Venice International University
VIU Graduate Seminar
Climate Change Mitigation: Carbon Capture and Utilization

July 12-16, 2021

Faculty
- Renato Baciocchi, Dept. Civil Engineering and Computer Science Engineering, Tor Vergata University of Rome, Italy (Coordinator)
- Giulia Costa, Dept. Civil Engineering and Computer Science Engineering, Tor Vergata University of Rome, Italy (Coordinator)
- Louis-César Pasquier, Centre Eau Terre Environment, Institut National de la Recherche Scientifique (INRS), Canada
- Ming Zhao, School of Environment, Tsinghua University, China
- Tom van Gerven, Dept. Chemical Engineering, KU Leuven, Belgium
- Stefano Stendardo, Italian National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA)
- Angela Di Benedetto, CIRCC - University of Bari, Italy
- Michele Aresta, CIRCC - University of Bari, Italy

Day 1, Monday July 12
9:00 - 9:15 – Welcome Coffee and registration
9:15 - 9:30 – Introduction to the course (Renato Baciocchi)
9:30-9:45 – Student presentations
9:45-11:15 – Role of CCUS as a climate change mitigation strategy and other drivers (invited speaker TBC)
11:15-11:30 – Coffee break
11:30-13:00 – Overview of CO₂ capture processes (Ming Zhao)
13:00-14:00 – Lunch
14:00-15:30 – Solid sorbents for CO₂ capture (Stefano Stendardo, ENEA)
15:30- 15:45 – Coffee break
15:45-17:15 – Strategies for achieving negative emissions: Air capture (Renato Baciocchi)
17:15-17:30 – Discussion

Day 2, Tuesday July 13
09:30-11:00 – Strategies for achieving negative emissions: BECCS (Ming Zhao)
11:00-11:15 – Coffee break
11:15-12:45 – Introduction on CO₂ utilization and storage (Renato Baciocchi)
12:45-13:00 – Discussion
13:00-14:00 – Lunch
14:00-15:30 – CO₂ to chemicals (Angela Di Benedetto, Michele Aresta, CIRCC-University of Bari)
15:30- 15:45 – Coffee break
15:45-17:15 – CO₂ to fuels (Angela Di Benedetto, Michele Aresta, CIRCC-University of Bari)
17:15-17:30 – Discussion

Day 3, Wednesday July 14
09:30-11:00 – CO₂ to materials: introduction to carbon mineralization (Giulia Costa)
11:00-11:15 – Coffee break
11:15-12:45 – Carbon mineralization applications in the construction sector (Louis-César Pasquier)
12:45-13:00 – Discussion
13:00-14:00 – Lunch
14:00-15:30 – Process intensification techniques (Tom van Gerven)
15:30- 15:45 – Coffee break
15:45-17:15 – Process intensification for CO₂ capture and utilisation (Tom van Gerven)
17:15-17:30 – Discussion

Day 4, Thursday July 15
09:30-11:00 – Carbon mineralization ex situ applications for industrial residues (Giulia Costa)
11:00-11:15 – Coffee break
11:15-12:45 – Carbon mineralization in situ applications for mining residues (Louis-César Pasquier)
12:45-13:00 – Discussion
13:00-14:00 – Lunch
14:00-15:30 – Student activity session
15:30- 15:45 – Coffee break
15:45-17:15 – Student activity session
17:15-17:30 – Discussion

Day 5, Friday July 16
1 day field trip to the industrial site of Porto Marghera.