

The HTK 1200N oven chamber from Anton Paar is designed for non-ambient powder X-ray diffraction from room temperature to 1200 °C in air, vacuum and inert atmospheres.



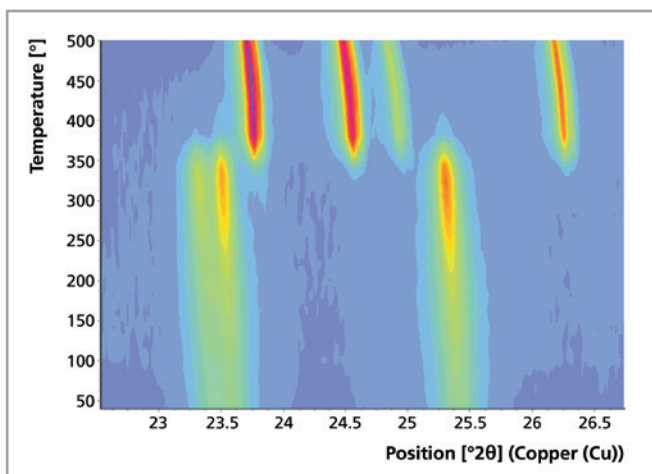
## Non-ambient attachment for XRD

# HTK 1200N – high temperature oven chamber

### Application examples

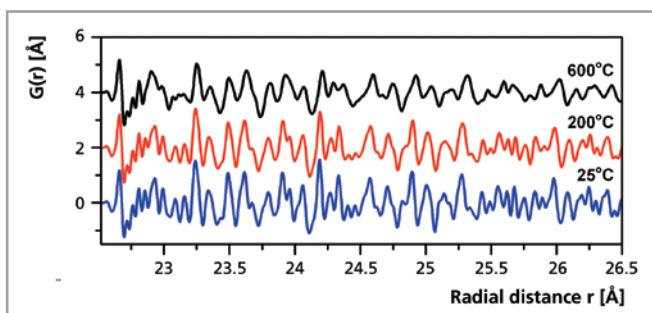
#### Benefits

- High temperature uniformity over the entire sample volume due to environmental heating
- Accurate temperature measurement with a thermocouple close to the sample
- Almost no restrictions on sample thickness
- Better particle statistics due to sample spinning
- In addition to standard reflection geometry a capillary transmission option is available.



Orthorhombic to monoclinic phase transition in  $\text{Li}_2\text{Co}(\text{SO}_4)_2$

Courtesy of G. Rousse, Université Pierre et Marie Curie (data reported in Chem. Mater., 26, 4178–4189, (2014))

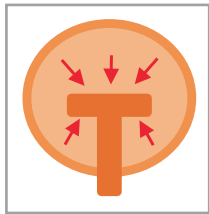


Study of pair distribution function of Quartz at variable temperatures. Sample was loaded in a quartz capillary.

# HTK 1200N oven chamber

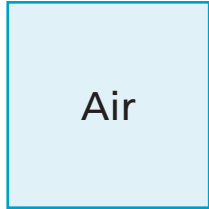


## Features

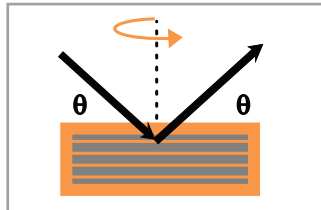
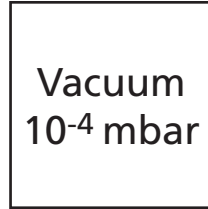


Environmental heater

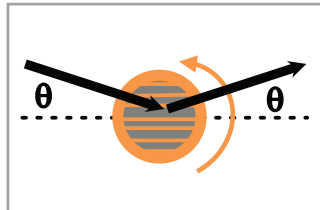
From room temperature to 1200°C  
Heat-up time to 1200 °C 15 min (air)



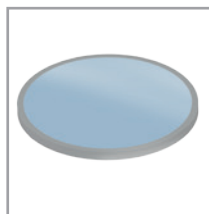
Atmospheres



Spinning flat plate reflection geometry. Sample cups made of  $Al_2O_3$

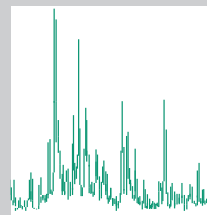


Capillary spinner transmission geometry. Quartz capillary

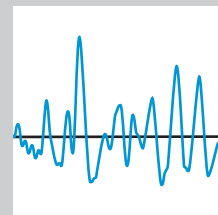


Zero-background insert

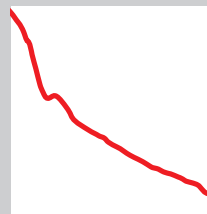
## Applications



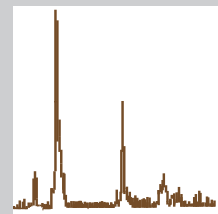
Powder XRD



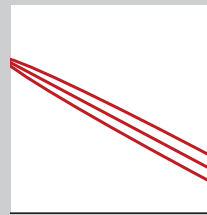
Pair distribution function\*



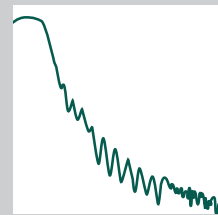
Basic small-angle X-ray scattering\*



Basic grazing incidence XRD\*



Basic stress\*\*



Basic reflectivity\*\*

\* Application developed by PANalytical

\*\* Limited sample alignment options (no tilt and rotation axis)

## Conclusion

The HTK 1200N oven chamber is an ideal choice for *in situ* studies of temperature-induced phase transformations, changes of structural properties of both inorganic and organic powders and solids from room temperature to 1200 °C.