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

UNIVERSITÀ DI PISA

5th Winter School for PhD students on

FLUID MACHINES AND ENERGY SYSTEMS

March 25th – 29th, 2024
University of Pisa

The 5th Winter School for PhD students of fluid machines and energy systems promoted by AIMSEA (Italian Association of Fluid Machines and Energy Systems) will be held in Pisa (Italy) on **March 25th - 29th**. The main topic of the school will be **Renewable Energies**, **Energy Storage** and **Energy Transition**. In the last years, the share of renewable sources in the energy mix of several countries is increased with a steady pace. This led to a revolution in the way to conceive energy conversion and diffusion in comparison to a fossil fuel-based system. However, the transition to a future with a high penetration of renewables implies several criticalities from both the technical and economic point of views. The school will be the opportunity to discuss these topics, have an insight to new frontiers of engineering research and promote the cooperation between PhD Students. The focus of the conference will be **Fluid Machines (FM)**, **Energy Systems (ES)** and **Sustainable Mobility (SM)**.

	Monday March 25th	Tuesday March 26th	Wednesday March 27th	Thursday March 28th	Friday March 29th
09:30		Plenary 3 Prof. Barigozzi Room A	Plenary 4 Prof. Bollino Room A	Plenary 5 Prof. Ferrara Room A	Workgroup activity Presentation and discussion Room A
10:00					
10:30					
11:00	Opening Ceremony	Coffee break	Coffee break	Coffee break	Coffee break
11:30	Plenary 1 Prof. Madlener Room A	TM-1 Prof. Igie Room A / ES-1 Prof. Taccani Room B	ES-2 Dr. Bargiacchi Room A / TM-3 Dr. Salvadori Room B	SM-3 Prof. Fontanesi Room A / TM-4 Prof. Bianchi Room B	Workgroup activity Presentation and discussion Room A
12:00					
12:30					
13:00	Lunch	Lunch	Lunch	Lunch	Lunch
13:30					
14:00	Plenary 2 Dr. Cosi Room A	TM-2 Prof. Pavesi Room A / SM-1 Prof. Cameretti Room B	ES-3 Prof. Valenti Room A / SM-2 Prof. Postrioti Room B	SM-4 Dr. Ferrera Room A / ES-4 Prof. Comodi Room B	Closing Ceremony
14:30					
15:00					
15:30	Coffee break	Coffee break	Coffee break	Coffee break	
16:00	Plenary3 Dr. Pecorini Room A	Workgroup Self-learning activity	Workgroup Self-learning activity	Workgroup Self-learning activity	
16:30					
17:00					
17:30					
	Welcome reception	Social dinner			

Location: "Le Benedettine" Conference Center
Piazza S. Paolo a Ripa D'Arno, 16 – 56122 – Pisa

Keynotes

- **Prof. R. Madlener** RWTH Aachen University
  Challenges and flexibility options for high shares of renewables
- **Dr. L. Cosi** Baker Hughes spa
  The development of turbomachinery in the energy transition era
- **Dr. I. Pecorini** University of Pisa
  Waste biorefinery to produce renewable energy: bioconversion process and circular bioeconomy
- **Prof. G. Barigozzi** University of Bergamo
  Film cooling challenges for sustainable gas turbine engines
- **Prof. C. A. Bollino** University of Perugia
  The fundamentals of the electricity market design
- **Prof. G. Ferrara** University of Florence
  The future of the ICE ... is a future still possible?

Fluid machines

- **Prof. U. Igie** University of Cranfield
  Compressor fouling in gas turbines: impact on blade aerodynamics and engine performance
- **Prof. G. Pavesi** University of Padova
  Nature-Inspired Design
- **Dr. S. Salvadori** Politecnico di Torino
  Unsteady Flows and Component Interaction in Turbomachinery
- **Prof. S. Bianchi** Airbus Group
  Aeroelasticity of fan/intake system under real operating conditions

Energy systems

- **Prof. R. Taccani** University of Trieste
  The potential of hydrogen in the decarbonization of hard to abate sectors
- **Dr. E. Bargiacchi** ETH Zurich
  Life Cycle Sustainability Assessment of energy systems: lessons learnt for Hydrogen and Carbon Capture and Utilization technologies
- **Prof. G. Valenti** Politecnico di Milano
  Liquid hydrogen technologies for mobility applications
- **Prof. G. Comodi** Politecnico delle Marche
  Role of energy systems in enabling flexibility services and sector coupling in the energy transition

Sustainable mobility

- **Prof. M. C. Cameretti** University of Naples "Federico II"
  The role of CFD modeling in the study of internal combustion engines powered by alternative fuels
- **Prof. L. Postrioti** University of Perugia
  Methodologies for the experimental analysis of hydrogen injection systems for internal combustion engines
- **Prof. S. Fontanesi** University of Modena and Reggio Emilia
  Hydrogen ICEs: hysteria, hypocrisy, hype or hope?
- **Dr. M. Ferrera** Dumarey Automotive Italia S.p.A.
  Sustainable and flexible solutions for next generation of internal combustion engines

Fees and application:

- Applications must be submitted here before **Feb. 24th**. Required documents (in pdf form): identity document (passport in case of a foreign student), signed enrolment form, curriculum vitae, certification of PhD student status
- Once the application has been approved, a fee of € 500,00 is requested. The fee includes attendance, 1 welcome reception, 1 social dinner, 5 lunches and 8 coffee breaks

For additional information:

- Prof. Lorenzo Ferrari
  lorenzo.ferrari@unipi.it +39 050 221 7132
- Summer/Winter School Office
  support.summerschool@unipi.it

Department of Energy, Systems, Territory and Construction Engineering
University of Pisa

Suggested accommodations

RESIDENCE LE BENEDETTINE
Lungarno Sonnino 18, Pisa, Italia
Tel. 050 28 257 Fax 050 22 06 593

HOTEL LA PACE
Viale Gramsci, 14 (Galleria B) – 56125 Pisa
Tel. 050.29351-2 48863 Fax 050.502266

HOTEL ROMA
Via Bonanno, 111 – 56126 Pisa
Tel. 050.554488 Fax 050.550164

HOTEL VERDI
Piazza della Repubblica, 5 – 56125 Pisa
Tel. 050.598947 Fax 050.598944

HOTEL BOLOGNA
Via Mazzini, 57 – 56125 - Pisa
Tel. 050.502120 Fax 050.43070

HOTEL REPUBBLICA MARINARA
Via Matteucci, 81 – 56124 Pisa
Tel. 050.3870100 Fax 050.3870200

HOTEL ROYAL VICTORIA
Lungarno Pacinotti, 12 – 56126 Pisa
Tel. 050.940111 Fax 050.940180

GRAND HOTEL BONANNO
Via Carlo Francesco Gabba, 17 – 56122 Pisa
Tel. 050.524030 Fax 050.532072

How to reach Pisa:

- Train: The Pisa Central railway station is served by regional trains from Florence (approx. 1 hour), and by Regional, Frecciabianca and Interregional trains serving the Italian west coast from Genoa to Rome. (www.trenitalia.com)
- Car: Pisa can be easily accessible by car from Florence by using the A11 motorway from Firenze Nord exit on the A1, or by using the S.G.C. Firenze-Pisa-Livorno from the Firenze Scandicci exit on the A1. Along the A12 (Genova- Rosignano) there are two exits to reach Pisa (Pisa Nord e Pisa Centro).
- Airplane: Pisa Airport (https://www.pisa-airport.com/) or Florence Airport (www.aeroporto.firenze.it/).
- Bus: Flixbus offers several low-cost connections by coach to Pisa. (www.flixbus.it).

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