AIM SEA Associazione Italiana delle Macchine a fluido e dei Sistemi per l'Energia e l'Ambiente

NEST NETWORK FOR ENERGY SUSTAINABLE TRANSITION

UNIVERSITÀ DI PISA

6th Winter School for PhD students on

FLUID MACHINES AND ENERGY SYSTEMS

March 31tt – April 4th, 2025

University of Pisa

"Le Benedettine" Conf. Center - Piazza S. Paolo a Ripa D'Arno, 16, Pisa

The 6th Winter School, organized by 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.

Additional information, important dates, and registration fee

- Applications must be submitted here before **February 28th, 2025.** Required documents (in pdf form): identity document (passport in case of a foreign student), signed enrolment form, curriculum vitae, certification of PhD student status.
- The application will be revised by a Scientific Committee. If approved, the payment of a fee of € 500,00 is requested. The fee includes attendance, 1 welcome reception, 1 social dinner, 5 lunches and 7 coffee breaks
- No refund of the registration fee will be possible after March 17th, 2025
- University of Pisa awards 1 grant, corresponding to the registration fee. Selection will be performed by a Scientific Committee based on the CVs of those PhD students who submitted the application before **February 17th, 2025.**
- The social dinner will be on April 2nd at 7:30 pm - Location TBD
- April 3rd will be reserved for the presentation of activities performed under the project: NEST - Network for Energy Sustainable Transition

For further information

- Prof. Lorenzo Ferrari, Winter School Coordinator: lorenzo.ferrari@unipi.it
- Summer/Winter School Administrative Office: support.summerschool@unipi.it

Preliminary program

Keynotes

- **Prof. D. Poli** University of Pisa
  What are smart grids? Were the past electrical systems really dumb?
- **Dr. A. Fusi** Compression Service Technology 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
- **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

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

This day is dedicated to the presentation of the activities performed within the project **NEST - Network for Energy Sustainable Transition**

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