



## Venice International University VIU Graduate Seminar

### Climate Change mitigation: carbon capture and utilization

November 15-19, 2021

#### Faculty

- Renato Baciocchi, Dept. Civil Engineering and Computer Science Engineering, University of Rome Tor Vergata, Italy (Coordinator)
- Giulia Costa, Dept. Civil Engineering and Computer Science Engineering, University of Rome Tor Vergata, Italy (Coordinator)
- Louis-César Pasquier, Centre Eau Terre Environnement, 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), Italy
- Angela Di Benedetto, CIRCC – University of Bari, Italy
- Michele Aresta, CIRCC – University of Bari, Italy

#### Day 1 | Monday, November 15

9:00 - 9:15 – *Welcome coffee and registration*

9:15 - 9:45 – Introduction to the course (Renato Baciocchi, Giulia Costa, Louis-César Pasquier)

9:45-11:15 – Overview of CO<sub>2</sub> capture processes (Ming Zhao) - [Online](#)

11:15-11:30 – *Coffee break*

11:30-13:00 – Strategies for achieving negative emissions: BECCS (Ming Zhao) - [Online](#)

13:00-14:00 – *Lunch*

14:00-15:00 – Student presentations

15:15-16:45 – Solid sorbents for CO<sub>2</sub> capture (Stefano Stendardo)

16:45-17:00 – Discussion



## **Day 2 | Tuesday, November 16**

09:00-10:30 – Strategies for achieving negative emissions: Air capture (Renato Baciocchi)

10:30-10:45 – *Coffee break*

10:45-12:15 – Introduction on CO<sub>2</sub> utilization and storage (Renato Baciocchi)

12:15-12:30 – Discussion

12:30-13:30 – *Lunch*

13:30-15:00 – CO<sub>2</sub> to materials: introduction to carbon mineralization (Giulia Costa)

15:00- 15:15 – *Coffee break*

15:15-16:45 – Thermal, Chemo-catalytic processes for CO<sub>2</sub> conversion into chemicals and fuels (Michele Aresta, CIRC-University of Bari)

16:45-17:00 – Discussion

## **Day 3 | Wednesday, November 17**

09:00-10:30 – Enzymatic and Hybrid catalysis for CO<sub>2</sub> conversion into chemicals and fuels (Angela Di Benedetto, CIRC-University of Bari)

10:30-10:45 – *Coffee break*

10:45-12:15 – Carbon mineralization applications in the construction sector (Louis-César Pasquier)

12:15-12:30 – Discussion

12:30-13:30 – *Lunch*

13:30-15:00 – Process intensification techniques (Tom van Gerven)

15:00- 15:15 – *Coffee break*

15:15-16:45 – Process intensification for CO<sub>2</sub> capture and utilisation (Tom van Gerven)

16:45-17:00 – Discussion

## **Day 4 | Thursday, November 18**

09:00-10:30 – Carbon mineralization ex situ applications for industrial residues (Giulia Costa)

10:30-10:45 – *Coffee break*

10:45-12:15 – Carbon mineralization in situ applications for mining residues (Louis-César Pasquier)

12:15-12:30 – Discussion

12:30-13:30 – *Lunch*

13:30-15:00 – Student activity session

15:00-15:15 – *Coffee break*

15:15-16:45 – Student activity session

16:45-17:00 – Discussion

*Evening: Social Dinner in Venice*

**Day 5 | Friday, November 19**

9:00- 13:00 – Field trip by boat to Valle Dogà guided by Mauro Doimi

13:00-14:00 – *Lunch*

14:00-17:00 – Industrial session: global perspective on CCU(S) projects

Participants: Enrico Napoletano (Napoletano & Partners); Antonio Bergamaschi (Phoenix ESD); Delio Belmonte (Green Methane); Kaoutar El-Khorassani (Saipem) and Johannes Thiefenthaler (Neustark)

*(Coffee break within the session)*

