



CGS Europe Spring School on CO₂ Geological Storage



April 18–24, 2012 at Murighiol/Uzlina, Romania

Programme

Wednesday April 17th

Transfer to Murighiol

10.00 Arrival, registration at GeoEcoMar

13.00 Departure for Murighiol

19.00 Dinner and

20.00 “Get together”

Thursday April 18th

CCS in general and geological site characterisation

9.00 **Welcome** by Constantin Sava (hosting institution) and Niels Poulsen

Climate change and CCS as an international carbon abatement technology by Niels Poulsen

Exercise carbon abatement by Niels Poulsen / all teachers

Introduction to colloquium and exercises (Students to teams) by Niels Poulsen

Students’ colloquium (expectations) by Niels Poulsen and all teachers

Introduction to exercises by Niels Poulsen

Introduction to geology and geological storage of CO₂, CCS and EOR by Stefan Knopf & Alexandra Dudu

Site characterisation & reservoir modelling. Screening and capacity estimates by Stefan Knopf

Introduction to Exercise 1 by Stefan Knopf & Marie Gastine

Exercise 1, rest of day

13.00 Lunch

19.00 **Dinner**

Friday April 19th

Dynamic modelling

- 9.00 **Summarising the previous day.** Student report/presentation - one per group
- 9.30 **The whole CCS chain - Industrial scale CO₂ storage since 1996 – Experiences** by Niels Poulsen
- Seismic data, well data** by Niels Poulsen
- Dynamic modelling** by Marie Gastine
- Optimizing storage or EOR production** by Rob Arts
- Introduction to Exercise 2** by Alexandra Dudu, Marie Gastine, Niels Poulsen
- Exercise 2**, rest of day
- 13.00 **Lunch**
- 19.00 **Dinner**

Saturday April 20th

Risks and monitoring

- 9.00 **Summarising the previous day.** Student report/presentation - one per group
- 9.30 **Risk assessment and risk elements. Safety criteria** by Alexandra Dudu
- Monitoring methods** by Rob Arts
- Remote sensing methods** by Alexandra Dudu
- Status report on CCS and monitoring** by Alexandra Dudu/Constantin Sava
- Policy recommendations and road mapping** by Constantin Sava
- Introduction to Exercise** by Alexandra Dudu, Niels Poulsen, Rob Arts
- Exercise 3** – rest of day
- 13.00 **Lunch**
- 19.00 **Dinner**

Sunday April 21st

Legal framework and requirements

9.00 **Summarising the previous day.** Student report/presentation - one per group

9.30 **Storage Directive relating to the implementation of CCS** by Alexandra Dudu

Risk assessment: Legislation, regulations and guidelines by Niels Poulsen

Monitoring methods and EU Legislation by Rob Arts

Introduction to Exercise 4 by Marie Gastine

Exercise 4 – rest of day

13.00 **Lunch**

19.00 **Dinner**

Monday April 22nd

Day 5 non-technical aspects (economics acceptance and policy)

9.00 **Summarising the previous day.** Student report/presentation - one per group

9.30 **Public opinion and acceptance** by Alexandra Dudu

Leakage events. Case stories (Weyburn, Sleipner, Hungary, and natural leakage) by Niels Poulsen

Public awareness, NGOs, information strategies by Adam Wójcicki *et al.*

Greener energy technologies. CCS costs by Adam Wójcicki

CO₂ Storage Atlas by Niels Poulsen

Introduction to Exercise 5 by Niels Poulsen

Exercise 5 – rest of day

13.00: **Lunch**

19.00 **Dinner**

Tuesday April 23rd

Excursion

9.00 **Summarising the previous day.** Student report/presentation - one per group

- 9.30 **Romanian national program for CCS** by Constantin Sava
- 10.00 **Excursion** by Alexandra Dudu and Constantin Sava
- 15.00 **Exercise 1–5**
- 18.00 **Poster session.** All teachers
- 19.00 **Dinner**
- 20.00 **Students evening**

Wednesday April 24th

End of spring school

- 9.00 **Summarising and concluding the Spring School on CCS** - All students and teachers
- 10.00 **Departure for Bucharest**
- 16.00 **Arrival Bucharest**

End

Teachers

Adam Wójcicki, PGI-NRI

Alexandra Dudu, GeoEcoMar

Constantin Sava, GeoEcoMar

Marie Gastine, BRGM

Niels Poulsen, GEUS, CO2GeoNet

Rob Arts, TNO, CO2GeoNet

Stefan Knopf, BGR

Students

Name	Country	Institute	Position
Eva Marinovska	Bulgaria	Dept. Geology, Sofia University "St. Kliment Ohridski"	M.Sc student on Geology, Paleontology & Fossil fuels
Cecilia Aarnio	Finland	Åbo Akademi University	Msc-student
Nicklas Nordbäck	Finland	Geological Survey of Finland (GTK)	Geologist
Sonja Sjöblom	Finland	Åbo Akademi University	PhD-student
Gaurav Tomar	France (India)	Laboratoire de Géosciences Marines Institut de Physique du Globe de Paris	PhD-student
Zsuzsanna Szabó	Hungary	Environmental Physics Department, Centre for Energy Research of the Hungarian Academy of Sciences	Young Scientist position
Krzysztof Polański	Poland	AGH University of Science and Technology in Cracow. Natural Gas Department	Research Assistant
Tomasz Włodek	Poland	AGH University of Science and Technology Drilling Oil and Gas Faculty	Research Assistant
Gabriel Iordache	Romania	GeoEcoMar	Research assistant
Marius Tilita	Romania	GeoEcoMar	Scientist
Michal Jankulár	Slovakia	State Geological Institute of Dionýz Štúr	Research Scientist
Slavomír Mikita	Slovakia	State Geological Institute of Dionýz Štúr	Research Scientist
Amanda Metcalf Amián	Spain	Fundación Ciudad de la Energía, CIUDEN	PhD-student
Ruxandra Catalina Nita	Spain	IGME	PhD-student
Daniel Sopher	Sweden	Uppsala University	PhD-student
Farzad Basirat	Sweden	Department of Earth Science Uppsala University	PhD-student
Fei Huang	Sweden	University of Uppsala	PhD-student
Fengjiao Zhang	Sweden	University of Uppsala	PhD-student
Monika Ivandic	Sweden	University of Uppsala	Post doc
Sanem Elidemir	Turkey	METU	Research assistant
Rami Eid	UK / Australia	University of Edinburgh	PhD-student