

SSPC, SFI Research Centre for Pharmaceuticals

The SSPC is now recognised internationally as a hub of process innovation and advanced manufacturing for the Pharmaceutical and (bio) Pharmaceutical Sector. The SFI Research Centre has demonstrated capabilities in the design and implementation of flow chemistry, asymmetric synthesis, fundamental and applied aspects of pharmaceutical crystallization, amorphous materials, continuous processing, novel pharmaceutical solid forms and emerging pharmaceutical technologies.

A World
Leading SFI
Research
Centre



Research Programme and Capabilities

SSPC researchers work in partnership with the international pharma and biopharma sector to solve key industrial challenges enabling novel and efficient methods of manufacturing safer, cheaper and more effective medicines for the future. SSPC has a proven track record in delivering excellent research that is critically informed by the needs of the pharmaceutical sector. SSPC can support your research and development activities with particular emphasis on:

- Reducing Time to Market in Drug Development
- Advancing Manufacturing Process and Technologies
- Improving Efficacy of Drug Products
- Addressing the Needs of New, More Complex Active Ingredients

SSPC research is truly multi-disciplinary leading to innovation in chemistry, process engineering, data analytics, designer drug hybrid medicine (drug-antibody, peptide, oligonucleotide and glycoside conjugates), and mathematical modelling. Industry requires manufacturing systems that have full feedback control and which are self-correcting. In response SSPC's research advances process modelling, PAT, and statistical modelling for model predictive control of pharmaceutical manufacturing.

Our new industry membership programme continues SSPC's strong track record with local pharmaceutical industry partners.

SSPC has created a consortium of international industry and academic partners that is recognised as the most inclusive and collaborative pharmaceutical/academic partnership in the world. The centre facilitates a unique link between scientists and engineers, within academia and industry in Ireland and globally, to address crucial research questions, that face the global pharmaceutical industry.

SSPC produces PhD graduates and post-doctoral researchers with specific disciplinary expertise, coupled with a broad understanding of cognate disciplines across pharmaceutical science and manufacturing. Building on our industry placement programme, the transition rate of SSPC researchers to industry currently stands at 70% in a global context, the highest of any research centre in Ireland.



HOST INSTITUTION



PARTNER INSTITUTIONS



Membership and flexible business model

Currently, SSPC has an extensive portfolio of targeted research projects underway (mainly single industry directed). Industry projects can be supported in a number of ways in SSPC.

1. Companies have the option to initiate fully funded industry specific research projects and own all project IP thanks to a flexible Irish IP protocol that facilitates industry led project collaborations with Irish research performing organisations.
2. Companies can also avail of SSPC Co-Funding (max. 50%), providing organisations with the opportunity to licence back any IP arising.

Industry collaborators include:

- | | | |
|--------------|------------------------|--------------------|
| > Alkermes | > Janssen | > Pfizer |
| > APC | > Jazz pharmaceuticals | > Regeneron |
| > Canty | > Kapaji | > Sanofi |
| > Clariochem | > M Star | > Scale-Up Systems |
| > Eli-Lilly | > Magritek | > SK Biotek |
| > Glantreo | > MSD | > Zentiva |
| > Innopharma | | |

Education and Public Engagement (EPE):

The SSPC EPE programme is broad and varied, targeting pupils, teachers, parents, grandparents and the wider public. The centre places particular focus on working with female pupils, those from a disadvantaged socio-economic background, and those living in geographical areas with little access to Science, Technology, Engineering and Mathematics research and activities. Some highlights of our programme are our Teacher Continuous Professional Development Programme, our Transition Year Work Experience Programme, the SSPC Structured PhD and our Innovation in Medicines Project.



Key Contacts

Professor Michael Zaworotko

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Professor Zaworotko is a Bernal Chair of Crystal Engineering at the University of Limerick. He is among the world's top 20 research chemists and secured the first award under the relaunched Science Foundation Ireland (SFI) Research Professor programme. His research interests focus on designing crystal structures that can be used in the pharmaceutical and energy industries.

Professor Gavin Walker

Scientific Director
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Professor Gavin Walker is Bernal Chair of Pharmaceutical Powder Engineering and a principal investigator in the SFI Investigators Programme at UL and the SSPC Spokes Project, MOMENTUM. His expertise is in pharmaceutical process engineering and modelling of particulate systems.

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