

## 2022 PhD Week – Energy and Environmental Engineering Sciences

The 2022 PhD Week of the PhD Program in Energy and Environmental Engineering Sciences will be held from **Tuesday, October 18, 2022** to **Thursday, October 20, 2022** with the following preliminary programme:

### **TUESDAY 18/10/2022 h 14:30 – 17:15 – Sala Verde (piccola ex-DPIA)**

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

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

- **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: Sciences and technologies for territorial resilience: Application of innovative methods and researches for Biomonitoring Sciences and Technologies in the Integrated Water Cycle

### **WEDNESDAY 19/10/2022 h 10:00 – Sala Verde (piccola ex-DPIA) e spazi antistanti**

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

Committee: Francesco Boscutti, Roberta Musina, Francesco Nazzi (membro supplente: Walter Baratta)

- **Filippo Campagnolo** (Sup. Prof. Zuccaccia, co-Sup. Prof. Aneggi)  
Topic: Sustainable gold catalysis
- **Georgios Giamagas** (Sup. Prof. Marchioli)  
Topic: Wave formation and breaking: Influence of surfactant
- **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** (UNESCO Chair, Sup. Prof. Goi)  
Topic: Analysis and vulnerability of water distribution systems for potential pollution phenomena control
- **Gabriele Toffoletti** (Sup. Prof. Cortella)  
Topic: Refrigeration systems and heat pumps with natural fluids
- **Andrea Zanolla** (UNESCO Chair, Sup. Prof. Goi)  
Topic: Vulnerability and resilience of the sewage-WWTP system: perspectives of water recovery

**WEDNESDAY 19/10/2022 h 15:30 – Sala Verde (piccola ex-DPIA)**

**Invited talk**

*Title: Numerical reproduction of cavitating flows and the evaluation of hydroacoustic noise*

*Speaker: Marta Cianferra, Dipartimento di Ingegneria e Architettura, Università di Trieste*

**THURSDAY 20/10/2022 h 11:00 – Sala Verde (piccola ex-DPIA)**

**Invited talk**

*Title: Small scale liquid fuel plant design through Fischer Tropsch synthesis*

*Speaker: Prof. Xinying Liu, Institute for the Development of Energy for African Sustainability, University of South Africa*

**THURSDAY 20/10/2022 h 14:00 – Sala Verde (piccola ex-DPIA)**

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

Committee: C. Marchioli, S. Savino, M. Campolo

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

- **Davide Di Giusto** (Sup. Prof. Marchioli, co-Sup. Prof. Soldati)  
Topic: Flexible fibers in turbulent channel flow at high Reynolds number
- **Fernando Kevin Miranda S. Cruz** (Sup. Prof. Marchioli, co-Sup. Prof. Campolo)  
Topic: Simulation of particle-droplet interaction in turbulent three-phase flows

**THURSDAY 20/10/2022 h 15:00 – Auditorium ex DCFA (via del Cotonificio 108)**

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

Committee: G. Capurso, D. Goi, M. Mainardis, A. Lanzutti

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

- **Antonio Carabillò** (Sup. Prof. Lanzutti)  
Topic: Tribology of titanium based PVD multilayer hard coatings on HSS for cold rolling application
- **Alessandro Moretti** (Sup. Prof. Goi)  
Topic: Integrated water cycle sustainability: water reuse in circular economy

NOTE: Oral presentations can be given either in Italian or in English. No specific template is required for the presentation slides.