

6th Winter School for PhD students on
FLUID MACHINES AND ENERGY SYSTEMS
March 31st – April 4th, 2025

*Fluid Machines, Energy Systems, and Sustainable
Mobility in the Green Energy Transition*

“Le Benedettine” Conference Center
Piazza S. Paolo a Ripa D'Arno, 16 – 56122 - Pisa

6th Winter School for PhD students on

FLUID MACHINES AND ENERGY SYSTEMS

March 31st – April 4th, 2025

University of Pisa

The 6th Winter School on fluid machines and energy systems, organized by University of Pisa for AIMSEA (Italian Association of Fluid Machines and Energy Systems), will be held in Pisa, Italy, from **March 31st to April 4th**. This event is intended for PhD students working on fluid machines and energy systems.

The main subject of the school will be **Fluid Machines, Energy Systems, and Sustainable Mobility in the Green Energy Transition**. The approach to energy conversion and utilization is evolving towards a new paradigm. However, this transition comes with various technical and economic challenges that need thorough investigation.

The school will provide an opportunity to discuss these topics, gain insights into the latest frontiers of engineering research, and foster collaboration among PhD students. The program will include lectures by distinguished speakers from academia and industry. Workgroups and social events will be organized to enhance participant interaction and share the best practices.

I hope you will enjoy this edition of the Winter School on Fluid Machines and Energy Systems!

Prof. Lorenzo Ferrari
Coordinator of the Winter School
lorenzo.ferrari@unipi.it

Keynotes

- **Prof. D. Poli** University of Pisa
What are smart grids? Were the electrical systems of the past really “dumb”?
- **Dr. A. Fusi** C.S.T. Srl
Compression systems in the green energy transition
- **Prof. A. Traverso** University of Genova
Time-dependent analysis of energy systems and recent advancements
- **Dr. J. Andreas** Argo-Anleg GmbH
Hydrogen Application and Safety Aspects: Norms and regulations for Hydrogen in mobile and machine applications
- **Prof. S. Krumdieck/Dr. P. Cherubini** Harriot Watt University
Designing new turbomachinery or a new energy system. Which is harder?
- **Dr. Giovanni Paolicelli** Asso Werke S.p.A.
Innovative ICE Components: Opportunities and Challenges in the Era of Green Transition
- **Prof. G. Manzolini** Polytechnic University of Milano (*)
Optimization of energy systems: KPIs and approach

Technical lectures

- **Prof. R. Pacciani** University of Florence
Transition modelling for turbomachinery applications
- **Prof. E. Pipitone** University of Palermo
Engine testing and indicating analysis
- **Dr. G. Cinti** University of Perugia
Ammonia as an energy carrier
- **Prof. M. Renzi** Free University of Bozen/Bolzano
Pump-as-turbines for energy recovery: opportunities, performance prediction models and applications
- **Prof. M. Petrollese** University of Cagliari
Long-Term Energy Storage Systems: Analyzing Their Role, Key Technologies, and Challenges
- **Prof. O. Chiavola** University of Roma 3
Renewable fuels as drop-in fuels in diesel engines: performance and emissions
- **Dr. A. G. Sanvito** Polytechnic University of Milano (*)
Numerical modelling and wind tunnel experiments of floating wind turbines
- **Prof. C. Pianese** University of Salerno (*)
Towards Low Emissions CI Engines Fed with Diesel-OMEX blends
- **Dr. G.F. Frate** University of Pisa (*)
High Temperature Heat Pumps for the electrification of process heat

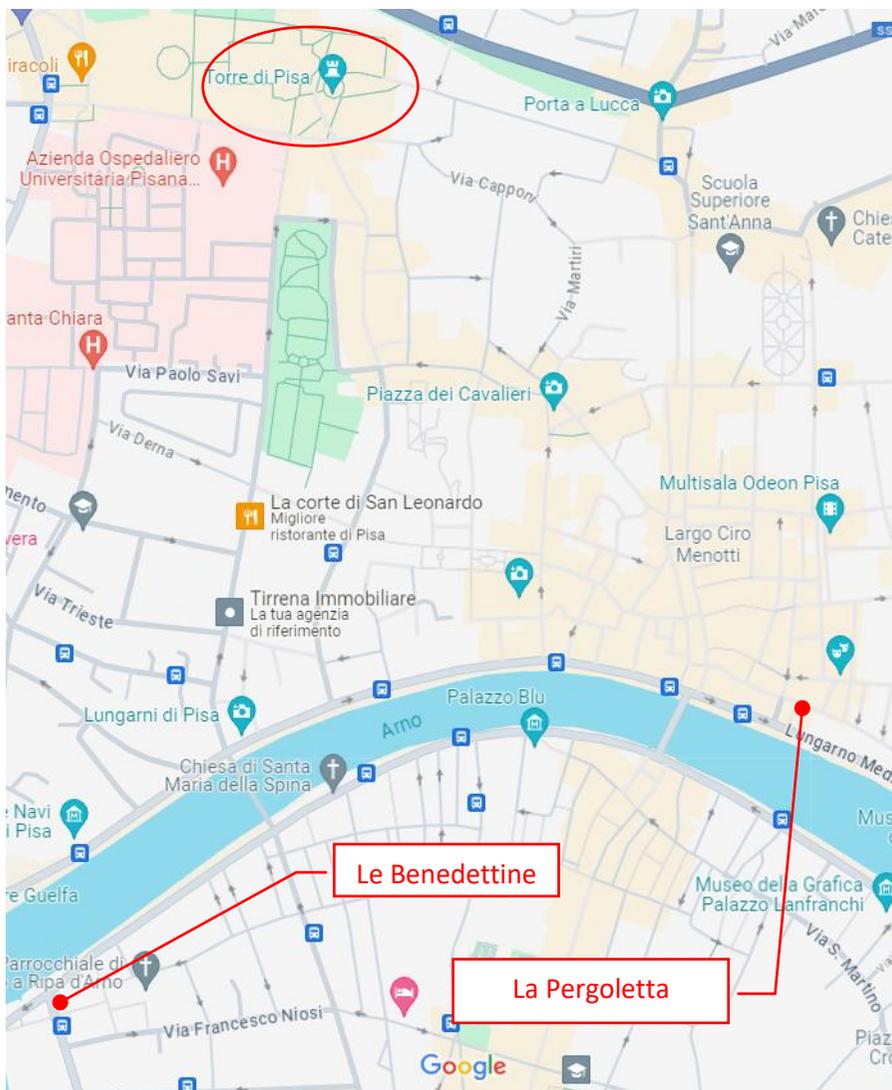
(*) results of the project: NEST - Network for Energy Sustainable Transition

	March 31st	April 1st	April 2nd	April 3rd	April 4th
09:30 - 9:45	Registration 10:30 - 11:00	Attendance registration K5 - Prof. Krumdieck Dr. Cherubini	Attendance registration K6 - Dr. Paollicelli	Attendance registration K7 - Prof. Manzolini	Attendance registration
09:45 - 11:00					
11:00 - 11:30	Opening ceremony	Coffee break	Coffee break	Coffee break	Coffee break
11:30 - 12:45	K1 - Prof. Poli	T1 - Prof. Pacciani	T4 - Prof. Renzi	T7 - Prof. Pianese	Workgroup activity
12:45 - 14:00	Lunch	Lunch	Lunch	Lunch	Lunch
14:00 - 15:15	K2 - Dr. Fusi	T2 - Prof. Pipitone	T5 - Dr. Cinti	T8 - Dr. Sanvito	Closing ceremony
15:15 - 16:30	K3 - Dr. Andreas	T3 - Prof. Petrollese	T6 - Prof. Chiavola	T9 - Dr. G.F. Frate	
16:30 - 17:45	K4 - Prof. Traverso	Coffee break	Coffee break	Coffee break	
17:45 - 19:00	Welcome reception	Workgroup activity	Workgroup activity	Workgroup activity	
			Social dinner		

Activities performed within the project **NEST - Network for Energy Sustainable Transition**

Locations

March 31st – April 4th "Le Benedettine" Conf. Center - Piazza S. Paolo a Ripa D'Arno, 16, Pisa
 March 31st Welcome reception @5:45 pm - "Le Benedettine" Conf. Center
 April 2nd Social dinner @7:30 pm - "La Pergoletta" Via delle Belle Torri, 40, Pisa





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Territory and Construction Engineering
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