

7TH ANNUAL INTERNATIONAL SOTACARBO SUMMER SCHOOL JUNE 10-14, 2019



IN COOPERATION WITH



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THANKS TO



7TH ANNUAL INTERNATIONAL SOTACARBO SUMMER SCHOOL ON LOW CARBON TECHNOLOGIES SOTACARBO RESEARCH CENTRE, CARBONIA (SARDINIA, ITALY) JUNE 10-14, 2019

The development and the commercial diffusion of low carbon technologies is more and more urgent to contain global warming and climate changes.

The **International Sotacarbo Summer School** on CCUS and low carbon technologies aims to provide information on recent technology advancements in the field of low carbon energy conversion. It covers different research areas, such as power generation from renewable energy sources (with particular reference to biomass) and the application of carbon dioxide capture, utilization and storage to power generation and industry.

The seventh edition is open to about **40 Ph.D. students and young researchers** interested in low carbon energy conversion from several different points of view: technologies, environmental effects, economic issues, legal issues, and many more.

The registration is free of charge and includes the full participation in the event: frontal lectures (performed by very eminent international speakers), student's interactive program, technical and touristic visits, meals and the access to the School material (presentations, posters and other technical documents).

POSTER SESSION

Participants are kindly invited to present a poster with their research work on CCUS-relevant topics. The poster (70x100 cm) must be sent in advance and it will be printed by the School organization, exposed during the event and shared with the participant through the electronic platform.



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SEVENTH ANNUAL INTERNATIONAL SOTACARBO SUMMER SCHOOL ON LOW CARBON TECHNOLOGIES CARBONIA, SOTACARBO RESEARCH CENTRE JUNE 10-14, 2019

PRELIMINARY PROGRAMME

Monday, June 10th, 2019 - Introduction

09:00 Registration

Opening session

Chairman: Alessandro Lanza (Sotacarbo, Italy)

10:50 Presentation and general introduction

11:10 Institutional welcome speech

11:30 Sources of CO₂, energy balance and CCUS approaches

11:55 International policies on CCUS: SET Plan, CSLF and Mission Innovation

12:20 Lunch

Session 1: Power generation from biomass

Chairman: Umberto Arena (Vanvitelli University, Italy)

13:30 Power generation from biomass

14:00 Syngas cleaning approaches

14:20 Biomass gasification in the energy market

14:40 Power generation by residue digestion

15:00 Break

15:20 Working Groups

18:00 End of technical activities

19:00 Icebreaker cocktail

Tuesday, June 11th, 2019

Session 2: CO₂ capture technologies

Chairman: Toby Lockwood (IEA Clean Coal Centre, United Kingdom)

09:00 Pre-combustion CO₂ capture: liquid solvents and mineral carbonation

09:30 Post-combustion CO₂ capture technologies

10:00 The potential role of chemical looping, oxy-combustion and S-CO₂ for the reduction of global warming

10:30 Break

Session 3: Advanced modeling for gasification and CO₂ capture

Chairman: Bhima Sastri (U.S. Department of Energy, USA)

10:50 Multiphase modeling and validation of solid CO₂ sorbent devices

11:20 Multiscale CFD modeling and validation of reacting gas-solid flows with application to fossil fuel reactors

11:50 Underground coal gasification and CCUS

12:20 Lunch

13:50 Visit to the Sotacarbo platform and labs

15:00 Break

15:20 Working groups

18:00 End of technical activities

Wednesday, June 12st, 2019

Session 4: CO₂ utilization I

Chairman: Serge Perineau (World Carbon-to-X, France)

09:00 CO₂ to liquid fuels: hydrogenation processes

09:30 CO₂ to liquid fuels: electrochemical and photo-electrochemical processes

10:00 CO₂ to chemicals

10:30 Break

11:50 CO₂-to-materials To be confirmed

11:50

12:20 Lunch

Session 5: CO₂ utilization II

Chairman: Flavio Manenti (Politecnico di Milano, Italy)

10:50 Hydrogen production technologies from renewable sources

11:20 Coal to X and CCS: a great association

11:50 tbd

12:20 Lunch

13:50 Working groups

15:00 Touristic tour and dinner

Thursday, June 13th, 2019

Session 6: CO₂ geological storage I - concepts

Chairman: Sallie Greenberg (Illinois State Geological Survey, USA)

9:00 CO₂ storage: where we are and new challenges

9:15 Site characterization for CCS and trapping mechanisms

09:40 Site monitoring technologies

10:05 CO₂ leakage: biological issues

10:30 Break

Session 7: CO₂ geological storage II - sites

Chairman: Steve Whittaker (Illinois State Geological Survey, USA)

10:45 The role of public in CCS projects

11:20 CO₂ geological storage in Decatur

11:50 The Otway project

12:20 lunch

ECO-BASE workshop on EOR

Chairman: Roman Berenblyum (IRIS, Norway)

13:50 tbd

15:00 Break

15:20 Working groups

18:00 End of technical activities

Friday, June 14th, 2019

Session 8: CCUS economics and legislation

Chairman: Matthias Finkenrath (Kempten University of Applied Science, Germany)

9:00 CCUS: commercial and pilot applications in the world

9:30 CO₂-free power generation: economic performance

09:50 CCUS: legal issues

10:10 Intellectual property and patents

10:30 Break

Session 9: International collaborations on CCUS

Chairman: Sergio Persoglia (CO₂GeoNet, France)

10:50 ENOS: Enabling CO₂ Storage in Europe

11:20 CO₂ Value Europe

11:50 ECCSEL: the European Carbon Dioxide Capture and Storage Laboratory Infrastructure

12:20 lunch

13:50 Presentations by the workgroups

15:10 Concluding remarks

15:30 Visit to the Serbariu Old Mine Museum

17:00 End of the School

CENTRO RICERCHE SOTACARBO
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