## Proximate analysis of a coal

INTRODUCTION

The proximate analysis, allows classifying a coal and gives information for its industrial use. Coal is particularly classified according to its volatiles content : anthracite (8 to 18 %), semi-bituminous (18 to 26 %), bituminous (26 to 40 %), semi-bituminous (40 to 50 %). The thermogravimetric test allows giving a rapid result for a coal.

All the operations heating and gas switching are automatically achieved by the controller associated with the thermoanalyzer.
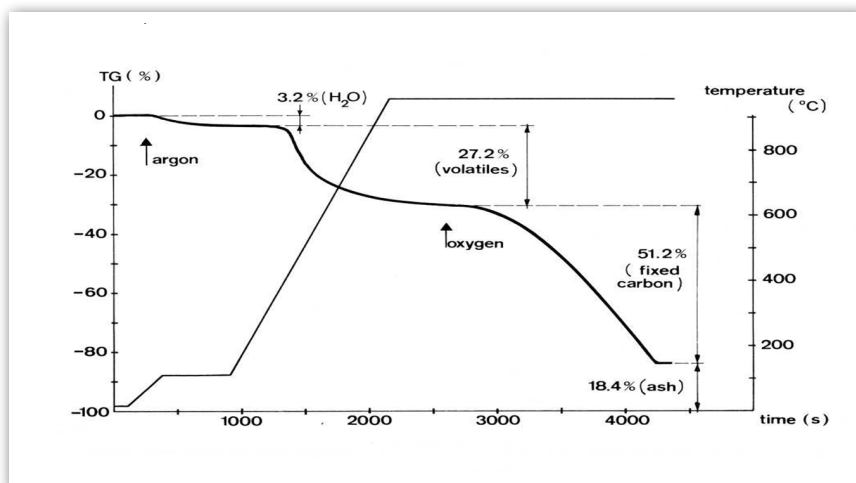
EXPERIMENT

- Samples : coal
- Mass : 46.85 mg
- Crucible : Silica
- Atmosphere : Argon, then oxygen

- Heating mode :
Heating to 110°C and isothermal level during 5 minutes under argon
Rapid heating to 950°C and isothermal level during 10 minutes under argon
Switch from argon to oxygen at 950°C

RESULTS AND CONCLUSION

The proximate analysis of coal sample gives the following results :
Moisture: 3.2 %
Volatiles: 27.2 %
Fixed carbon : 51.2 %
Ash: 18.4 %

According to the volatiles content, the sample can be classified as a bituminous coal.

INSTRUMENT

THEMYS ONE TGA

HIGH SENSITIVITY BALANCE FOR THE DETECTION OF SMALL MASS VARIATIONS specifically designed for TGA analysis.

CONVENIENCE OF ONE FURNACE to reach temperatures as high as *1150°C or 1600°C*.

PLUG AND PLAY INTERCHANGEABLE RODS to perform TGA only, TG-DSC, TG-DTA, and 3D high sensitivity/Cp measurements.

EXTERNAL COUPLING CAPABILITY including evolved gas analysers

REIMAGINE MATERIAL CHARACTERIZATION