehicle in Consideration of Background Noise Inside and Outside Critical Band
Tatsuya Kanazawa · Kazuma Shibahashi · Soichiro Tanabe · Takeshi Toi (Chuo University)

【12:10~13:50】

81 Technologies of Evaluations and Measures for Road Traffic Noise I
 <OS> Shigenori Yokoshima (Kanagawa Environmental Research Center)

【OS Keynote Address】

- 356 Ministry of the Environment's Measures for Motor Vehicle Noise Reduction
Mahito Moriyama (Ministry of the Environment)
- 357 Study for the Effect of Vehicle Noise Regulation on Reducing Road Environment Noise
Yukihiro Yatsu (Hino Motors)
- 358 AI-Based Method for Determining Vehicles with Illegal Muffler from Pass-by Noise
Hiroyuki Houzu (NALTEC)

359 Characteristics of Sound Emission in Different Road Traffic
Noise Prediction Models

Yasuaki Okada (Meijo University)

【14:30~15:45】

82 Technologies of Evaluations and Measures for Road Traffic
Noise II

<OS> Yasuaki Okada (Meijo University)

360 Application of Noise Map for the Prediction and Evaluation
of Road Traffic Noise in Higashiosaka City

Satoshi Atohe · Yoshinori Saito (Nihon Michelin Tire)

Kazunori Harada (Okayama Prefectural University)

Takuya Oshima (Niigata University)

Yasuhiro Hiraguri (Kindai University)

361 Examination on Noisiness of Time-Varying Road Traffic
Noise Due to Passing-by High Sound Level Vehicles

Katsuya Yamauchi · Taisuke Ezo (Kyushu University)

Makoto Morinaga (Kanagawa University)

362 Survey of Residents' Awareness of the Environment
Surrounding Trunk Roads

Yui Komi (Kanagawa University)

Shigenori Yokoshima

(Kanagawa University/Kanagawa Prefectural Government)

Sohei Tsujimura (Ibaraki University)

Yoshiki Umezaki (Creative Research and Planning)

Toru Yamazaki (Kanagawa University)