TECHNICAL WORKSHOP

Modelling and optimization tools to assess hybrid energy systems integrating nuclear reactors

SAVE THE DATE

February 20 – 21, 2025

"Le Benedettine" Congress Centre, Pisa

Piazza S. Paolo a Ripa D'Arno, 16 - Pisa

The TANDEM project is organizing a second free, open technical workshop. TANDEM is a European research project funded by the European Commission focusing on the study of an integrated vision of the energy system based on the hybridization of nuclear and renewable sources with thermal and power storage and downstream applications to provide electricity, heat and hydrogen.

The workshop will be held in Pisa, Italy, at the "Le Benedettine" Congress Centre of the University of Pisa on February 20-21, 2025. The technical workshop is specifically conceived for MSc and PhD students, PostDocs, young and experienced researchers and engineers that are interested in deepening their knowledge on the potential role that hybrid energy systems including Small Modular Reactors (SMRs) play in the ongoing energy transition.

The workshop will focus on the description of SMR modelling and optimization tools to assess hybrid energy systems integrating nuclear reactors, together with the SMR coupling with other energy sources and energy storage systems in hybrid energy systems.

The workshop preliminary programme is provided below.

Day		Activity	Speakers
Day 1	Morning	9:30 Welcome Addresses	M. Ricotti (CIRTEN and POLIMI) W. Ambrosini (UNIPI)
		9:45 – 10:00 Self Introduction of participants	All
		10:00 – 10:30: Brief presentation of the TANDEM project: objectives, activities, expected outcomes, status	Claire Vaglio-Gaudard, Coordinator (CEA)
		10:30 – 11:00: Coffee Break	
		11:00 – 11:30: Energy system scenarios in TANDEM	Christophe SCHNEIDESCH (TRACTEBEL - BELGIUM), WP1 Leader
		11:30 – 13:00: Panel on the future energy system scenarios according to Industrial and Utility Representatives: • Ansaldo Nucleare • ENEL • Edison	Michele Frignani (Ansaldo) Luca Mastrantonio (ENEL) Alberto Pasanisi (Edison)
		13:00 – 14:00: Lunch Break	
	Afternoon	14:00 - 15:00: Status of design and technology development of advanced reactors, including SMRs, and their applications	Mr. Frederik Reitsma, IAEA (TBC)
		15:00 – 16:00: Components of Hybrid Energy Systems with Advanced Nuclear Power Reactors, including SMRs	Mr. Frederik Reitsma, IAEA (TBC)
		16:00 – 16: 30: Coffee Break	
		16:30 – 17:30: Non-Electric Applications of Nuclear Energy	Ms. Molly-Kate Gavello, IAEA (TBC)
		17:30 – 18:30 Tools for energy system design, optimization and analysis	Paul Talbot, INL

Day		Activity	Speakers
Day 2	Morning	9:00- 10:00: Nuclear Desalination	G. Caruso (Università di Roma Sapienza)
		10:00 – 11:00: Modelling Tools for NHES: Introduction to Modelica and BoP models	S. Lorenzi (POLIMI)
		11:00 – 11:30: Coffee Break	
		11:30 – 12:00: Coupling strategy between CATHARE and Modelica	A.De Angelis (UNIPI)
		12:00 – 13:00: Simulation of a load rejection and a loss of offsite power scenario in a cogeneration SMR	P. Olita (CEA)
		13:00 – 14:00: Lunch Break	
	Afternoon	14:00 - 15:00: Demonstration Exercise, Session with Modelica	S. Lorenzi (POLIMI), A. De Angelis (UNIPI), P. Olita (CEA)
		15:00 – 16:00: Coupled SMR Simulation with ATHLET and Modelica	Sebastian Buchholz (GRS)
		16:00 – 16: 30: Coffee Break	
		16:30 – 17:30: Lesson Learned and Modelling tools to assess the safety of NPPs	Sebastian Buchholz (GRS), S. Lorenzi (POLIMI), A. De Angelis (UNIPI), P. Olita (CEA)
		17:30 -18:00: Concluding remarks	All

Given the specificity of the technical workshop, applicants are required to have a general background in nuclear systems.

Please register at:

https://docs.google.com/forms/d/e/1FAIpQLSdmoe_sYgrF2la1zlMrcXNryEDil_B0a896d24Ai1k0az_iKg/viewform?usp=sf_link

The registration deadline for the workshop is January 15, 2025. The number of in presence participants will be limited to 30 people.

Save the dates in your calendar!

We are looking forward to welcoming you to Pisa for this second TANDEM technical workshop!

For the organizing committee of the TANDEM technical workshop at the University of Pisa

Walter Ambrosini, Andrea Pucciarelli, Alessandro De Angelis, University of Pisa
Claire Vaglio-Gaudard, CEA – Coordinator of TANDEM project
Stefano Lorenzi, Politecnico di Milano
Marco Ricotti, CIRTEN
Gabriel Pavel, ENEN – Leader of the E&T activities in the TANDEM project