

**Thursday 12<sup>th</sup> November: 3-4pm**

Name	Institute	Poster Title	Abstract
Phebe Bonilla Prado	University of Sheffield	CO <sub>2</sub> capture with adsorbents: current pilot projects	CO <sub>2</sub> capture using adsorbents is a promising alternative to absorption with solvents. Expected advantages are a lower energy requirement and operational cost. However, after surveying the CO <sub>2</sub> Re database from the Global Carbon Capture and Storage Institute (GCCSI) and the CCS projects database of the Department of Energy (DOE) in the United States, only one large-scale unit operating with adsorption was found. In this work, we analyse the current situation of adsorption implementation for CCS and propose a technology readiness level (TRL) based on the characteristics of the existing project.
Catherine Spurin	Imperial College London	Real-time imaging reveals distinct pore scale dynamics during transient and equilibrium subsurface multiphase flow	We use synchrotron X-ray imaging to quantify the change in flow dynamics as the system transitions to steady-state. We observed distinct dynamics during transient flow which would suggest that transient flow should be modelled with separate parameters. We quantify the timescales for steady-state to be established for different capillary numbers and viscosity ratios.
Yongliang (Harry) Yan	Cranfield University	Techno-economic analysis of low-carbon hydrogen production through sorption enhanced steam methane reforming (SE-SMR) processes	Hydrogen is an attractive energy carrier that will play a key role in future global energy transitions. This work investigates the techno-economic performance of six different sorption enhanced steam methane reforming (SE-SMR) configurations integrated with an indirectly natural gas or biomass-fired calciner, oxy-fuel combustion and chemical-looping combustion for large-scale blue and carbon-negative hydrogen production. The techno-economic performance of the proposed cases were evaluated by their net efficiency, CO <sub>2</sub> capture efficiency, levelised cost of hydrogen (LCOH), and costs of CO <sub>2</sub> avoided and removal.