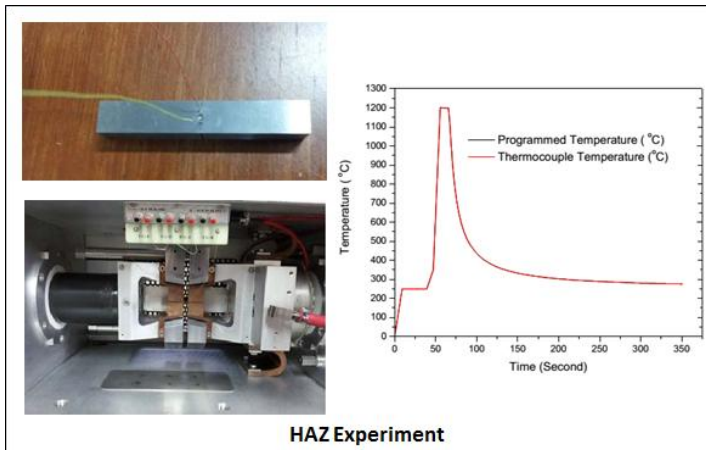


Experiments using Gleeble 3800 system



CONTACT

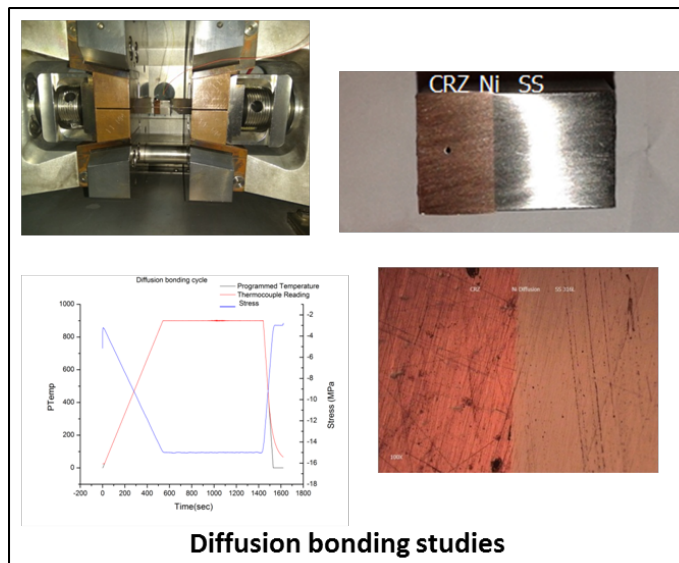
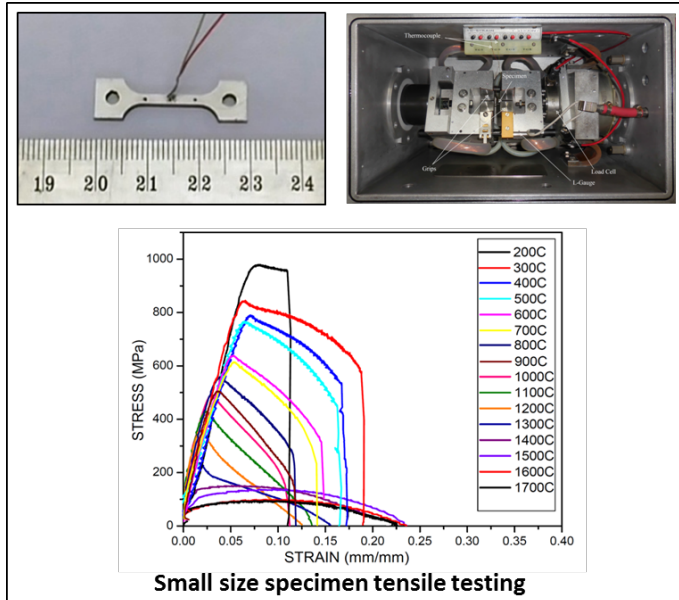
<http://www.ipr.res.in/httd/index.html>

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Experiments using Gleeble 3800 system



Gleeble 3800 A Thermo-mechanical Simulator System



High Temperature Technologies Division



Institute for Plasma Research
Bhat, Gandhinagar, Gujarat,
India-382428
www.ipr.res.in

Technical Specifications

Thermal System	
Type of heating system	Direct resistance with closed-loop control
Temperature control	Digital closed-loop control using 16 bit analog-to-digital converter and 16/32 bit digital signal processor
Temperature range	Room temperature to 2300°C
Accuracy of temperature control	± 1°C (in steady state)
Number of thermal channels	4 thermocouple channels, or 3 thermocouple channels and one pyrometer channel
Maximum Heating Rate	10,000°C/sec (for 6 mm diameter tensile specimen with 10 mm free span.)
Mechanical System	
Test frame	Horizontal type with dual 99 mm diameter columns
Mechanical system	Closed-loop hydraulic servo control
Maximum force in compression	196kN
Maximum force in tension	98kN
Maximum stroke rate	2000mm/sec in tension or compression
Minimum stroke rate	0.001mm/sec in tension or compression
Maximum stroke distance	125mm
Specimen Sizes	
Minimum specimen size required	5mm in diameter for round specimen 5mm square
Maximum specimen size allowed	20mm in diameter for round specimen 20mm square for square specimen

Application of Gleeble 3800 system

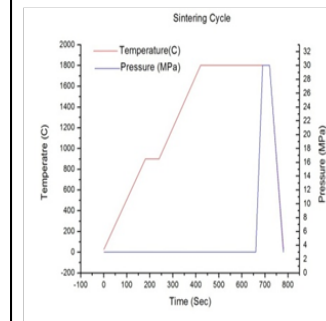
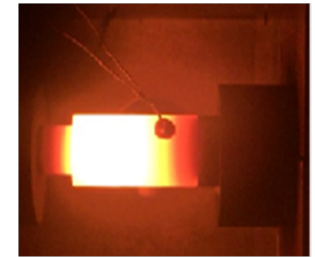
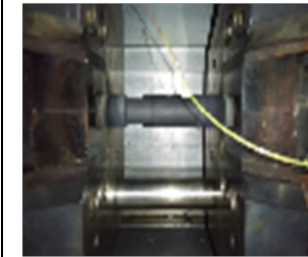
Material Testing

- High temperature tensile tests
- High temperature compression tests
- Hot ductility testing
- Nil Strength Tests
- Thermal fatigue tests
- Thermal-mechanical fatigue
- Creep test

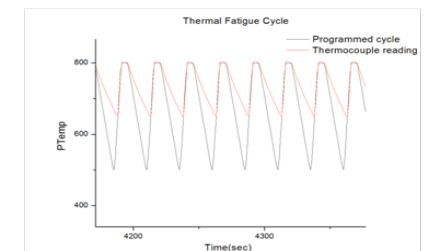
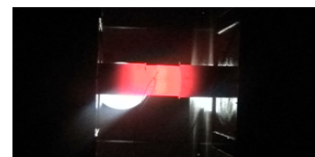
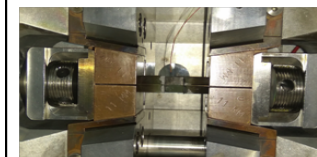
Process simulation

- Melting solidification studies
- Continuous casting simulations
- Hot rolling simulations
- Forging simulation
- Weld HAZ cycle simulation
- Diffusion bonding
- Brazing
- Powder metallurgy/sintering
- Phase transformation
- Heat treating
- Quenching

Experiments using Gleeble 3800 system



Tungsten Sintering Experiments



Thermal fatigue tests