Fully-funded PhD studentship opportunity at Sheffield University Management School

PhD Project: Waste recycling, resource efficiency and circular economy

Research Group: Advanced Resource Efficiency Centre (AREC)

The Advanced Resource Efficiency Centre (AREC) promotes collaboration between industry and academia, and provides a platform for access to policy makers in order to meet the challenge of promoting resource efficiency and sustainability across supply chains.

AREC supports the development of resource sustainable supply chains by proposing new ways of reducing risk for partners in overcoming the challenges of resource availability. Through AREC, Small & Medium sized Enterprises (SMEs) can join in collaboration with larger industrial partners and benefit from cutting edge academic research and skills. This provides the mechanism for achieving the aims of the UK Government and EU policy, in supporting an environment in which the 4.8 million UK-based SMEs can flourish with their supply chains in Europe and internationally.

Project Description

The United Nation Sustainable Development Goals (SDGs) identified 17 priority areas where the biggest environmental, social and economic challenges in the World need to be addressed. Major funding opportunities in the Global Challenge Research Fund calls for large scale, cross disciplinary and systems level approach in research to support delivery of SDGs with partners globally.

To help address some of the global challenges in the SDGs - such as SDG2 Zero Hunger (Food Security), SDG7 Affordable and Clean Energy, SDG12 Responsible Consumption and Production, SDG13 Climate Action – the Advanced Resource Efficiency Centre (AREC) is focusing on finding novel and integrated systems to manage transition of existing stakeholders’ supply chain (business, government, NGO and society) from a structure traditionally governed by rigid transactional process to a fluid, circular and closed loop process. The traditional process is not resilient and its exposure to externalities such as climate change risk, financial risk and geo-political risk often result in compromises. The risks are not only affecting the processes but also the critical infrastructure such as land, transport and energy systems, which underpin the flow and conversion of resources to products and services (forward and reverse). To achieve this, we need future supply chains that are resource efficient, whilst able to encourage sustainable and clean growth.

Based in Sheffield University Management School, AREC has identified a number of possible funded projects:
1. A new resilience model for future food supply chain: a triadic Life Cycle Assessment (LCA), de-risking and socio-economic scenario perspective (focus on Mekong region, China and Africa, industry case studies includes Nestle and Unilever)

2. A new circular economy model for supply chain archetypes with mixed waste (focus on Europe, multiple cross industry cases)

3. Sustainability of waste recycling (plastic, paper pulp and WEEE): is there a limit? (focus on global, industry cases include FMCG, food and beverage, electronic and electrical, IT)

4. Food-energy-water-material nexus: the role of multi-functionality for resource efficiency and environmental sustainability (focus on global, multiple cross industry cases)

5. Life Cycle Assessment in future construction (focus on global, cross over between digital and construction industry)

6. Sustainability of energy balanced systems: managing production (generation), storage and consumption including reuse (focus on UK and global, policy cases across region)

7. Social justice of energy efficiency and security (focus on China, India, Europe, USA)

8. Sustainability and new information governance models for future transport systems ownership and usership (focus on global, cases include Uber, MBike, Deliveroo, DD, Amazon)

9. New supply chain models for future multi-modal transport systems: Passenger and freight in Connected, Electric and Autonomous Vehicles (focus on global, involve companies from industry such as JLR and DHL)

10. Reforming competitiveness of green SMEs: voluntary, regulatory, market forces (focus on global, manufacturing and servitization)

Application Process:

Applicants should submit a 1000 word research proposal which directly addresses the theme and/or specific topic to which they are applying. The proposal should contain a brief background to the topic, which demonstrates knowledge of existing work in the field, and potential contributions to knowledge. It should also explain the proposed research methods and include a plan of the research, and a timeline. We are seeking applications from exceptional UK/EU/International students with an outstanding academic record (distinction/high merit or equivalent) as well as a proven record in research training. Scholarships are awarded on a competitive basis - applications are assessed on the basis of academic success and qualifications, experience, research background, a clear well-articulated research proposal, the potential impact of the research and a good match with supervisor/departmental expertise

Closing date for applications is 17.00 (UK time) on Friday 7th December 2018. Interviews will be held week commencing 7th January 2019.
Proposed Supervision Team:

The supervisory team may include two of the following academics: Prof Lenny Koh, Dr Andrea Genovesi, Dr Sonal Choudhary, Prof David Oglethorpe, Prof Andrew Simpson, Dr Erica Ballantyne, Dr Chantal Cantarelli, Dr Antonino Sgalambro, Dr Mike Simpson, Dr Rob Marchand, Dr Andrew Brint, Prof John Cullen, Prof Jonathan Linton, Dr Stuart Maguire, Prof Elaine Toms, Prof Panos Ketikidis. The selection of supervisors would depend on which project(s) is pursued and staff availability.

Funding Notes:

This scholarship is offered on a full-time basis for three years from 1st February 2019 subject to satisfactory progress. It will provide a tax free bursary of £14,777 and cover the University tuition fees for UK/EU/international students.