

TITLE OF POST: Postdoc/Senior Postdoc Researcher in Continuous Manufacturing of Pharmaceutical Nanoparticles

LOCATION: University of Limerick

WEBLINK TO SCHOOL/DEPARTMENT: <https://www.ul.ie/scieng/schools-and-departments/school-natural-sciences/department-chemical-sciences>

WEBLINK TO RESEARCH CENTRE: <https://bernalinstitute.com/> ; www.sspc.ie

REPORTS TO: Project Leader

WEBLINK TO PI'S WEBPAGE: <http://padrelagroupul.ie/>

CONTRACT TYPE: Specific Purpose

SALARY SCALE: €39,132 – €50,529 per annum. Starting salary will depend on experience

QUALIFICATIONS:

- Doctoral degree (level 10 NFQ) in chemical engineering, mechanical engineering, pharmaceutical engineering or relevant related engineering areas.

OVERALL PURPOSE OF THE JOB:

This position is funded by Science Foundation Ireland (SFI). The overall objective is to develop a single-step continuous manufacturing technology for size, polymorphic control and coating of pharmaceutical nanocrystals/nanoparticles onto micron-sized excipient particles. The development and commercialization of this technology has been ongoing (<https://www.irishtimes.com/sponsored/innovation-partner-profiles/seven-out-of-10-new-drugs-are-wasted-but-there-is-a-solution-1.4612945>), with a target to launch a start-up in 2023/2024.

DESCRIPTION:

Poor solubility and polymorphism of pharmaceutical drugs represent major challenges in pharmaceutical science and engineering for the manufacture of drug substances. This project proposes to address these industrially relevant global challenges by providing an extensive understanding and control on the particle growth events of pharmaceuticals through the development of novel nanoparticle production methodologies. In this project, spray drying/atomization and fluidized bed coating (of drug nanoparticles onto micron-sized polymeric excipients) will be combined into a continuous process to convert API solutions into directly compressible nanopowders with the desired polymorphic form, particle size and rheological properties.

Essential Criteria

- Doctoral degree (level 10 NFQ) in chemical engineering, mechanical engineering, pharmaceutical engineering or relevant related engineering areas.
- Strong publication track-record in pharmaceutical engineering (or related engineering areas) in Q1 journals.
- Strong experience and technical skills in engineering of pharmaceutical processes.
- Excellent Interpersonal, Writing and Communication skills

Additional/Desirable Criteria (not compulsory)

- Expertise in Computational Fluid Dynamics (CFD), Population Balance Modelling (PBM) or other modelling methods.
- Expertise in particle fluidization, spray drying, atomization, spray coating or related methods dealing with powdered materials.
- Expertise in particle formation using high-pressure techniques.