Research outputs

Towards low-cost and sustainable activated carbon production: influence of microwave activation time on yield and CO2 uptake of PET-derived adsorbents

Household Mixed Plastic Waste Derived Adsorbents for CO2 Capture: A Feasibility Study

Greener carbon capture using microwave heating for the development of cellulose-based adsorbents

Activated-Carbon-Doped Non-Solvent-Induced Phase-Inversion Membranes: A Comprehensive Study on Synthesis, Characterisation, and Performance Evaluation

Effect of feed concentration and residence time on anaerobic fermentation in CSTR and SBR to produce short-chain organic acids

Glucose isomerisation into fructose over alkali/alkaline-earth metal-supported NaY zeolites

Transfer hydrogenation of carbon dioxide with bio-derived glycerol over zeolite-based catalysts

Sustainable microcrystalline cellulose-based activated carbons for a greener carbon capture at post-combustion conditions

Production, activation and CO2 uptake capacity of a carbonaceous microporous material from palm oil residues

Microwave pre-treatment of model food waste to produce short chain organic acids and ethanol via anaerobic fermentation

Microwave Research at the School of Engineering University of Aberdeen

Assessment of an integrated adsorption-regenerative catalytic oxidation process for the harnessing of lean methane emissions

A systematic analysis of the dynamics of microwave- and conventionally-assisted swing adsorption on zeolite 13X and an activated carbon under post-combustion carbon capture conditions
Yassin, M. M., Biti, S., Afzal, W. & Fernández Martin, C., 1 Dec 2021, In: Journal of Environmental Chemical Engineering. 9, 6, 14 p., 106835.
Effects of the heating source on the regeneration performance of different adsorbents under post-combustion carbon capture cyclic operations: A comparative analysis

Cellulose-based activated carbon for post-combustion CO2 Capture

Anaerobic fermentation for the production of short chain organic acids: product concentration, yield and productivity in batch experiments at high feed concentration

A comparative analysis of microwave-assisted regeneration against conventional regeneration for post-combustion carbon capture
Yassin, M., Biti, S., Afzal, W. & Fernandez Martin, C., 16 Sept 2021, p. 2. 1 p.

Acidogenic fermentation of model food waste for the production of added-value chemicals: effect of substrate concentration and residence time

Molecular Dynamics Simulation of the Interactions between Carbon Dioxide and a Natural-Based Carbonaceous Microporous Material

Effect of substrate concentration and retention time on the anaerobic digestion of food waste for the production of valuable chemicals

Molecular dynamics simulation of the interactions between carbon dioxide and a natural-based carbonaceous microporous material

Product Concentration, Yield and Productivity in Anaerobic Digestion to Produce Short Chain Organic Acids: A Critical Analysis of Literature Data

Modelling & characterisation of sustainable adsorbents for CO2 capture

Effect of substrate concentration and retention time on the anaerobic fermentation of food waste

Dielectric properties assessment during dynamic microwave-assisted carbon capture cyclic operations

Microwave-assisted regeneration of solid adsorbents for CO2 capture in post-combustion processes
Anaerobic digestion of food waste for the production of chemicals

Microwave swing regeneration of aqueous monoethanolamine for post-combustion CO2 capture

Dynamic assessment of dielectric properties of adsorbents during microwave-assisted carbon capture cyclic operations

Wet impregnation of a commercial low cost silica using DETA for a fast post-combustion CO2 capture process

Intensification of CO2 capture processes using microwave heating

Recycling of household plastics. A report on recycling technologies for MRO’s residues

Recycling solutions for Emtelle’s residues’
Emtelle UK Ltd. research collaboration, 2 Feb 2016, 39 p.

CO2 adsorption using TiO2 composite polymeric membranes: A kinetic study

Dynamic cyclic performance of phenol-formaldehyde resin derived carbons for pre-combustion CO2 capture: An experimental study

Precombustion CO2 capture by means of phenol–formaldehyde resin-derived carbons: from equilibrium to dynamic conditions

Doped phenol-formaldehyde resins as precursors for precombustion CO2 capture adsorbents

Study of the CO2 capture performance of two activated carbons in a bench scale PSA system

Breakthrough adsorption study of a commercial activated carbon for pre-combustion CO2 capture

Microporous phenol-formaldehyde resin-based adsorbents for pre-combustion CO2 capture

Hypercrosslinked organic polymer networks as potential adsorbents for pre-combustion CO2 capture
Doped phenol-formaldehyde resins as precursors for precombustion CO2 capture adsorbents

Dynamic assessment of the equilibrium CO2 adsorption capacity of a commercial activated carbon for pre-combustion capture

Synthesis of hypercrosslinked organic polymers for pre-combustion carbon capture

On the limits of CO2 capture capacity of carbons

Developing almond shell-derived activated carbons as CO2 adsorbents

Development of carbon-based adsorbents from phenol-formaldehyde resins for pre-combustion CO2 capture

Regeneration strategies of carbon capture adsorbents in cyclic operation

Regeneration strategies of solid sorbents for CO2 capture cyclic processes

Development of low-cost biomass-based adsorbents for postcombustion CO2 capture

Different approaches for the development of low-cost CO2 adsorbents

Ammonia-modified biomass-based carbons as CO2 Adsorbents

Carbon adsorbents for post-combustion CO2 capture

Flue-gas CO2 capture on activated carbons produced from biomass wastes
Microporous adsorbents from phenol formaldehyde resins for precombustion CO2 capture

Microporous resin adsorbents for pre-combustion CO2 capture

Pressurised gasification of coal and biomass for the production of H2-rich gas

Relationship between textural properties and CO2 capture capacity of phenolic resin-derived activated carbons

Production of carbon adsorbents for pre-combustion CO2 capture

Activities
Carbon (Journal)
Claudia Fernandez Martin (Peer Review)
25 Mar 2024

European Journal of Microwave Energy (Journal)
Claudia Fernandez Martin (Peer Review)
29 Jan 2024

Transfer hydrogenation of carbon dioxide with bio-derived glycerol over zeolite-based catalysts
Nicola Vivienne Rouse (Speaker), Claudia Fernandez Martin (Author), Alan McCue (Author) & Ines Biscaya Semedo Pereira da Graca (Author)
Sept 2023

Energies (Journal)
Claudia Fernandez Martin (Peer Review)
1 Sept 2022 → …

Association for Microwave Power in Europe for Research and Education (Ampere) (External organisation)
Claudia Fernandez Martin (Member)
2021 → …

Processes (Journal)
Claudia Fernandez Martin (Peer Review)
Oct 2020 → Jul 2021

CCS Deputy Champion for the University of Aberdeen.
Claudia Fernandez Martin (Contributor)
2020 → …

Environment and Biodiversity (Organisational unit)
Claudia Fernandez Martin (Member)
2020 → …
Centre for Energy Transition (Organisational unit)
Claudia Fernandez Martin (Member)
2019 → …

Supervision of Rutherford Fellow: Dr Ghulam Hussain
Claudia Fernandez Martin (Supervisor)
Jun 2018 → Mar 2019

Supervision of Rutherford Fellow: Dr Heriberto Diaz-Velazquez
Claudia Fernandez Martin (Supervisor)
Jun 2018 → Mar 2019

Supervision of Rutherford Fellow: Dr Yu Liu
Claudia Fernandez Martin (Supervisor)
Jun 2018 → Mar 2019

Chemical Engineering Journal (Journal)
Claudia Fernandez Martin (Peer Review)
May 2018

Supervision of Rutherford Fellow: Dr Osiry Hernandez-Silva
Claudia Fernandez Martin (Supervisor)
May 2018 → Feb 2019

Polytechnic University of Valencia
Claudia Fernandez Martin (Visiting Lecturer) & Jose M. Catala-Civera (Collaborator)
1 May 2017 → 15 Jul 2017

The Promising Application of Microwaves in Carbon Capture and Storage
Claudia Fernandez Martin (Author)
10 Oct 2016

Energies (Journal)
Claudia Fernandez Martin (Peer Review)
2016 → 2018

Chemical Engineering and Materials Research Group (Organisational unit)
Claudia Fernandez Martin (Member)
1 Jan 2015 → Feb 2019

UK Carbon Capture and Storage Research Centre (UKCCSRC) (External organisation)
Claudia Fernandez Martin (Member)
1 Jan 2015

Scottish Carbon Capture and Storage (SCCS) (External organisation)
Claudia Fernandez Martin (Member)
Jan 2013

University of South Carolina
Claudia Fernandez Martin (Visiting Researcher), Armin Ebner (Collaborator) & James Ritter (Collaborator)
1 Sept 2010 → 23 Dec 2010
University of Liverpool
Claudia Fernandez Martin (Visiting Researcher) & Andrew I Cooper (Collaborator)
1 Jun 2009 → 30 Jul 2009