

Coupled Thermal Analysis in the Corporate Analytics of Robert Bosch GmbH – Application Examples and Limits

The Corporate Analytics department of the Robert Bosch Corporation provides comprehensive analytics both for Corporate Research and Advance Engineering as well as for business divisions, plants and purchasing for most classes of materials. The focus is on the clarification and assessment of complex cause relationships and failure mechanisms of materials and components and the formulation of measures for failure prevention and increasing product reliability.

Typical application fields of Thermal Analysis methods within the Corporate Analytics department are for instance debinding investigations of ceramic materials including kinetic analysis and debinding optimization, characterization of curing behavior of adhesives and resins, qualitative and quantitative analysis of volatile substances during drying processes and characterization of decomposition behavior of materials under temperature loads.

In the presentation typical examples out of our daily work will be shown such as:

- Determination of water content in grease
- Measurement of H₂-release during wafer processing under normal and reduced pressure
- Drying of battery material for process optimization
- Characterization of foreign particles in a ceramic paste
- Water absorption experiment on filter material
- Characterization of outgassing substances of battery material after processing