

## School of Pharmacy PhD Project 2017 / 2018

The application of systematic approach to End-to-End continuous manufacturing of pharmaceutical solid dosage forms

Pharmaceutical manufacturing sector, a highly conservative industry, is now approaching to a new era of manufacturing revolution. Many disconnected upstream batch processes from synthesis of raw active pharmaceutical ingredients (APIs) to purification and crystallisation are now transforming into fast and continuous sequential processes. Whilst, integrated continuous flow downstream process is also emerging where the isolated APIs and raw excipients can be formulated into solid dosage forms in a homogeneous process. This new era is significant and symbolising a paradigm shift of anonymous manufacturing of pharmaceutical solid dosage form in this sector. In a perfect future world, fully End-to-End manufacturing utilising homogeneous mixture will be fully implemented in the industrial setting hence the completely removal of upstream and downstream batch processes. To be able to achieve this End-to-End manufacturing, the one of most crucial aspects is to design the formulation with predictable phase behaviours, i.e. the homogeneous mixture should be engineered into the formulation. The aim of this project is to implement a novel systematic approach to the design and characterisation of a series advanced solid dosage forms manufactured via solvent-free hot-melt extrusion platform. We are seeking highly motivated candidates with knowledge of thermodynamics and interests in advanced pharmaceutical manufacturing.

### General Email Enquiries

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### Project Email Enquiries

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### How to Apply

Postgraduate applications should be made using Queen's University [Direct Applications Portal](#). Please note that there are two application processes: one for admission to the university and another for postgraduate awards.

### Further Information

Additional information for prospective postgraduate students can be found on the [School of Pharmacy website](#) and the [Queen's Postgraduate website](#).