

SERAFIN Workshop

Symposium on ENEA ReseArch For Innovative Nuclear application

June 17 – 18, 2025

Aula Magna Enrico Mattei, Faculty of Engineering, Viale del Risorgimento 4, 40136 Bologna (BO)



A platform to showcase ENEA's cutting-edge research and foster collaborations in nuclear science and technology

Day 1 **Tuesday, June 17, 2025**

8:30 – 9:00 Registration
9:00 – 9:15 Opening remarks

Mariano Tarantino
Head of ENEA NUC-ENER Division
Matteo Gherardi
University of Bologna

Safety and Risk Assessment in Nuclear Installations

Chair: To be defined

9:15 – 9:30	Deterministic Analyses to Support Small Modular Reactor Safety Demonstration	Fulvio Mascari <i>ENEA</i>
9:30 – 9:45	Integral effect tests in the CIRCE-THETIS facility: experimental LFR accident investigations and prototypical components characterization	Alessandro Bellomo <i>University of Pisa</i>
9:45 – 10:00	Application of the REPAS methodology to assess the reliability of the EHRS in a generic iPWR SMR	Erik Cilia <i>University of Bologna</i>
10:00 – 10:15	Supporting the ESFR-SMR Design: Safety Analyses and Fuel Optimization Activities at ENEA	Massimiliano Polidori <i>ENEA</i>
10:15 – 10:45	Q&A	

10:45 – 11:15 Poster Session + Coffee Break

11:15 – 12:15 Round Table: Severe Accident Analysis for Advanced Reactors

Chair: To be defined

12:15 – 12:45 Q&A
12:45 – 13:00 Group photo
13:00 – 14:00 Lunch

Innovative Design and Modelling of Nuclear Systems

Chair: To be defined

14:00 – 14:15	The IAEA Coordinated Research Project on NACIE-UP facility: outcome of ENEA activities	Roberto Da Vià <i>ENEA</i>
14:15 – 14:30	From Needs to Development, Validation and Application (Needs): The Virtuous Cycle for LFR Core Design	Giacomo Grasso <i>ENEA</i>
14:30 – 14:45	Enabling advanced thermal-hydraulics knowledge: the NETT1 Laboratory	Francesco Lodi <i>ENEA</i>

14:45 – 15:00	Enhancing LFR Analysis Accuracy: Refining Nuclear Data by Differential and Integral Measurements	Donato Castelluccio <i>ENEA</i>
15:00 – 15:30	Q&A	
15:30 – 16:00	Poster session + Coffee Break	
	Advanced Technologies for Future Nuclear Applications <i>Chair: To be defined</i>	
16:00 – 16:15	MCNP simulation of the Intra-Operative Radiation Therapy (IORT) treatment of solid cancers with fast neutrons and comparison with the dosimetry parameters of standard IORT techniques adopting X-rays and electrons	Massimo Sarotto <i>ENEA</i>
16:15 – 16:30	The SELENE project: the Italian contribution to a lunar base	Roberto Pergreffi <i>ENEA</i>
16:30 – 16:45	Design methods for Beam Intercepting Devices for Particle Accelerators	Luca Tricarico <i>University of Bologna</i>
16:45 – 17:00	Improving Initialization of ASTEC's Thermal-Hydraulic Solver with Machine Learning-Based Methods for Enhanced Convergence in Severe Accident Simulations	Marcello Savini <i>University of Bologna</i>
17:00 – 17:30	Q&A	
Evening	<i>Social Event (To be defined)</i>	
	End Day 1	

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Day 2

Wednesday, June 18, 2025

8:45 – 9:15	Digitalisation of Knowledge and Data Management in the CONNECT-NM Project: the Nuclear Materials Knowledge Organisation System (NM-KOS)	Emanuele Ghedini <i>University of Bologna</i>
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Experimental Campaigns and Facility Updates

Chair: To be defined

9:15 – 9:30	Flow Induced Vibration (FIV) experiment in the HELENA facility	Ivan Di Piazza <i>ENEA</i>
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9:30 – 9:45	Lead corrosion performance of Al and Cr based pack cementation coatings on 316Ti without pre-oxidation treatment	Chantal Vannini <i>NEWCLEO</i>
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9:45 – 10:00	NACIE-LHT revamping and experimental test	Pietro Cioli Puviani <i>NEWCLEO</i>
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10:00 – 10:15	Measurement of $^{63,65}\text{Cu}$ neutron capture cross sections at the n_TOF facility	Nicholas Pieretti <i>University of Bologna</i>
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10:15 – 10:45	Q&A	
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Poster Session + Coffee Break

Round Table: Experimental data for innovative nuclear reactors

Chair: To be defined

12:15 – 12:45	Q&A	
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12:45 – 13:00	Conclusion and Final remarks	Mariano Tarantino <i>Head of ENEA NUC-ENER Division</i>
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Matteo Gherardi
University of Bologna

End of Workshop