PhD position: Pharmaceutical Process Engineering for Drug Development and Manufacturing, Ghent University Belgium

Overview

This PhD project aims at developing mechanistic insight about the equipment used for innovative pharmaceutical production processes (e.g., continuous manufacturing, spray drying, freeze-drying, etc.), and to exploit this knowledge in the development of advanced systems handling challenges specific to pharmaceutical processing. The research will be conducted in close cooperation with pharmaceutical companies and UGent research accelerator Centre of Excellence in Sustainable Pharmaceutical Engineering (CESPE). The research outcome will be published in important scientific journals.

The pharmaceutical industry has been traditionally a very innovative industry when discovering new drugs. When it comes to manufacturing platforms, the industry still relies on some very standard set of unit operations in manufacturing platform. During manufacturing, pharmaceutical raw materials (i.e., active drug compounds and excipients) are processed by several consecutive process steps or process phases, leading to a final product formulation with the predefined quality. With the increasing diversity of new products and the complexity of the solid-dosage processing at development scale, it is clear that there will be no "one size fits all" solution feasible for future factory-scale manufacturing technologies.

Thus, mechanistic knowledge about the pharmaceutical manufacturing systems using process engineering principles is key to future pharmaceutical manufacturing. Such detailed knowledge can provide valuable insights in estimating the value of existing manufacturing platforms in deliver solutions for new drugs and also provide an opportunity to deliver innovative manufacturing platforms for large-scale drug manufacturing of high quality. The ultimate goal of this research is to streamline the drug product development process and develop a framework that can accelerate to value realization of new manufacturing platforms for the industry.

Profile

1. Master's degree in chemical engineering, bioengineering, and process engineering or a related discipline.
2. Experience with the development of numerical methods.
3. Experience with modeling frameworks such as PBM, DEM, FEM is desirable.
4. Experience in Python and/or MATLAB is desirable.
5. Candidates must have a strong interest in mechanistic modeling and pharmaceutical engineering.

How to apply

You have to use the online application tool available here to provide your CV with the names of three references, motivation letter, and transcripts of your bachelor and master studies.

Application deadline

Please apply before October 31st, 2020

Further inquiries

For more information about this vacancy, please contact Prof. Ashish Kumar (Ashish.Kumar@UGent.be, +32(0) 9 264 80 91).
Note: Please do NOT send your application by email, but apply online.