UNIVERSITY OF SURREY

Research Role Profile

Job Title:	Research Fellow (1A)

Responsible to:	Head of research group, or principal investigator

Responsible for:	Not applicable

Job Summary and Purpose:
To undertake research in accordance with the specified research project(s) under the supervision of the principal investigator.

Main Responsibilities/Activities
To undertake a range of research activities within a specified research area, assuming responsibility for specific areas of projects and making use of new research techniques and methods, in consultation with the research award holder or supervisor. This may include fieldwork, interviews, laboratory experimentation, critical evaluation and interpretation, computer-based data analysis and evaluation or library research. Using initiative and creativity to identify areas for research develop new research methods and extend the research portfolio. Analysing and interpreting results of own research. Write up results and prepare papers for submission to appropriate journals and conferences, and other outputs as required and/or appropriate. Attend appropriate conferences for the purpose of disseminating research results of personal development. The post holder may also contribute to writing bids for research grants and will contribute to collaborative decision making with colleagues in areas of research. Continually to update knowledge and develop skills, and translate knowledge of advances in the area into research activity. To plan and manage own research activity in collaboration with others. To carry out administrative tasks associated with specified research funding, for example risk assessment of research activities, organisation of project meetings and documentation. Implementation of procedures required to ensure accurate and timely formal reporting and financial control. To contribute to teaching in the Faculty by carrying out student supervision and/or demonstrating within the post holder's area of expertise and under the direct guidance of a member of departmental academic staff, as appropriate. The post holder may occasionally be required to supervise more junior research staff.

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Person Specification
The post holder must have: A doctoral degree in a relevant discipline (although individuals who have almost completed a doctoral degree may be appointed). Consideration may also be given to individuals who do not hold a doctoral degree but have required skills based on a number of years experience in specified / relevant fields. The post holder will have authority over some aspects of project work and must be capable of providing academic judgement, offering original and creative thoughts and be able to interpret and analyse results.

Relationships and Contacts
Direct responsibility to the principal investigator or academic supervisor. The post holder may be asked to serve on a relevant Faculty committee. There may be additional reporting and liaison responsibilities to external funding bodies or sponsors. The post holder may work on original research tasks with colleagues in other institutions.

Special Requirements
To be available to participate in fieldwork as required by the specified research project

All staff are expected to:

- Positively support equality of opportunity and equity of treatment to colleagues and students in accordance with the University of Surrey Equal Opportunities policy.
- Help maintain a safe working environment by:
  - Attending training in Health and Safety requirements as necessary, both on appointment and as changes in duties and techniques demand
  - Following local codes of safe working practices and the University of Surrey Health and Safety Policy
- Undertake such other duties within the scope of the post as may be requested by your Manager.

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Research Role Profile

Addendum to Role Profile

Job Title:	**Postdoctoral research fellows in mechanistic modelling of powder compaction**

Job Summary and Purpose

Funded by a global pharmaceutical company, we are recruiting a full-time postdoctoral research fellows to work on modelling of powder compaction in the School of Chemistry and Chemical Engineering at the University of Surrey. Powder compaction is a manufacturing process used widely for pharmaceutical, fine chemical, ceramic and powder metallurgical products. It is hence of pratical significance to develop mechanistic models that can predict the performance of complex formulated powders during compaction.

This is a 12-month position for a researcher who is keen to have some postdoctoral research experience while working on this industrially funded project. The key objectives are 1) to characterise material properties that can be used in numerical models to explore their compaction behaviour, and 2) to develop a numerical model using the finite element method (FEM) and to perform systematic computer modelling of compaction of the formulated powders.

Main Responsibilities/Activities

The research fellow is expected to develop a robust finite element model for powder compaction. This also involves experimental calibration of the model with formulated powders provided by the project partner. Specific activities may involve but not limited to

1) Determine model input parameters for the formulated powders, for which experiments will be carried out to measure the response of the powders at different compaction conditions.

2) Build a finite element model for tabletting processes using the input parameters determined experimentally, and validate the model using the experimental data.

3) Perform systematic numerical simulations of compaction behaviour and explore the roll compaction behaviour of the formulated powders.

4) Perform data analysis, wite technical report and papers, disseminate research outcome at national and international conferences.

Research Role Profile

Person Specification
The post holder must have a strong numerical background and hands-on experience in finite element modelling(E), a good track record in technical writing and scientific communication (E), and a good knowledge of powder compaction, tabletting and roll compaction (D). It is also expected that the PDRF has a high level of research ability and independence, and team-working skills to interact with other researchers and industrial partners (E).

Special Requirements
This project involves close collaborations with industrial partners, a good team work skill is also essential.

Relationships and Contacts
Direct responsibility to the principal investigator or academic supervisor. The post holder may be asked to serve on a relevant Faculty committee. There may be additional reporting and liaison responsibilities to external funding bodies or sponsors. The post holder will work on original research tasks with colleagues in other institutions.