

JOB DESCRIPTION

Job Title:	Research and Consulting Engineer; Cellular Automata Modelling	Grade:	AC1
Department:	Faculty of Engineering & Science	Date of Job Evaluation:	July 2021
Role reports to:	Director, The Wolfson Centre for Bulk Solids Handling Technology		
Direct Reports			
Indirect Reports:	Consulting Engineers Head of the School of Engineering		
Other Key contacts:			
<p>This role profile is non-contractual and provided for guidance. It will be updated and amended from time to time in accordance with the changing needs of the University and the requirements of the job.</p>			

PURPOSE OF ROLE: To work within a team of professional engineers, providing commercial enterprise services to industry utilising the expertise base of The Wolfson Centre.

Customers of the Centre include most of the major companies in the chemical, food, power and construction product sectors. Services are provided through projects which run from one-day visits to several man-months of test and design work, together with undertaking some aspects of research activities and contributing to the delivery of undergraduate and postgraduate programmes in the School of Engineering.

KEY ACCOUNTABILITIES:

Team Specific:

1. To engage in research activity :
 - To develop the use of Cellular Automata methods for computational modelling of powder flow
 - The engineer will be expected to work with specialists in many technical fields at the Centre, to utilise their expertise as well as his own. Literature research must be undertaken occasionally, to assess the current state of technology in less commonly used technical areas.
 - Supervise student projects at both undergraduate and masters level
 - Participation in the production of research publications

2. To engage in enterprise activity:
 - Analysis of bulk handling systems and components for troubleshooting
 - Conceptual design of bulk handling systems and equipment including hoppers and silos, pneumatic conveyors, control systems and other items, both for new installations and modifications to existing plant
 - Writing of proposals for possible new projects, and reports on existing projects, will form a significant part of the work
 - Some first-contact sales work including writing of publicity articles, representing the Wolfson centre at trade shows and taking enquiries from clients
 - Liaison with clients will include visits to their premises to view plant and participate in meetings, telephone contact to report progress and discuss technical issues, and any

other forms of contact as may be required from day to day. It may be necessary at times to travel in the UK or abroad for periods of up to one week.

- Additional duties will be added as they are required in the course if the centre providing a developing range of enterprise activities to industry.

3. To liaise with clients and research consortia as required

Generic:

- provide effective communication of complex ideas in a range of academic and commercial situations
- support team members in research, teaching and learning situations
- assist in developing bids for research and consultancy activities

Managing Self:

Training (both formal and on the job) in relevant technical areas will be given where appropriate. The engineer will be expected to take responsibility for self-education and keeping up to date in appropriate technical areas.

The engineer will be expected to shadow existing consulting engineers at the Centre for an extended period whilst developing their technical and business expertise, following which they will be expected to take an increasing responsibility in running projects.

It is possible that following several years of experience in this general role, there may be an opportunity to pursue a personal research theme within the context of bulk solids handling technology.

Core Requirements

- Adhere to and promote the University's Equality and Diversity policies
- Ensure compliance with Health & Safety regulations
- Support and promote the University's Sustainability policies, including the Carbon Management Plan, and carry out duties in a resource efficient way, recognising the shared responsibility of minimising the university's negative environmental impacts wherever possible
- Commitment to self and colleague development.

KEY PERFORMANCE INDICATORS:

Delivery of departmental KPIs against the University's strategic plan.
Delivery of teaching and learning against university strategic plan KPIs.
Delivery of research output in line with University strategic plan KPIs.

KEY RELATIONSHIPS (Internal & External):

Work in an integrated way on research and enterprise projects, with other Wolfson staff members, external (industry and academic) project members, customers and research collaborators

Collaborate with technician staff and subcontractors in getting equipment procured, delivered, commissioned and developed.

Work with our key stakeholders to develop relationships with international industry, our feeder schools and the wider community.

PERSON SPECIFICATION

Essential

Experience

- In-depth experience of using Cellular Automata modelling methods
- Working knowledge of powder technology
- Experience of using digital instrumentation on solids handling systems

Skills

- High skill level in programming in Python or similar language
- Good hands-on skills for laboratory work
- Familiarity with data analysis software such as Labview, Matlab or similar
- Thoroughly familiar with MS Office including Excel, Word etc.
- Sound presentational skills
- Sound technical writing skills

Qualifications

- PhD in computer modelling of powder flow or equivalent experience

Personal Attributes

- Ability to work in a multi-disciplinary team environment
- Ability to work with minimum supervision
- Ability to manage own workload
- Willingness to travel

Desirable

Experience

- Project work with industrial customers
- Work in an industrial environment

Skills

- Basic workshop skills

Qualifications

- Membership of an appropriate professional body

Personal Attributes

- N/A