



AGENDA

30th International QUENCH Workshop

Karlsruhe Institute of Technology, Campus North, H.-von-Helmholtz-Platz 1, 76344 Egg.-Leopoldshafen, Germany
16-18 December 2025

Meeting Location: Fortbildungszentrum für Technik und Umwelt (FTU), Auditorium (Aula)

Tuesday, 16 Dec 2025

8:10	Pick-up at the hotel	
8:30	Registration	
9:00	Welcome	M. Steinbrück, W. Tromm, KIT
9:10	Update of the QUENCH Program	M. Steinbrück, KIT
	<u>JUBILEE SESSION 30 YEARS QWS</u> (Chair: F. Gabrielli, KIT)	
9:30	History of nuclear research in Karlsruhe (working title)	M. Popp, invited
10:00	Overview of the CODEX experimental programme	Z. Hozer, HUN-REN
10:30	Coffee break (Group Photo)	
11:00	Materials science for nuclear safety. From unexpected findings to improved severe accident codes	M. Steinbrück, KIT
11:30	The importance of taking into account the temperature gradient on the processes occurring in the cladding tube during high-temperature oxidation, melting and mechanical deformation	J. Stuckert, KIT
12:00	Neutron imaging investigations of hydrogen in cladding tube materials	M. Grosse, KIT
12:30	From QUENCH-01 to QUENCH-ATF-2: Three Decades of AC ² /ATHLET-CD Validation using QUENCH Experiments	T. Hollands, GRS
13:00	Lunch	
	<u>LONG-TERM DRY STORAGE – SYSTEM ZR-H</u> (Chair: D. Schaefer, KIT)	
14:00	The SPIZWURZ project, overview and single effect tests	M. Grosse, KIT
14:20	Experimental results of the SPIZWURZ bundle test	J. Stuckert, KIT
14:50	Hydride Morphology in Zirconium Tubes After SPIZWURZ Bundle Tests: Experimental Data and Preliminary Simulation Results	M. Kolesnik, KIT
15:10	SPIZWURZ Benchmark	A. Rezchikova, GRS
15:30	Coffee break	

16:00	Hydrogen in Claddings - Investigations on Hydrogen Axial Mobility, Role of Liner and Creep	J. Bertsch, PSI
16:30	Dedicated investigation of secondary hydriding: Experimental insights and modelling	M. Kpemou, ASNR
17:00	Bus transfer to the hotel	

Wednesday, 17 Dec 2025

8:30	Pick-up at the hotel	
	<u>MODELLING AND CODE APPLICATION I</u> (Chair: M. Cazado, KIT))	
9:00	Expanding the Capability of the ASTST VER3.5 System Thermal Hydraulic and SCDAPSIM Modeling Options to Support the Fukushima Daiichi Decommissioning R&D Analysis and Assessment	R. Pericas, ISS
9:20	Analysis of the COAL Reflooding Experiments: Recent Simulations with AC ²	G. Stahlberg, RUB
9:40	Validation of AC2/ATHLET using QUENCH data	L. Lovasz, GRS
10:00	Modeling of QUENCH-06 and QUENCH-20 tests with RELAP/SCDAPSIM, Focus on Bundle Asymmetry	T. Kalias, LEI
10:20	Coffee break	
	<u>MODELLING AND CODE APPLICATION II</u> (Chair: L. Lovasz, GRS)	
10:50	Infinite lattice depletion of accident-tolerant fuel pin-cells with OpenMC and cladding inventory analysis with FISPACT-II	P. Bochtler, BASE
11:20	Simulation of Cr-coated Zry-4 cladding tube ballooning and burst behavior using MERCURY	D. Lee, KAERI
11:40	Simulating Cr-Coating Behavior with AC ² : From QUENCH Analysis towards Integral Plant Application	G. Stahlberg, RUB
	<u>EXPERIMENTS</u> (Chair: L. Lovasz, GRS)	
12:00	COSMOS-H first experiments at the new thermohydraulic facility	S. Gabriel, KIT
12:20	Synergistic influence of oxygen, hydrogen and microstructure on thermal shock behavior of PHWR cladding subjected to integral LOCA test	T. Sawarn, BARC
13:00	Lunch	
14:00	Technical tour to FR2 Nuclear Museum and KATRIN facility	
17:30	Bus to dinner (Restaurant Ritter, Büchenau)	
ca. 22:00	Arrival at KIT and in hotel	

Thursday, 18 Dec 2025

8:30	Pick-up at the hotel	
	<u>ATF CLADDING I</u> (Chair: M. Grosse, KIT))	
9:00	Results of the IAEA Coordinated Research Project (CRP) on ‘Testing and Simulation of Advanced Technology and Accident Tolerant Fuels (ATF-TS)’ (2020–2024) and Plans for the Next CRP”	A. Khaperskaia, IAEA
9:30	Separate effects tests with ATF cladding materials within the IAEA ATF-TS CRP	M. Sevecek, CTU
9:55	Development Status of Accident-Tolerant Control Rods in Light Water Reactors at CRIEPI	K. Nakamura, CRIEPI
10:15	Post-test examination of the integral air ingress experiment CODEX-ATF-AIT	R. Farkas, HUN-REN
10:30	Coffee break	
	<u>ATF CLADDING II</u> (Chair: M. Sevecek, CTU))	
11:00	Accident tolerant fuel: Cr coated cladding development at Westinghouse	K. Frederick, WEC
11:20	Oxidation and degradation of Cr-coated zirconium alloy: Effect of Cr thickness	M. Steinbrück, KIT
11:45	Effect of initial Cr-coating thickness on the high-temperature steam oxidation behavior of Cr-coated Zr-based alloys: Comparison between TGA experiments conducted at several institutes using “Equivalent Chromium Reacted” (ECrR) parameter	J.-C. Brachet, CEA
12:10	Steam Oxidation of Cr-Coated Zircaloy-4 Rods Across a Wide Range of Heating Rates	D. Bachurina, KIT
12:30	Multiscale Insights into Embrittling Mechanisms of Cr-Coated Zircaloy Cladding under Ultra-High Temperature Conditions	T. Liu, SJTU
12:50	Lunch	
	<u>ATF CLADDING III</u> (Chair: D. Bachurina, KIT)	
14:00	Behaviour of Fuel Cladding with Cr Coating during LOCA and Study of Oxygen Diffusion into Zr-alloy using Different methods	V. Boucek, UJP
14:20	High-Temperature Oxidation of Cr Coated Claddings with Interdiffusion Barrier & Solute (Al, Si) Additions	B. Nowak, Queen’s University
14:40	Experimental Observations on the CHF Performance of Cr/ CrN-Coated Zircaloy-4 in Low-Pressure Flow Boiling	N. Wefers, KIT
15:00	Update of the KIT contributions to the SCORPION project	M. Grosse, KIT
15:30	Closure of the Workshop	M. Steinbrück, KIT
16:00	Bus for train station and hotel	