

## Dr Regina Santos BSc, MSc, PhD, CEng, FICChemE

Senior Lecturer

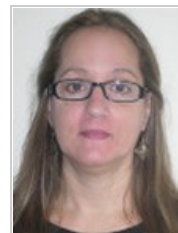
[School of Chemical Engineering \(/schools/chemical-engineering/index.aspx\)](/schools/chemical-engineering/index.aspx)

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### About

Dr Regina Santos is a senior lecturer working within the School of Chemical Engineering. Originally joining the University of Birmingham as a student in 1982, she subsequently gained an MSc and PhD in Chemical Engineering.

She has previously worked as a process engineer FOR the National Institute of Technology in Rio de Janeiro. She gained a BSc in Chemical Engineering in 1979 from the Universidade Federal Fluminense, Rio de Janeiro, Brazil.

### Research

#### RESEARCH INTERESTS

- Extraction and Fractionation of Natural Products / Biomass using Supercritical CO<sub>2</sub> and Sub-critical water hydrolysis
- Particle Production, Processing and Coating using Supercritical Fluids (SCF)
- Polymer Processing using SCF
- Innovative Synthesis and Processes in Compressed Carbon Dioxide
- Pattern Deposition using SCF
- Supercritical Water Oxidation and Wet Air Oxidation of organic compound in wastewaters with and without catalysts

#### RESEARCH ACTIVITY

- Sub-critical water mediate hydrolysis and fractionation of lignocellulosic biomass – Phytatec Ltd, EPSRC
- Novel extraction of waste yeast compounds and its use as active ingredients in health care products – Boots Plc
- Sequential extraction of monomers from spent yeast derived from cider production: a first step towards full utilisation and adding value – Phytatec Ltd
- Supply chain research applied to Clean Hydrogen Production from biomass using supercritical water – Advantage West Midlands (AWM) regional funds
- Contaminated land remediation technologies – The development of a novel process for the non-invasive in situ sampling and analysis of contaminants in soil – DTI Technology Programme with partnership with PJH Partnerships, Pera Innovations, Crowcon Ltd, Dando Drilling Ltd and Lankelma Ltd
- Catalytic free production of biodiesel in a continuous flow supercritical water reactor – Kuwait Government
- Enrichment and Purification of Phytonutrients from Palm Oil By-Products using Compressed Carbon Dioxide - Lodders Crocklaan B.V.
- Removal of Mass Transport Barriers in Plant Material using Supercritical Carbon Dioxide– Unilever R&D, Colworth
- Processing of bio-degradable polymers using supercritical CO<sub>2</sub> to produce novel implant materials – STREP – FP6 project in collaboration with the Universities of Lodz in Poland and Twente in the Netherlands, Smithers Rapra Ltd, Carubros in Spain, Trexel in Germany
- Study of properties and behaviour of polymeric materials used as drug excipients in SCCO<sub>2</sub> - GSK, Harlow
- Supercritical water oxidation (SCWO) for the removal of nitrogen- and halogen- containing pharmaceutical wastewater streams - GSK, Harlow
- Production and Coating of Drug Polymer Carriers by SCF technology (PGSS) - GSK, Harlow
- Catalytic Supercritical Water Oxidation (CSCWO) and Catalytic Wet air Oxidation (CWAO) for wastewater treatment – CONACYT Scholarship- Mexico Government
- Nanoparticle for the Future – ACORN Project under the IMPACT Faraday Partnership - EPSRC
- Innovative Synthesis and Processes in Compressed CO<sub>2</sub> – EPSRC, AstraZeneca and University of Cambridge
- Fixed Oil Seed Products from Novel Crops – EPSRC, BBSRC, Botanix, John K King & Sons, Croda Chemicals
- Extraction of cocoa products – Cadbury Trebor Bassett
- Particle production and coating of particles – Qinetiq
- Production of fine particles – Unilever Research, Port Sunlight
- Extraction of Intracellular Microbial Metabolites – BBSRC & SKB
- Extraction of herbs with SCF – European Project under the AIR3C



