SIMTRUM

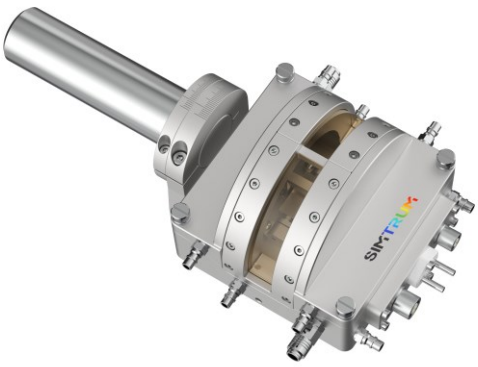
X-ray/XRD Temperature Stage

2022 V1

For customized projects please Contact us:

info@simtrum.com

X-ray/XRD Temperature stage is an accessory for studying sample variable temperature X-ray diffraction, realizing sample temperature range: -190°C to 600°C /RT to1200°C in air / inert gas/vacuum ambient conditions, and common X-ray Use with diffractometer. Supports retrofitting on various existing X-ray diffractometers (Bruker, Thermo Fisher, Rigaku, etc.).



X-ray/XRD Temperature Stage

XRD Temperature Stage replacement cover can be used as an optical Temperature stage

Features

- Compact and suitable for in-situ variable temperature XRD testing of materials
- Gas-tight chamber design (with a protective atmosphere)
- Upgradable vacuum chamber (10^{-3} mbar)
- Diffraction angle 0 to 164° (standard sample holder)
- Specimen table 23 x 23mm, silver
- Manual displacement table in Z-direction
- Software control of the upper computer

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Specifications

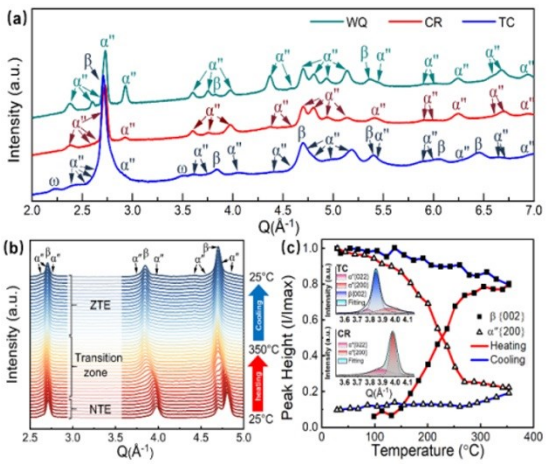
Optical Indicators	Cryo 600-190-X	HT1200-X
Temperature Control		
Cooling & Heating	Liquid nitrogen cooling/resistance heating	Resistance heating
Temperature Control Range*	-190 to 600℃	RT to 1200℃
Temperature Stability*	±0.2 °C (< -170 °C) / ±0.1°C (< 600°C) / ±1°C (> 600°C)	
Temperature Resolution	0.1 ℃	
Temperature Control Speed	0~50℃/ min (can be fixed point / program segment temperature control)	
Temperature Control Method	PID	
Temperature Sensor	PT100	Thermocouple
Optical Properties		
Optical Path*	Reflected optical path (can be upgraded to the transmitted optical path)	
X-ray Transmissive Film	Kapton membrane	
Structural Properties		
Sample Table Size*	23×23mm	12×12mm
Sample Carrier Material*	Silver	Ceramic
Dimensions*	100×100×73mm	
Chamber	Vacuum	
Shell Cooling	Recycled water	
Remark	Above are all default parameters, with * being customizable.	

Temperature Range Choice

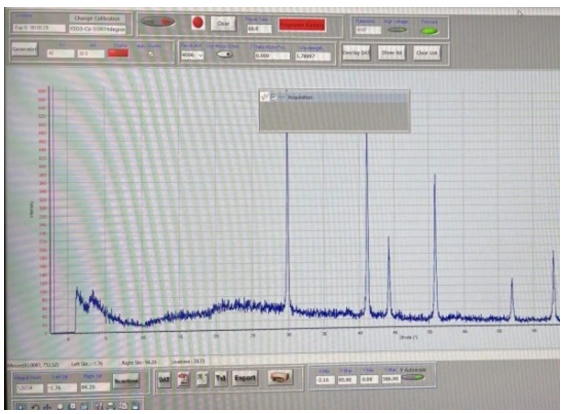
Low Temperature Stage: -190 to 600℃
Low temperature optional ☑ -190℃ ☐ -180℃ ☐ -160℃ ☐ -120℃ ☐ -100℃ ☐ RT
High temperature optional ☐ 400℃ ☐ 600℃

High Temperature Stage: RT to 1200 ℃
High Temperature Optional RT to ☐ 400℃ ☐ 600℃ ☐ 800℃ ☐ 1200℃

Applications

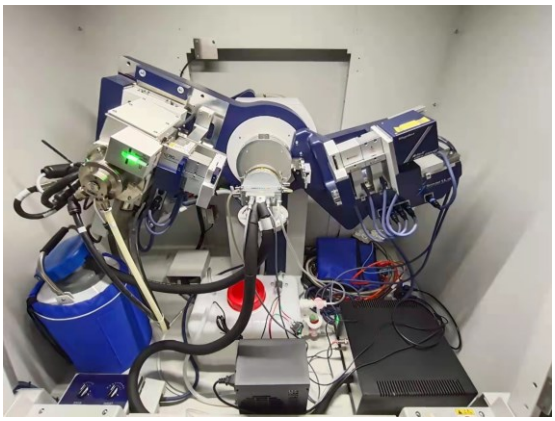


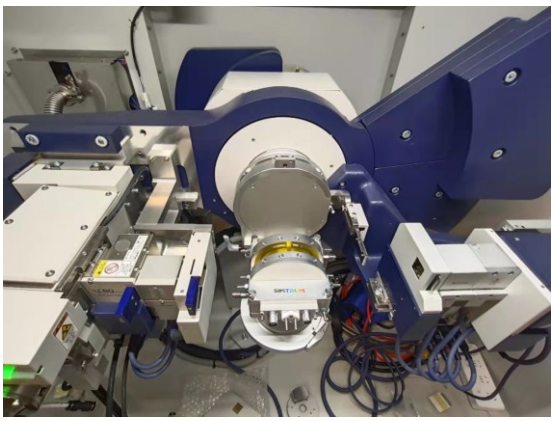
Variable Temperature XRD Testing of Titanium Alloys



Quartz Variable Temperature Phase Change XRD Testing

Applications





X-ray/XRD Temperature stage with Bruker scientific X-ray diffraction system

X-ray/XRD Temperature stage with ThermoFisher X-Ray diffraction system

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