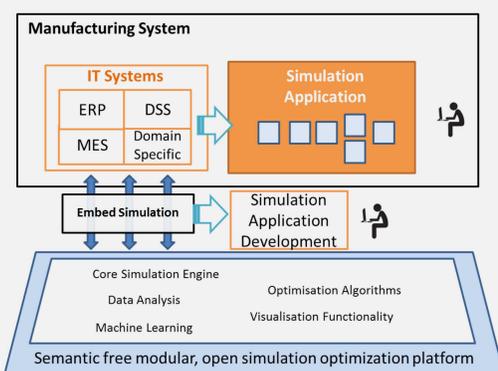


Overview

The Advanced Processing Technology Research Centre (APT) conducts both fundamental and applied research for the benefit of partner companies and the wider community. The centre has a strong network of academic and company connections both locally and internationally, and expertise across business, materials processing, chemistry, biotechnology, and physical science. Improved products and processes, from advanced manufacturing, provide increased profitability and employment, and ultimately result in improved social cohesion. The APT centre focuses on providing solutions to companies in the areas of Production Technology; Micro/Nano Systems; Product Design & Sustainability; and Advanced Materials Engineering.



Research Areas



Research activities within **Production Technology** include metal forming, laser processing, polymer moulding, and bespoke material surface modification projects. Comprehensive research projects within **Micro and Nano Technology** include the development of microfluidic systems for separation science, micro electro-mechanical systems (MEMS) for sensing, and novel devices for component defect detection. Extensive research projects within **Product Design & Sustainable Technology** include the development of increased energy efficiency within production systems, innovative pump designs, and new photovoltaic solar cell architectures. Significant research projects undertaken within **Advanced Materials Engineering** include creating enhanced life time biomedical prostheses, novel synthetic bone scaffolds, analysis of surgical procedure for implant fixation, and the development of balance rehabilitation systems. APT research has led to the development of specialised optimisation algorithms for process flow simulation and cost analysis.

Why work with us?

APT has a large national and international network of partners with multi-disciplinary expertise adept at working together to solve immediate and long-term materials processing problems. Projects worth over €10M have been successfully developed and completed at APT within recent years for indigenous and international enterprises. Expertise and facilities at APT can be directly contracted to solve a wide range of industrial processing and product design problems. The technologies researched within APT are cross cutting key enabling technologies which are therefore present throughout current and future identified National and EU Priority areas. A primary benefit of APT is the unique multi-disciplinary research team and network which allows the centre to readily address and formulate bespoke plans for industrial related research and development.



Centre Members



Prof Dermot Brabazon is the director of APT. His research interests are primarily in the area of advanced materials processing. This includes, nano-composite production, laser processing, additive manufacturing, and device applications in the domain of separation science.



Prof Patrick McNally is co-director of APT. His main research interests include nanomaterials and electronic device process characterisation (including x-ray diffraction imaging and photoacoustic metrology), photoacoustics for clinical deployment and copper halides for photonics applications.

Centre Members

Dr Stephen Daniels
 Dr Paul Young
 Dr Mercedes Vazquez
 Dr Tamas Szecsi
 Dr Lorna Fitzsimons
 Prof Saleem Hashmi
 Dr Sumsun Naher
 Dr Teresa Hogan
 Dr Andreas Heise
 Mr Brian Freeland

Prof Fiona Regan
 Dr John Geraghty
 Dr Brendan O'Connor
 Dr Kieran Nolan
 Dr Anne Morrissey
 Dr Brian Kelleher
 Dr Kieran Moran
 Dr Martin Quinn
 Dr Brian Corcoran
 Dr Yan Delaure