Research Fellow (Chemical Engineer)

Who are we?

We are the University of Cambridge presence in Singapore called Cambridge CARES, sponsored by the NRF CREATE program CAM.CREATE. CARES also hosts industry-funded and other agencies funded projects. Our team is comprised of world-class scientists and engineers working in a vibrant, fast-paced environment with great opportunities for knowledge and skills development.

CARES is a partner in the Pharma Innovation Programme Singapore (PIPS). The core partners of PIPS are: The Agency for Science, Technology and Research (A*Star), The National University of Singapore (NUS), the Nanyang Technological University (NTU), the Singapore Institute of Technology (SIT), and pharma companies GlaxoSmithKline (GSK), MSD International GmbH (Singapore branch), Pfizer Asia Pacific, as well as Syngenta.

Within PIPS, CARES is leading a project "**From Digital Twins to Real Time AI-supported Plant Operation**", which aims to develop an ontological representation of physical process models relevant to manufacture of pharmaceuticals, and link these models with a Knowledge Graph. This is a large project involving close collaboration with pharmaceutical manufacturing companies, the group of Prof. Alexei LAPKIN in CARES and in Cambridge, the group of Prof. Markus KRAFT in CARES and the group of Dr Lianlian JIANG in I2R A*STAR. This specific advertisement is for **one** or **two** positions within the group of Prof. LAPKIN.

Who are we looking for?

We are looking to fill a vacancy of a Research Fellow or a Senior Research Fellow with experience in process modelling and machine learning. We are seeking candidates with experience in developing chemical process models and in simulation. Specifically, experience in modelling processes related to manufacture of pharmaceuticals, such as multiphase batch and continuous synthetic chemistry reactions, crystallization, tableting, etc, using tools such as Matlab, gPROMS, Aspen Custom Modeller, or similar. The successful candidate would also have understanding of machine learning methods and have experience of coding in Python.

What skills do you have?

Working with process modelling environments such as gPROMS, Matlab, Aspen Custom Modeller or similar. Development of first principles models. Excellent knowledge of process modelling background and theory, such as unit operations, mass & heat transfer models, chemical reactor design, separation processes. Ideally, knowledge of OntoCAPE and process ontologies. Ideally, coding experience and some experience of using ML in process development.

When is position available and for how long?

The position is available immediately initially as fixed-term contracts with the end-date of 31 May 2025. The position will be offered subject to probationary period of six months. There is a possibility of extending this position beyond the current Digital Twins project.

What can we offer you?

- A stimulating working-environment with friendly, highly motivated colleagues.
- Opportunities to develop and implement new ideas in a creative environment.

- A competitive salary in line with your skills and experience.
- A one-year contract in the first instance, extendable following satisfactory performance.
- A comprehensive medical insurance cover as part of your employment.

Please note that this post is mainly based in the CREATE Tower at NUS University Town, Singapore.

To apply, please send your CV and cover letter (summarising the most relevant skills and experience that you have for the position) to https://talent.sage.hr/jobs/fb815513-f1e5-4948-a703-8cb0fa2f7b3e.

Informal enquiries could be sent to the academic lead of the project: Prof. Alexei Lapkin (aal35@cam.ac.uk).