Pfizer Logo

New project to enhance nanomedicine development

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United Kingdom – The Centre for Process Innovation (CPI), a UK-based technology innovation provider for process manufacturing, today announced that it has launched a new collaborative project strengthening its nanoformulations capabilities, to better enable CPI to work with companies to develop the next generation of nanomedicines. The project aims to evaluate a new microfluidic-based platform for the scale-up, process development and manufacture of nanoformulated medicines. If the project is successful, CPI will make the new microfluidic-based platform available at its National Formulation Centre on an open-access basis to aid in the development of products and technologies emerging from academia and the biotech sector for clinical evaluation and commercialisation.

Nanoformulations can enhance conventional drug properties and thus in some cases provide more effective medicines and vaccines. These enhancements can include improving the intracellular delivery and tissue targeting of drugs, i.e. delivering the right amount of a molecule to the right tissue at the right time which can enhance health outcomes and reduce negative side-effects. Nanoformulations are also potentially an enabler for new therapies that are inherently difficult to deliver to target sites, such as the delivery of nucleic acid therapies for cancer treatment. The market for nanoformulated medicines is growing at a significant rate, with an estimated market value of $15.8 billion in 2014 and forecasted growth to $44.5 billion by 2019. 1 However, the development of robust and scalable processes for nanomedicines manufacture remains a challenge, with poor manufacturability being a potential barrier to commercial success for the next generation of nanoformulated medicines. The outcomes of the project have the potential to confer significant benefits for future medicines development, whilst further strengthening the North East of England’s position as a hub for medicines manufacture.

As part of this project, CPI will collaborate closely with a range of organisations including the University of Manchester, the University of Strathclyde, AstraZeneca, Pfizer, Croda, Malvern PANalytical, and Precision Nanosystems. These partners will contribute knowledge and expertise relating to the design, development and manufacture of nanomedicines. The manufacturing platform for this project will exploit microfluidic devices in which the mixing of reagents can be exquisitely controlled to deliver structures that allow the development of nanoformulated medicines with highly controlled properties. Use of the selected manufacturing platform technology therefore has the potential to deliver better products and processes, whilst reducing the time taken to develop new nanoformulations for use in the clinical development of investigational medicines.

1 http://www.drug-dev.com/Main/Back-Issues/NANOTECHNOLOGY-MARKET-Nanotechnology-Markets-in-He803.aspx#sthash.ia5kUu5A.dpuf

“We are thrilled to be working with such a strong consortium of collaborators on a project that will have positive impact for a rapidly emerging market.” says Graeme Cruickshank, Director of CPI’s National Formulation Centre. “The development of this microfluidics platform will underpin our capability to enable companies to robustly scale up novel nanoformulations, improving the chances of a positive result in pre-clinical trials. Ultimately this will lead to benefits for large and small companies alike.”

Yvonne Perrie, Professor in drug delivery at the University of Strathclyde says “Having worked in the field of liposomes and microfluidics for some time now, we are delighted to be part of this project and add in our experience in developing scalable manufacturing processes for liposomes and nanomedicines.”

Notes to the Editor

About CPI

The Centre for Process Innovation is a UK-based technology innovation centre and is part of the High Value Manufacturing Catapult. The company uses applied knowledge in science and engineering combined with state of the art development facilities to enable its clients to develop, prove, prototype and scale up the next generation of products and processes.

Established to support the UK process manufacturing industry, CPI collaborates with universities, SMEs and large corporations to help overcome innovation challenges. Operating across a broad range of technologies, partners are supported at every stage; from concept to market; business support to technology development; and from scale up to supply chain intervention.

CPI consists of dedicated national innovation centres that support industrial biotechnology and biorefining, printable electronics, biologics and formulation. The centres enable advancements in major markets such as healthcare, electronics, food and drink, aerospace, automotive, materials, and energy. These world leading, digitally enabled and open access facilities are available for partners to get their products and processes to market quickly with minimal risk. Utilising strong networks, CPI brings together a range of partners in the delivery of innovation projects, with a common goal of strengthening the UK’s position in High Value Manufacturing.

For more information, please visit: https://www.uk-cpi.com/ Follow us on Twitter and LinkedIn

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