

Suzanne Ferguson

Carbon Capture Technical Lead & Principal Process Engineer

Date of Birth:
22nd May 1980

Contact Details:

2, Lyle House,
Maidenhatch,
Pangbourne
Berkshire,
RG8 8HL,
United Kingdom
+447712 173894
saisuziej@yahoo.co.uk

Nationality:

British

Status:

Married

Professional Status:

Chartered Engineer
Member of the Institute of
Chemical Engineers

University Qualifications:

- MEng (Hons) in Chemical Engineering from the University of Surrey
- Associate of the University of Surrey

Pre-University Qualifications:

- A Level Mathematics (A), Physics (B), Environmental Science (A) from Totton College
- 10 GCSEs (A to C) from The Romsey School

Academic Awards:

- The Worshipful Company of Engineers, Cadzow Smith Engineering Award 2004
- The Salter's Institute, Salters' Graduate Prize 2004
- University of Surrey, T K Ross Prize 2004 & Helyn M Rose Memorial Prize 2003

Suzanne is a Principal Process Engineer and the Carbon Capture Technical Lead in Foster Wheeler's Business Solutions Group, where she is currently responsible for business development and the technical quality of study work produced in the Carbon Capture business lines. She has worked on a range of studies, pre-FEED, FEED & EPC projects & is an experienced user of HYSYS, Gatecycle & ProMAX modelling software.

In 2013 Suzanne has been the Process Lead on extensive study work for the Energy Technologies Institute and a confidential client and in 2012 Suzanne was a Lead Process Engineer on the Don Valley Power Project FEED. With ten years of process design experience, she has worked on or lead Study, Pre-FEED, FEED & EPC phase projects in the Carbon Capture, Power Generation, Hydrogen Production, Refining, LNG & GTL business lines.

In 2008, Suzanne completed a six-month training assignment to the Foster Wheeler Italiana Power Division in Milan where she worked on power island design for the Hydrogen Power Abu Dhabi Project. In 2005 she completed a 5 month assignment to Kuala Lumpur where she worked closely with Shell on the Pre-FEED for the Pluto LNG Project. Suzanne also has experience in dynamic simulation, process safety & thermal design of fired heaters.

University Education

2003-2004 *Masters' Year*

Multi-disciplinary design project; "Bioethanol production for the UK automotive Industry", Research project (pneumatic conveying and granular flow), computational fluid dynamics, process and energy integration, processing particulate solids.

2002-2003 *Final Year*

Process Design Project (Vinyl Chloride Monomer Production), Equipment Design Project (Fluidised Bed Catalytic Reactor), Complex Fluids, Advanced Mass Transfer, Process Dynamics and Control, Chemical Reaction Engineering, Separation Processes, Biochemical Engineering, Project and Engineering Management.

2001-2002 *Accredited Industrial Training Year*
(See Other Experience Section)

1999-2001 *First and Second Years*

Mathematics, Computing, Engineering Materials, Fluid Mechanics, Sustainable Development, Chemistry, Mass and Energy Balances, Engineering Design, Process Control, Separation Processes, Mass Transfer, Chemical Thermodynamics, Engineering Laboratories.

Experience With Foster Wheeler

2014-Present Principal Process Engineer

Shell Iraq Petroleum Limited – Iraq Ministry of Oil (Southern Oil Company)

Debottlenecking and process design support for various site upgrading and redevelopment projects at Majnoon oil field in Southern Iraq.

2010-Present Carbon Capture Technical Lead

Business Solutions Group

Responsible for business development and the technical quality of the study work produced in the Carbon Capture business lines. Published several papers on Carbon Capture technologies.

2013 *ETI - Hydrogen Storage & Flexible Turbine Systems*

Leading the process execution of a study investigating power generation systems involving a decarbonised syngas generation plant with carbon capture, separate CCGT power island & intermediate syngas storage to facilitate flexibility of power delivery.

2012 *Lead Process Engineer*

2Co Energy (Yorkshire) Ltd - Don Valley Power Project (IGCC)

Leading execution of FEED studies, such as Heat Integration and Raw Water Reduction. Checking and over-seeing the integration of flow schemes, all simulations and the overall plant heat and material balance.

- 2010-12** *Carbon Capture and Storage Project – CCP Scenarios and CCS Handbook*
Lead Process Engineer
Process design to develop carbon capture solutions for refinery fired heaters, FCC and steam methane reformer, CCGT with and without CCS and a natural gas steam boiler for tar sands application.
- 2009-10** *E.ON UK – Kingsnorth Carbon Capture Project*
Lead Process Engineer
Pre-FEED and FEED design for integration of the carbon capture unit technology and CO₂ compressors with the new coal power station.
- 2008** *Confidential Client – China Coal to Products Study*
Study Manager & Process Engineer
Design, performance and cost evaluation of plant configurations for the production of methanol from coal across a range of carbon abatement levels.
- 2008** *Confidential Client – Cost of CO₂ Capture Study*
Study Manager & Process Engineer
High level design and cost evaluation of carbon capture schemes for a range of process and power sources to illustrate their comparative costs.
- 2008** *Hydrogen Energy International Ltd - Hydrogen Power Abu Dhabi Project*
Process Engineer
Reading Execution - FEED deliverables including interconnecting P&IDs, Power Island and Reading to Milan interface support.
Milan Execution - Power Island Pre-FEED grid compliance and cold end studies, alternative fuel and steam turbine bypass simulations, FEED deliverables.
- 2007** *Confidential Client - Advanced Post-Combustion CO₂ Capture Process*
Process Engineer
Process design evaluation & economic analysis of a novel technology for coal post combustion capture.
- 2007** *Confidential Client - Advanced Pre-Combustion CO₂ Capture Technology Study*
Process Engineer
Process design, technology review and process integration of a novel technology.
- 2007** *Sasol GTL Group – AGTL Feasibility Study*
Process Engineer
Extensive integration of steam, power and water systems with the auto-thermal reforming and F-T units for a new GTL plant in Australia.
- 2007** *Process Safety Group*
Process Safety Engineer
HAZOP report compilation, PHAST relief dispersion modelling, building risk assessments and testing new software for fire main hydraulic simulation.
- 2006/7** *Woodside Energy LTD – Pluto LNG Development –*
Process Engineer (Reading Execution)
FEED Design for the Pluto LNG facility, focusing on the liquefaction unit. Production of process drawings, line list, hydraulics, equipment datasheets.

- 2006** *Fired Heater Division*
Thermal Design Engineer
- 2005/6** *Woodside Energy LTD – Pluto LNG Development –*
Process Engineer (Kuala Lumpur Execution)
- 2005** *Woodside Energy LTD – NWSV Phase V*
Process Control Engineer – Dynamic Simulation
- 2005** *Bangchak Petroleum Public Company LTD*
Process Engineer
- 2004/5** *Rabigh Joint Venture*
Process Engineer

Other Experience

- 2004** *University of Surrey – Guildford, UK*
Research Engineer
Slug flow in pneumatic conveying from a fluidised bed.
- 2003** *AstraZeneca – Macclesfield, UK*
Chemical Engineer
Continuous tubular reactor design.
- 2002** *Sucromiles (Tate and Lyle), Cali, Colombia*
Chemical Engineer
Specification of new pressure relief systems.
- 2001/2** *BP - Coryton Refinery, UK*
Chemical Engineer
Kerosene Merox unit optimisation & LP refinement.

Recent Publications

- 2013** "High Efficiency Integrated Gasification Combined Cycle with Carbon Capture via technology advancements and improved heat integration", S. Ferguson, G. Skinner & J. Schieke (Foster Wheeler) & K-C Lee & Eva van Dorst (Shell Global Solutions), GHGT-11, November 2012, Kyoto.
- 2012** "High Efficiency Integrated Gasification Combined Cycle with Carbon Capture via technology advancements & improved heat integration", S Ferguson & Co., IChemE Gasification Conference, May 2012, Cagliari.
- 2012** "Carbon Capture Options for Refiners", S Ferguson & M Stockle, PTQ, January 2012.
- 2010** "Opportunities for Efficiency Improvements in Power Plants with Carbon Capture", S Ferguson, T Bullen, G Skinner, Power-Gen Europe, June 2010, Amsterdam
- 2010** "Planning for Carbon Capture" S Ferguson, Petroleum Technology Quarterly, April 2010.
- 2010** "Carbon Capture Options for LNG Liquefaction", M Coulson, S Ferguson, T Bullen, LNG16, Algeria, April 2010.
- 2010** "When Does Carbon Capture Make Sense?" S.Ferguson, Hydrocarbon Processing, January 2010.