UNIVERSITY OF Southampton

PPP Information Day Brussels

Expertise related to SPIRE

C Styles representing the Clean Carbon Research Group at UoS
October 2015
c.styles@soton.ac.uk

UoS in European Framework Projects

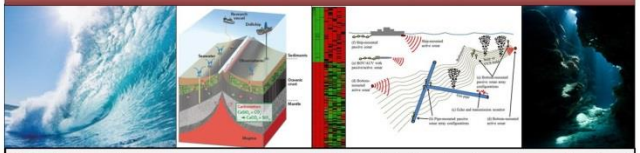
- Ranked as one of the top 15 research-intensive universities in the UK and in the top 100 of the world.
- Partner/Coordinator on ~250 FP7 projects.
- The Engineering Faculty was a Partner/Coordinator in 84 FP7 projects.
- Over 50% of our research is performed in collaboration with industry.
- Ranked 17th of all HEIs for participation in EU projects.
- Dedicated H2020 Office.
- Can act as bid manager and/or act as project coordinator.

Clean Carbon Research Group

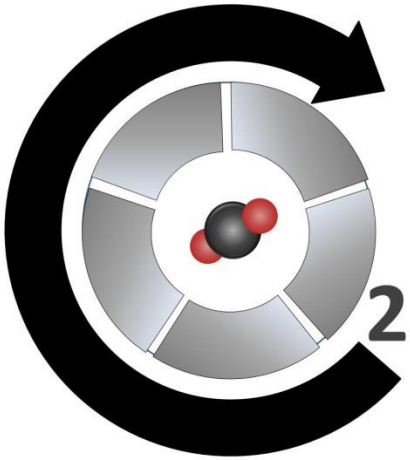
REDUCTION

Addressing major scientific and technological challenges in emerging energy technologies, efficiency and sustainability

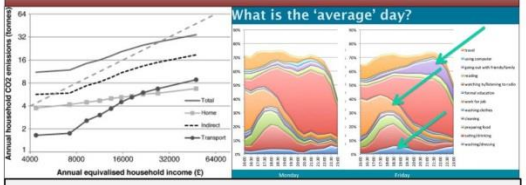
SEQUESTRATION



World-leading research into various biological and geological sequestration options and natural cycles



BEHAVIOUR

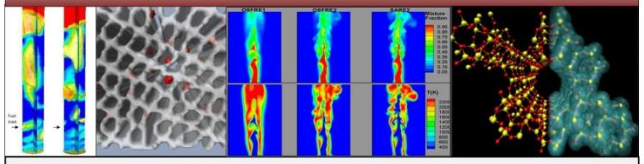


Exploring the political, policy, economical and social context of carbon reduction

CONSEQUENCE

Leading research into all aspects of human impact, adaptation and mitigation to climate change

CAPTURE



Cutting-edge research to enhance the performance of carbon capture systems; including pre-, post-, and oxy-fuel capture and CO_2 conversion into renewable fuels

Topics of Interest

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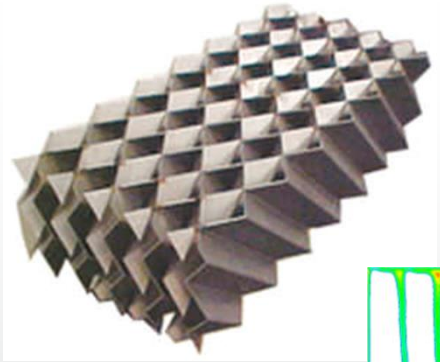
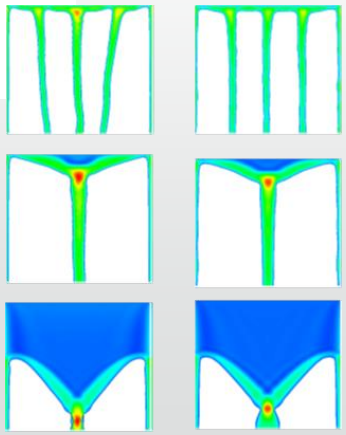
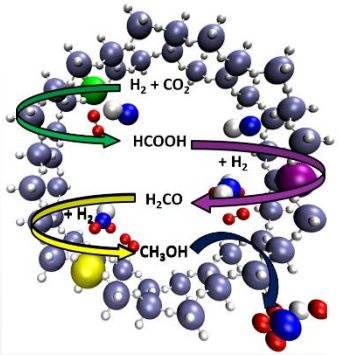
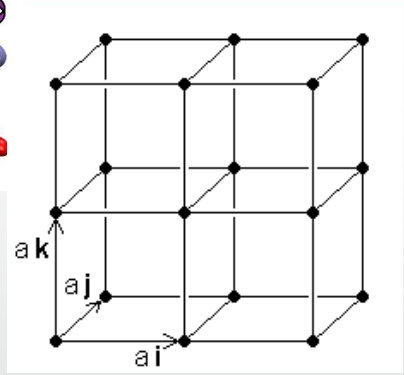
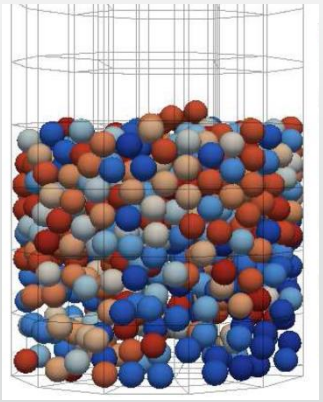
- SPIRE 08-2017 CO2 Utilisation to produce high added value chemicals.
- SPIRE 05-2016 Potential use of CO2 and non-conventional fossil natural resources in Europe as feedstock for the process industry.











Our Idea

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- State-of-the-art catalytic technology capable of recycling CO_2 directly into liquid synthetic fuels at the cutting edge of carbon capture and utilisation (CCU) research.
- Developing enhanced catalytic surfaces to upcycle CO_2 in a scalable and cost-effective solar-powered reactor design.
- Draw on innovative experimental and theoretical expertise to enhance catalytic processes at various scales.
- Combining our extensive knowhow in heterogeneous catalysis, optoelectronic capabilities, computational design and optimisation with world-leading reactor design capabilities.
- Propel the idea from the fundamentals right through to lab-scale concept demonstration and beyond.

Expertise / Partners sought

- Contribution to the reactor design and demonstrative prototype operating within a laboratory environment.
- Expertise in solar panel and solar thermal CSP technology, for potential integration of our catalytic converter technology using existing CSP infrastructure.
- Somewhere that has local CO2 sources.
- LCA experts.
- Companies specialising in various scaffolds for chemical conversion processes, i.e., metal organic frameworks (MOFS), zeolites, structured packing, membrane technologies, etc.
- Chemical materials companies.