

Technical Meeting on State-of-the-art Thermal Hydraulics of Fast Reactors

Monday, September 26, 2022 - Friday, September 30, 2022

C.R. ENEA, Camugnano, Italy

Scientific Program

Track I: Fundamental thermal hydraulics

Heat transfer and friction factor correlations
Turbulent heat and mass transfer
Multiphase flow
Low Re number flow
Natural and mixed convection
Fluids with internal heat generation
Gas dynamics and compressible flow

Track II: Test facilities and experimental thermal hydraulics

Isothermal / Hydraulic experiments
Non-isothermal / Thermal-hydraulic experiments
In-pile experiments
Measurement techniques and instrumentation

Track III: Computational modelling & simulation

Sub-channel thermal hydraulics
Core thermal hydraulics
Pool and primary circuit thermal hydraulics
System thermal hydraulics
High Fidelity Modelling
Computational codes

Track IV: Thermal hydraulics of transients and accidents

Operational transients
Design basis accidents
Severe accidents (coolant boiling, fuel-coolant interaction, corium thermal hydraulics, source term, etc.)
Decay heat removal
Containment thermal hydraulics

Track V: Multiscale and multiphysics modeling

Multi-scale modeling and coupling
Multi-physics modelling and coupling (fluid-structure interaction, magneto hydrodynamics, neutronics – thermal hydraulics, fuel assembly bowing and buckling, core mechanics etc.)

Track VI: Verification, validation and uncertainty analysis

Verification and validation

Uncertainty and sensitivity analysis

Lessons learned from international benchmarks