

Winter 2010/2011



Centre for Innovation in Carbon Capture and Storage (CICCS)

Inspiring Innovation...for a Cleaner Future

Welcome to our 2010 Winter CICCS Newsletter!

Many things have happened since our last newsletter. 2010 was indeed a very exciting year for CICCS. Please, read the newsletter to find out more or visit our webpage <http://www.nottingham.ac.uk/ciccs> if you want to find out more about our activities!

We want to take this opportunity to send you all our best greetings for the Holiday Season and the New Year!

First of all we are proud to announce the National Centre for Carbon Capture and Storage (NCCCS). This collaborative joint venture between the University of Nottingham and the British Geological Survey, aims to become a key global player in CCS research and training, developing future collaborations with other academic institutions and business partners.

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The futuristic venue of the Shanghai 2010 World Expo

The NCCCS organized a one day stakeholder conference for its international launch during the Shanghai 2010 World Expo. NCCCS also held a one day CCS course at the Shanghai Expo. Researchers from the centre lectured on topics in CCS including capture, transport, storage, monitoring and implementation. NCCCS will run more short courses in CCS throughout 2011 both in the UK and in China. Details will be posted on the NCCCS website.

For more information about the NCCCS and to stay update with its activity please follow this link: <http://ncccs.org.uk/>

Prof. Mercedes Maroto-Valer's Inaugural Lecture

It was a very busy year for our director Prof. Mercedes Maroto-Valer. In April she had her formal Inaugural Lecture focused on climate change and CCS as a practical solution (not just hot air!). In July she edited a two-volume book set on CCS technology "Developments & Innovation in CCS Technology". As usual she participated in several conferences and was one of the keynote-speakers at British Geological Survey Conference on Climate Change hosted at the BGS headquarters in Keyworth in June. She was also interviewed by BBC Radio4 for an issue of "Costing the Earth" featuring Carbon Capture and Storage.

CICCS attended the GHGT-10 in Amsterdam

The CICCS team was present at the GHGT-10 in Amsterdam with 7 delegates presenting 6 posters and one oral presentation. The CICCS papers covered different CCS topics, including novel materials for capture, geological storage (experimental and simulation studies of injecting CO₂-SO₂ gas mixtures, and host rock-buffer solution interactions), monitoring techniques, environmental impacts and mineralisation. The event was a great success for the CICCS delegates, who were able to promote their current research and develop new and exciting collaborations. The CICCS team was the largest representation of a UK University at the GHGT-10!



The CICCS team in Amsterdam for the 10th Greenhouse Gases Technology Conference

A great experience

Dr Sarah Mackintosh was selected to participate in a unique Parliamentary pairing scheme organised by the UK's Government Office for Science and The Royal Society. She spent four days in Westminster learning more about how science policy is formed as well as understanding the working lives of MPs and civil servants as part of the MP-Scientist pairing scheme. She was paired with Alasdair Grainger from the Department of Energy and Climate Change. She also spent two months in Taiwan at the National Taiwan University as part of a Royal Society project in CO₂ photocatalytic reduction.



Dr. Sarah Mackintosh at the Houses of Parliament

New additions to the CICCS team:

Aimaro Sanna joins us as Research Associate on a project led by the Energy Technology Institute (ETI) with the aim to evaluate the technical and economical feasibility of carbon capture and storage by mineralisation (CCSM).

Manuela Rallo joins the team as Research Associate to strengthen our programmes in clean fossil energy, and particularly in trace metal behaviour and control as a result of implementation of carbon dioxide capture technologies.

Farewells

We are sad to see leaving two members of our team. We wish them both good luck!

Dr Mark Kennedy has moved from academia to work with Johnson Matthey after spending three years with us managing a EU project.

Dr. Mara Olivares-Marin is returning to her sunny Spain after two years working on CO₂ sorbents and an excellent publication record. We hope to see her soon again!

Japan!

Dr. Sarah Mackintosh and Dr. Giorgio Caramanna were invited to participate in the workshop hosted in Tokyo by the British Embassy for the development of UK-Japan collaborations on CCS. The workshop was attended by UK and Japan representatives of different research institutions, business companies and government agencies. They did presentations covering work on monitoring techniques for potential CO₂ leakage from a sub-seabed storage site using the natural analogue Panarea (Aeolian Islands – Italy), the pH effect of a typical host rock and buffer solution on CO₂ sequestration in synthetic brines, and mineralogical effects of injecting CO₂ and SO₂ gas mixtures.



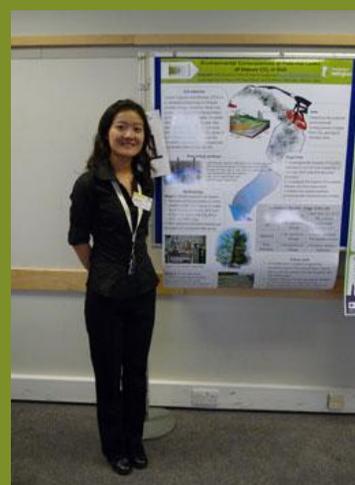
Dr. Sarah Mackintosh at RITE during the visit in Japan

Diving for science

Dr. Giorgio Caramanna was busy participating in conferences and workshops where he presented results and new projects on the study of underwater natural analogues for the study of the effects of CO₂ on the marine environment. He had four papers published in the International Journal of the Society for Underwater Technology about the use of scuba diving as scientific tool. He was also interviewed by Tom Heap of BBC Radio4 for an issue of “Costing the Earth” featuring Carbon Capture and Storage. The journalist was particularly interested in the noise of the underwater bubbles of CO₂ that was audible in a video-clip of Giorgio’s research. Tom was not the only “captured” by the bubbles one because collaboration on acoustic monitoring of CO₂ is developing with the University of Rome “Sapienza” and the Italian Research Council CNR and with other researchers of the Faculty of Engineering of the University of Nottingham.

She wins again!

A real “talent” for posters is our very own Miss. Yang Wei. She presented posters about her study on the effects of CO₂ on soil in different conferences and workshop and was also the winner of “Sparks” poster competition, out of more than 100 students from all over the world, during the annual UKERC Summer School.



Miss Yang Wei with her poster at Sparks competition

Student Projects

We want to congratulate two of our PhD students who graduated this year: **Dr Susana Garcia** and **Dr Junru Li**. We wish them all the best for their future careers!

Four PhD students have joined CICCS this year:

Olajumoke Elizabeth Ajao is working on CO₂ capture and in particular on the development of new sorbent technologies.

Ili Izyan Syazwani Ramli is involved in a project to use waste materials to develop low-cost CO₂ sorbents.

Marco Dri is working on mineral carbonation using industrial wastes in a project funded by Caterpillar.

Oluwafunmil Ola is continuing her MSc studies with us in the area of photoconversion of CO₂ into chemicals and fuels.

New collaboration

CICCS formalized a new collaboration with Caterpillar UK Engines Company Limited. The project, led by Professor Mercedes Maroto-Valer, in collaboration with Dr. Matthew Hall and Dr. Mark Gillot from the University of Nottingham and Dr. Anton Zimmerman from Caterpillar, will study the use of waste materials as mineral input for CO₂ capture and storage by mineral carbonation (CCSM).

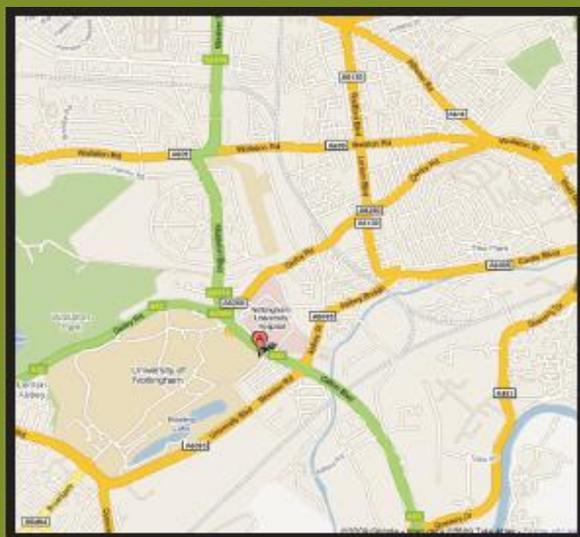
Swimming for the cure!

Last but certainly not least, this year the “Italian family” of CICCS supported the Aspire Channel Swim for people with spinal cord injuries. They swam, as a team, more than twice the length of the English Channel in the swimming pool of the University of Nottingham.

We are very proud of them!



Marco, Aimaro, Laura, Giorgio and Manuela ready to swim the Channel!



CICCS is based at the University of Nottingham, University Park Campus, Coates Building, just off of the A52 .

Contact us

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For further information about CICCS and our latest news and events please visit www.nottingham.ac.uk/ciccs