

2024 PhD Week – Energy and Environmental Engineering Sciences

Final Program

WEDNESDAY 16/10/2024 h 11:30 – Sala Verde DPIA

Invited talk

Title: Enable technologies for efficient latent Thermal Energy Storages: a research path

Speaker: Simone Mancin (University of Padova)

WEDNESDAY 16/10/2024 h 16:45 – 18:30 – Sala Verde DPIA

ORAL presentations by the 1st-year students (Cycle XXXIX) – max 15 minutes

- **Asghar Rizwan** (Sup. C. De Leitenburg, co-Sup. A. Trovarelli)
Topic: Sustainable catalysts for environmental and energy applications
- **Dorbolò Lorenzo** (Sup. P. Giannattasio, co-Sup. Marco Pretto)
Topic: Modelling of present and future civil air traffic around airports via flight tracking data
- **Milocco Emanuele** (Sup. A. Soldati) **ONLINE**
Topic: Computational modeling of multiphase flows
- **Munir Talha** (Sup. D. Zuccaccia, co-Sup. E. Aneggi)
Topic: Green synthesis and catalytic applications of ruthenium complexes through mechanochemistry
- **Rahman Hamood Ur** (Sup. C. Marchioli)
Topic: Development and assessment of Wall-Modeled Large Eddy Simulation (WMLES) for multiphase turbulent compressible flows
- **Ricardo García Josè Alejandro** (Sup. A. Melchior, co-Sup. M. Sanadar)
Topic: Critical materials recycling: speciation and separation of rare earths elements from complex matrixes
- **Rota Chiara** (Sup. L. Fedrizzi, co-Sup. F. Furlani, A. Rondinella. PNRR) **ONLINE**
Topic: Development and characterisation of new surface modifications to titanium alloys for biomedical applications

THURSDAY 17/10/2024 h 09:30 – Sala Verde DPIA e spazi antistanti

POSTER presentations by the 2nd-year students (Cycle XXXVIII) with Best Poster Award

Committee: G. Alberti, M. Cobal, E. Salvati

- **Aouissi Imad Eddine** (Sup. S. Colussi, PNRR)
Topic: Utilisation of solid, liquid and gaseous steelmaking by-products for the development of circular economy processes
- **Fonda Nicolas** (Sup. A. Trovarelli)
Topic: Fundamental insights of catalyst preparation using a mechano-chemical approach
- **Kumar Vinod** (Sup. S. Savino, co-Sup. C. Nonino)
Topic: Performance analysis and optimization of receivers for solar thermal power plants
- **Rocca Vera Ana Paola** (Sup. P. D'Agaro, PNRR)
Topic: 4.0 Energy improvement interventions as part of an integrated approach
- **Sicco Emanuele** (Sup. G. Cortella, co-Sup. P. D'Agaro) **ONLINE**
Topic: Low environmental impact refrigerants in cooling and heating systems
- **Sufyan Muhammad** (Sup. D. Goi, Co-Sup. G. Martelli, P. Teatini - UniPD, UNESCO Chair)
Topic: Managed Aquifer Recharge (MAR) to reduce aquifer vulnerability to climate change and to control groundwater declining yields
- **Tubaro Erica** (Sup. F. Andreatta, co-Sup. L. Fedrizzi, PNRR)
Topic: Development of environmentally-friendly and multifunctional organic coatings
- **Zanelli Elia** (Sup. D. Goi, co-Sup. M. Nicolini)
Topic: Analysis and minimization of water supply systems vulnerability to contamination events

THURSDAY 17/10/2024 h 14:30 – Sala Verde (piccola ex-DPIA)

ORAL presentations by the 3rd-year PhD students (cycle XXXVII, scientific areas "Heat and Fluid Flow" & "Processi Chimici e dei Materiali") – Max 20 minutes (15 min talk + 5 min questions)

Committee: P. Giannattasio, A. Lanzutti, C. Marchioli

- **Enrico De Betta** (Sup. P. Giannattasio)
Topic: Modelling of ignition and combustion of green fuels in internal combustion engines
- **Michele Motta** (Sup. F. Andreatta, PON)
Topic: Development of low-particulate friction material for electric vehicle (BEV), hybrid (HEV), and plug-in hybrid (PHEV) braking systems
- **Diego Perissutti** (Sup. C. Marchioli, PON)
Topic: Development of multiphase thermofluid dynamics models for numerical analysis of thermal insulation devices using renewable energies
- **Francesco Sordetti** (Sup. A. Lanzutti)
Topic: Study of innovative casting duplex stainless steels used for thick-walled components in desalination plants: optimization of heat treatment and chemical composition

THURSDAY 17/10/2024 h 16:30 – Auditorium ex DCFA (via del Cotonificio 108)

ORAL presentations by the 3rd-year PhD students (cycle XXXVII, scientific areas “Processi Chimici e dei Materiali” & “Ottimizzazione Energetica e Industriale”) – Max 20 minutes (15 min talk + 5 min questions)

Committee: M. Boaro, S. Colussi, A. Melchior

- **Maria Cracchiolo** (Sup. A. Melchior)
Topic: Atomistic simulations of platinum anti-cancer compounds at the interfaces and interaction with biological targets
- **Andrea Felli** (Sup. S. Colussi, PON)
Topic: Eco-friendly mechano-chemical synthesis of innovative metal supported catalysts for energy and environmental applications
- **Andela Kovacevic** (Sup. A. Melchior, PON)
Topic: Selective recovery of metals of technological and environmental interest from complex aqueous matrices of industrial origin
- **Andrea Strazzolini** (Sup. M. Boaro, co-Sup. Prof. De Leitenburg)
Topic: New oxygen carriers to implement chemical looping processes for the decarbonisation of industry and/or H₂ production

FRIDAY 18/10/2024 h 10:30 – Sala Verde (piccola ex-DPIA)

Invited talk

Title: The role of polymer additives in improving the tribological performance of lubricated contacts

Speaker: Luca Biancofiore (Università de L'Aquila)

FRIDAY 18/10/2024 h 14:30 – Auditorium ex DCFA (via del Cotonificio 108)

ORAL presentations by the 3rd-year PhD students (cycle XXXVII, scientific area “Processi Chimici e dei Materiali” and “Ottimizzazione Energetica e Industriale”) – Max 20 minutes (15 min talk + 5 min questions)

Committee: C. De Leitenburg, S. Grimaz, M. Mainardis

- **Alessia Cossettini** (Sup. D. Goi, UNESCO Chair)
Topic: Biosensors for the detection of biological and chemical contaminants in the integrated water cycle and wastewater
- **Elisabetta Gover** (Sup. D. Goi, PON)
Topic: Photodynamic disinfection of water intended for reuse: biocompatible and environmental-friendly approaches
- **Anna Marta Pozzi** (Sup. A. Morassi)
Topic: Structural health monitoring of bridges and related inverse problems

NOTE: Oral presentations can be given either in Italian or in English