

THE SECOND SAUDI INTERNATIONAL CONFERENCE ON (NUCLEAR POWER ENGINEERING (SCOPE-2

Monday, 3 November 2025

- Thermal Hydraulics: Experimental and Computational Advancements in Heat Transfer and Boiling Phenomena

(Ground-101 - Lecture Hall (13:00 - 14:00/60

Conveners: Nouf Al Mousa; Ivan Otic-

time	id] title]	presenter
13:00	Impact of Nonzero Initial Heat Flux Increase on Pool Boiling Curves: A [25249] Transient Versus Stationary Comparison	
13:15	Prediction of turbulent heat transfer using Physics Informed Machine [25236] Learning	
13:30	Coupled Mass and Heat Transfer in Multiscale Flows Using a [25157] Generalized Multiphase Modelling Approach	

Ground-101 - Lecture Hall/60 - Thermal Hydraulics: Data-Driven Approaches for for Nuclear Safety Applications

(15:15 - 14:15)

Conveners: Nouf Al Mousa; Martina Adorni-

time	id] title]	presenter
14:15	The Data-DrivenReduced Order Modelling Framework: Application on [25259] the DYNASTY Experimental Facility	
14:30	Numerical Evaluation of Turbulent Mass Transfer in Separated Flows [25462] for the Prediction of Flow-Accelerated Corrosion	
14:45	Heat transfer enhancement by infrared thermography analysis in two [25109] different corrugated profile	

Tuesday, 4 November 2025

Ground-101 - Lecture Hall/60 - Thermal Hydraulics: CFD and System Code Applications in Nuclear Reactor Safety (11:00 - 10:00)

Conveners: Iztok Tiselj; Sharaf Alsharif-

time	id] title]	presenter
10:00	CFD Modelling for Steam Generator [25114]	
10:15	Taylor Bubble in Laminar Vertical Counter-Current Flow as CFD [25334] benchmark case	
10:30	STH/CFD Codes Applications to Compact Crossflow HXs [25293]	
10:45	Assessment of SPACE Code Prediction Capability for Two-phase [25379] Natural Circulation Flow Pressure Drops Limitations and Pathway for Improvements	

- Ground-101/60 - Thermal Hydraulics: Experimental Insights and Mechanistic Modeling in Complex Flow Regimes (Lecture Hall (11:00 - 12:00

Conveners: Andrea Pucciarelli; Konstantin Nikitin-

time	id] title]	presenter
11:00	Development of a Buoyancy-Driven Incompressible Schrodinger Flow [25253] Algorithm for Inviscid Flows	
11:15	High-Fidelity Velocimetry Experiments and Spatial-Temporal Flow [25170] Analyses in a Randomly Packed Pebble Bed Arrangement	
11:30	Simulation of HTRF experiments with CTF subchannel code [25352]	
11:45	A Complete Mechanistic Model of Vertical Upward Annular Two-Phase [25347] Flow	

- Ground-101 - Lecture Hall (14:45/60 - Thermal Hydraulics: International Collaboration and Innovation Initiatives (16:05

Conveners: Pieter Boom; Omar Al-Yahya-

time	id] title]	presenter
14:45	Invited Talk: Key Outcomes of Recent NEA Nuclear Safety Joint [25457] Projects in Thermal- and future innovation	ADORNI, Martina
15:05	Development of 10 MW Micro-Nuclear Reactor as Case Study for the [25377] Kingdom of Saudi Arabia	
15:20	Development of an Advanced Open-Source Nuclear System Analysis [25392] Code Based on a Fully Implicit Two-Fluid Model	
15:35	Influence of temperature dependent material properties on natural [25421] convection in a square differentially heated cavity	
15:50	Comparative Study of Wick Layer Number and Damage Effects in [25464] Microreactor Heat Pipes	

Wednesday, 5 November 2025

(Ground-101 - Lecture Hall (13:30 - 14:30/60 - Thermal Hydraulics: Passive Safety Systems and Accident Analysis

Conveners: Ali Alshehri; Farah Alsafadi-

time	id] title]	presenter
13:45	Simulation of Relevant Transient Scenarios for a lead-cooled Reference [25292] SMR using a STH Code	
14:00	Addressing innovation on analysis and management of accidents by [25335] international cooperation: the Working Group on the Analysis and Management (of Accidents (WGAMA	
14:15	Passive Containment Cooling System Modelling with APROS System [25434] Code	