

## Melting of coal ashes

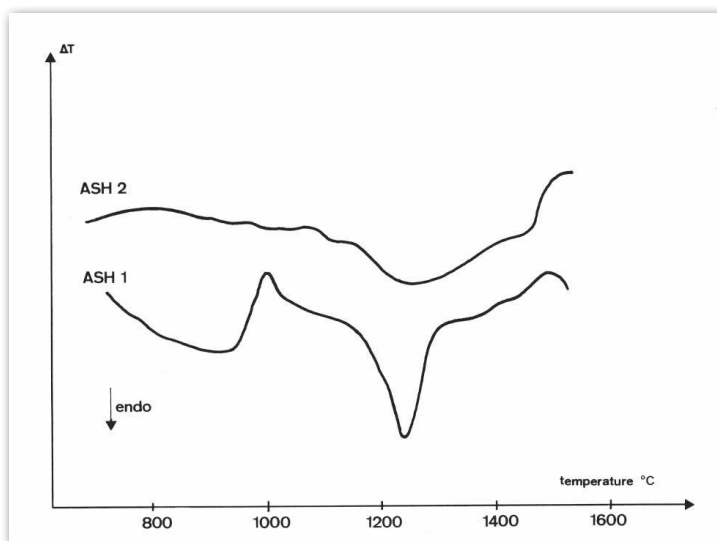
### INTRODUCTION

Melting of ashes is of a high importance in the use of coal. According to the conditions of use, it can be interesting or forbidden.

Melting of ashes depends on their chemical composition, and also on the type of atmosphere in which melting occurs.

A coal has rather fusible ashes when the melting point is about 1300°C. If melting does not occur below 1500°C, ashes are said refractory.

Themys STA is used to characterize the melting of two ashes.



### EXPERIMENT

Samples :

- Coal Ash 1 (66.5 mg)
- Coal Ash 2 (49.0 mg)

Crucible : Platinum

Atmosphere : Argon

Heating rate : 10 K/min

### RESULTS AND CONCLUSION

Two ashes are heated up to 1500°C.

Ash 1 shows, after an exothermic effect, a well-defined endothermic peak corresponding to ash melting. The melting point is 1240°C.

On the other hand, ash 2 does not show any clear melting peak below 1500°C. This ash can be considered as refractory.

### INSTRUMENT

#### THEMYS STA



ACCURATE AND SENSITIVE ULTRA-HIGH TEMPERATURE heat flow measurement with Tri- Couple DTA technology

ULTRA-HIGH TEMPERATURE CAPABILITY to 2400°C with a single furnace.

MODULAR ADAPPTIONS ALLOWING TGA only, DTA only, TG-DTA, and TMA up to 2400°C, DSC only and TG-DSC up to 1600°C all in one instrument

EXTERNAL COUPLING CAPABILITY designed for evolved gas analyzers (FTIR, MS, GCMS, MSFTIR, or FTIR-GCMS)