

## 2023 PhD Week – Energy and Environmental Engineering Sciences

The 2023 PhD Week of the PhD Program in Energy and Environmental Engineering Sciences will be held from **Wednesday, October 18, 2023** to **Friday, October 20, 2023** with the following preliminary programme:

### WEDNESDAY 18/10/2023 h 14:30 – Sala Verde (piccola ex-DPIA)

*Invited talk*

*Title: Molecular approaches to sustainable catalysis*

*Speaker: Rita Mazzoni (Università degli Studi di Bologna)*

### WEDNESDAY 18/10/2023 h 16:00 – 18:00 – Sala Verde (piccola ex-DPIA)

*ORAL presentations by the 1<sup>st</sup>-year students (Cycle XXXVIII)*

Length of presentation: 10 - 15 min (max 15 min allowed)

- **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)  
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 19/10/2023 h 10:30 – Sala Verde (piccola ex-DPIA) e spazi antistanti

*POSTER presentations by the 2<sup>nd</sup>-year students (Cycle XXXVII) with Best Poster Award*

*Committee: G. Cortella, C. Poloni, A. Meneghetti*

- **Maria Cracchiolo** (Sup. A. Melchior)  
Topic: Atomistic simulations of platinum anti-cancer compounds at the interfaces and interaction with biological targets
- **Enrico De Betta** (Sup. P. Giannattasio)  
Topic: Modelling of ignition and combustion of green fuels in internal combustion engines
- **Anna Marta Pozzi** (Sup. A. Morassi)  
Topic: Structural health monitoring of bridges and related inverse problems
- **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
- **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 H<sub>2</sub> production
- **Andrea Felli** (Sup. S. Colussi, PON)  
Topic: Eco-friendly mechano-chemical synthesis of innovative metal supported catalysts for energy and environmental applications
- **Elisabetta Gover** (Sup. D. Goi, PON)

Topic: Photodynamic disinfection of water intended for reuse: biocompatible and environmental-friendly approaches

- **Andela Kovacevic** (Sup. A. Melchior, PON)  
Topic: Selective recovery of metals of technological and environmental interest from complex aqueous matrices of industrial origin
- **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
- **Alessia Cossettini** (Sup. D. Goi, UNESCO Chair)  
Topic: Biosensors for the detection of biological and chemical contaminants in the integrated water cycle and wastewater

#### **THURSDAY 19/10/2023 h 14:30 – Sala Verde (piccola ex-DPIA)**

*Invited talk*

*Title: Multi Objective Design Optimization: From algorithms to processes*

*Speaker: Carlo Poloni (ESTECO s.p.a. & Università di Trieste)*

#### **FRIDAY 20/10/2023 h 10:45 – Sala Verde (piccola ex-DPIA)**

*ORAL presentations by the 3<sup>rd</sup>-year PhD students (cycle XXXVI, scientific areas “Heat and Fluid Flow” & “Ottimizzazione Energetica e Industriale”)*

Committee: C. Marchioli, G. Cortella, P. D’Agaro

Length of presentation: 15 min + questions (max 20 min allowed)

- **Georgios Giamagas** (Sup. Prof. Marchioli)  
Topic: Wave formation and breaking: Influence of surfactant
- **Gabriele Toffoletti** (Sup. Prof. Cortella)  
Topic: Refrigeration systems and heat pumps with natural fluids

#### **FRIDAY 20/10/2023 h 14:30 – Auditorium ex DCFA (via del Cotonificio 108)**

*ORAL presentations by the 3<sup>rd</sup>-year PhD students (cycle XXXVI, scientific area “Processi Chimici e dei Materiali”)*

Committee: D. Zuccaccia, M. Boaro, D. Goi (suppl. Mainardis)

Length of presentation: 15 min + questions (max 20 min allowed)

- **Filippo Campagnolo** (Sup. Prof. Zuccaccia, co-Sup. Prof. Aneggi)  
Topic: Development of novel ruthenium(II) bis-NHC complexes as chemicals platform for homogeneous catalysis
- **Gianmarco Miroddi** (Sup. Prof. Boaro, co-Sup. Prof. Trovarelli)  
Topic: Design, development and implementation of a thermo-photo catalytic reaction system to study the plasmonic effect on small molecule (CO<sub>2</sub>, H<sub>2</sub>, CH<sub>4</sub>) activation and reaction
- **Federico Spizzo** (Sup. Prof. Goi, UNESCO Chair)  
Topic: Analysis and vulnerability of water distribution systems for potential pollution phenomena control
- **Andrea Zanolla** (Sup. Prof. Goi, UNESCO Chair)  
Topic: Vulnerability and resilience of the sewage-WWTP system: perspectives of water recovery

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