

ENGINEERING ANALYSIS & SIMULATIONS

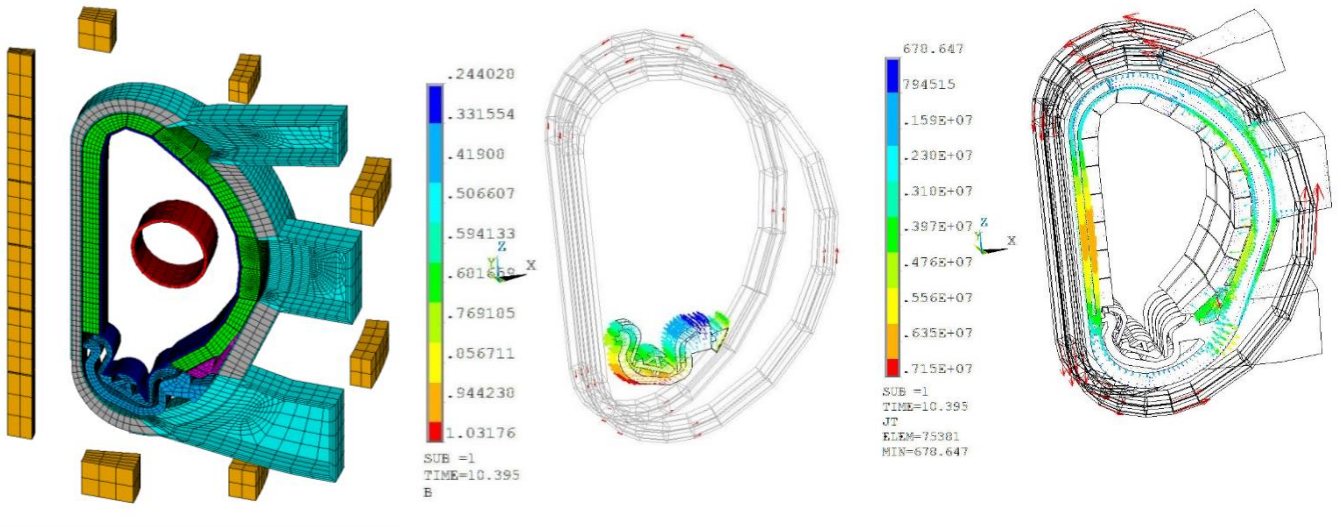
High Temperature Technologies Division has considerable expertise in the area of Multi-physics simulations of Tokamak related components that include

- Electromagnetic, Thermal, Structural analysis
- Thermo-Structural, Electromagnetic-Structural Coupled Field analysis
- CFD analysis of first wall and divertor components
- Thermal hydraulic Simulations for experiments carried out at HHFTF
- CFD analysis for calorimetry and conjugate heat transfer studies and validation with experiments
- Codes and Standards: RCCMR/ SDCIC for qualification of components

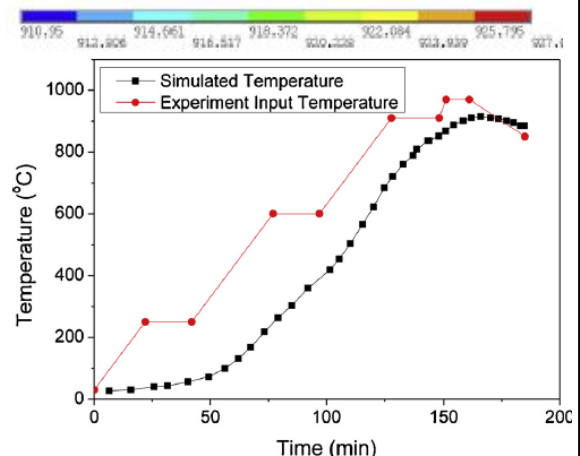
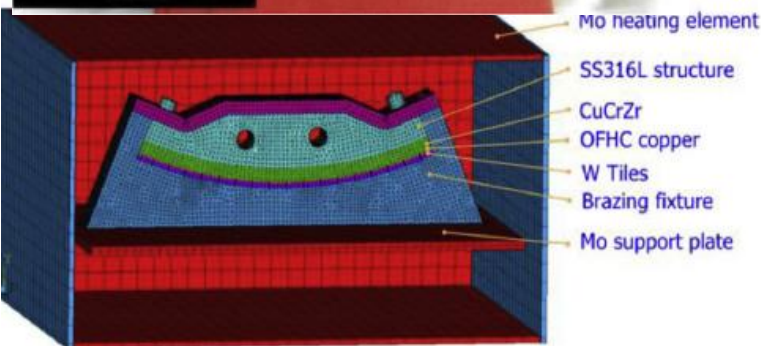
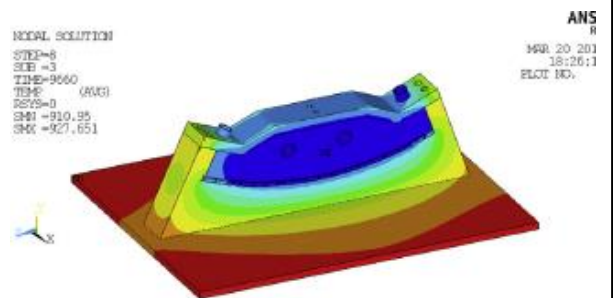
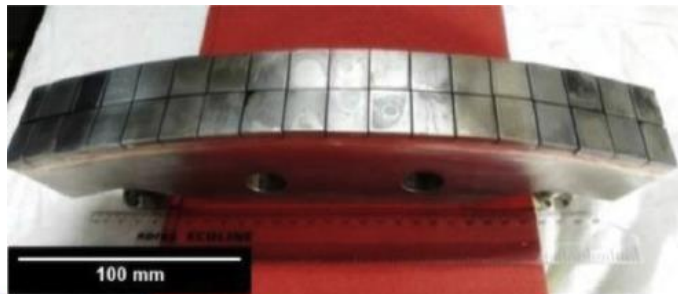
This is also supplemented with availability of quality HPC computing facility and commercial codes –

- ANSYS Mechanical
- ANSYS Fluent
- ANSYS Maxwell
- COMSOL
- StarCCM+
- Catia
- Abaqus
- Hyperworks
- Matlab

Electromagnetic analysis of the ITER Divertor has been performed for off normal loading conditions to estimate the forces acting on the divertor

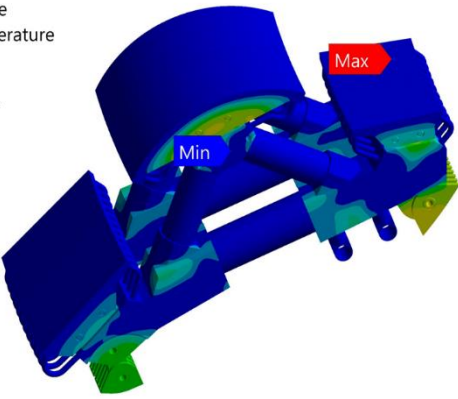


Radiation analysis of scaled down ITER DOME fabricated using vacuum brazing furnace



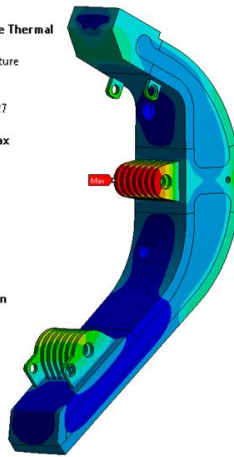
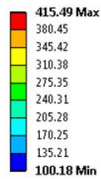
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Temperature
Type: Temperature
Unit: °C
Time: 1
Max: 427.27
Min: 99.091

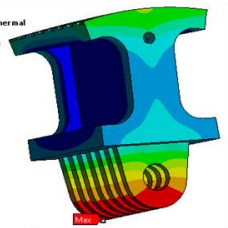
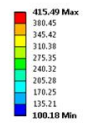


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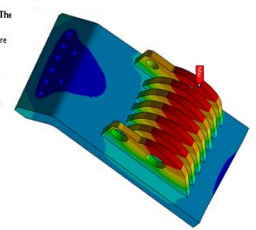
C: Steady-State Thermal
Temperature
Type: Temperature
Unit: °C
Time: 1
09-02-2017 11:27



C: Steady-State Thermal
Temperature 4
Type: Temperature
Unit: °C
Time: 1
09-02-2017 11:46

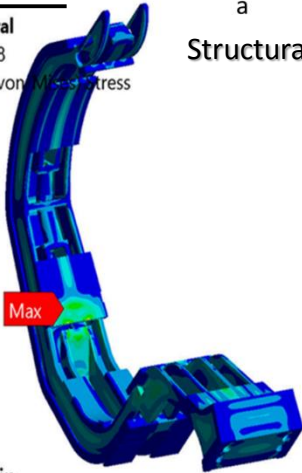
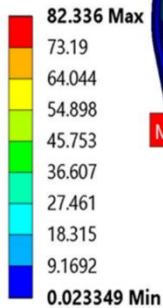


C: Steady-State Thermal
Temperature 5
Type: Temperature
Unit: °C
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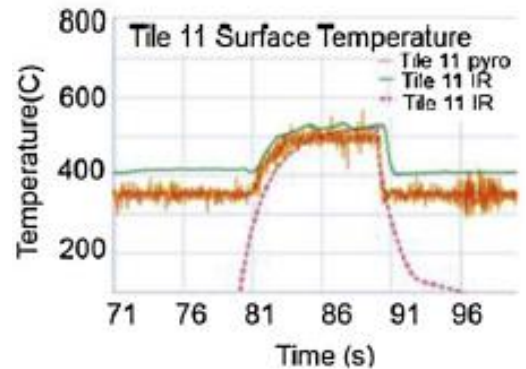
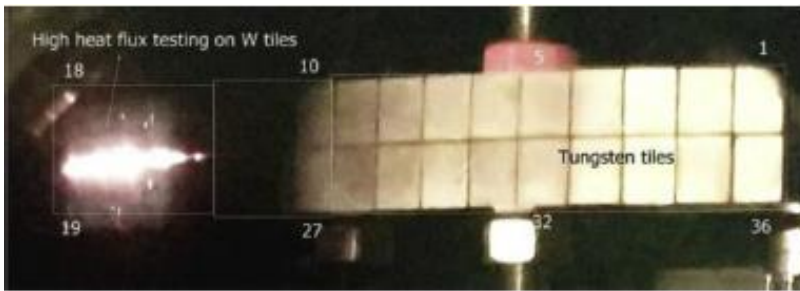
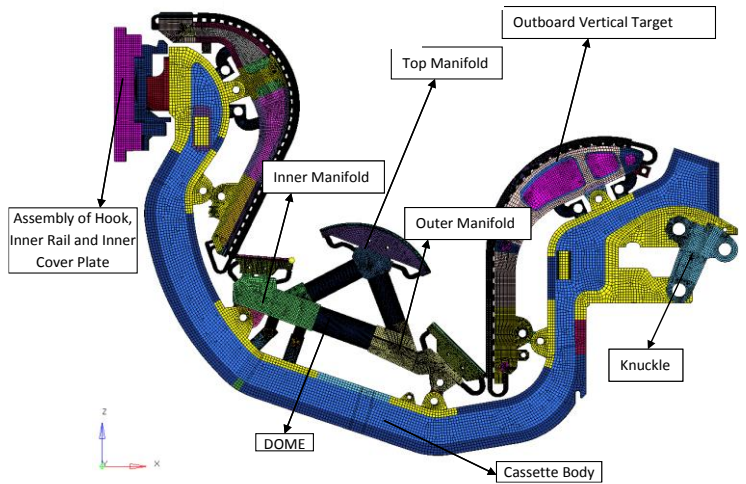
C: Static Structural

Equivalent Stress 8
Type: Equivalent (von Mises) Stress
Unit: MPa
Time: 1

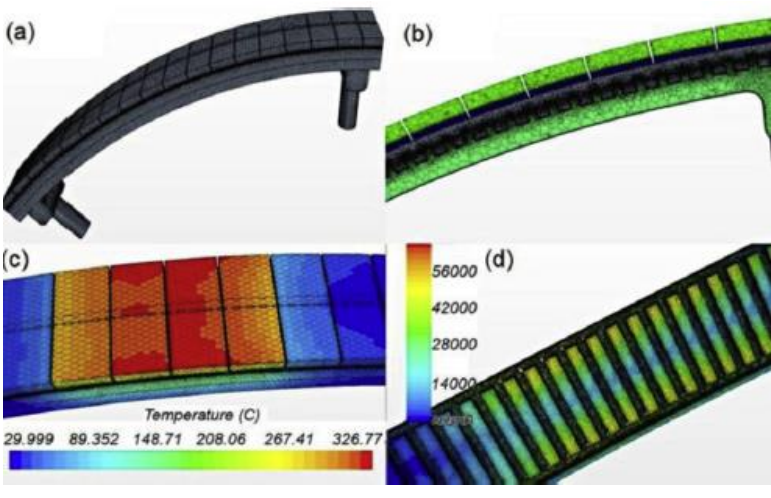


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Structural and thermo-structural analysis of the ITER Divertor



CFD Analysis HHF testing performed for DOME for a heat flux of 4 MW/m²



CFD Analysis of single OVT PFU of ITER Divertor for Slow transient conditions

