



**Professor Eileen Harkin-Jones OBE FREng** is the Bombardier-Royal Academy of Engineering Chair in Composites Engineering at Ulster University. Funded by these three organisations from 2014 until 2019, Professor Harkin-Jones has developed a programme of research in composites and aerospace materials.

**Professor Eileen  
Harkin-Jones  
OBE FREng**  
**Research Chair**



“My Research Chair has enabled me to reconnect with industry and has opened up a myriad of new research opportunities and challenges for the future.”

## RESEARCH

Professor Harkin-Jones specialises in polymer engineering at Ulster University's Engineering Research Institute. The Research Chair has provided her with an opportunity to collaborate with Bombardier, the world's third-largest civil aircraft manufacturer, on a challenging programme of research that looks at the development and processing of advanced thermoplastic polymer and composites materials.

With this award, Professor Harkin-Jones has established a research group that is addressing several key challenges, such as developing material and processing strategies that enable the manufacture of high performance, multifunctional, thermoplastic composite parts with consistent, reproducible properties.

The group has also made progress with developing high performance materials for additive manufacturing and the identification and implementation of sustainable manufacturing processes. Developing novel materials in a sustainable way is key to meeting Bombardier's engineering needs and Professor Harkin-Jones' research directly helps towards this.

## IMPACT

As the Bombardier-Royal Academy of Engineering Chair in Composites Engineering, Professor Harkin-Jones has brought several partners together. She leads Ulster University's research at the Northern Ireland Advanced Composites and Engineering Centre (NIACE) and, by leveraging additional funding from sources such as the Engineering and Physical Sciences Research Council (EPSRC), she has established a group of seven postdoctoral research awards and seven PhD students who are working on collaborative research projects involving these partners.

Furthermore, through NIACE, these students have access to equipment belonging to industry partners and opportunities to spend time on site with them.

Bombardier and other partners also benefit from the collaboration. “Our industry partners have gained benefit from access to undergraduate, master's and PhD students as well as access to processing and characterisation equipment,” notes Professor Harkin-Jones. “A further benefit has been new business opportunities arising as a result of the close relationships forged between companies via collaborative research projects.”

## FUTURE PLANS

While the award is in its early stages, there are plans to ensure the research group's continuation once it has ended.

“We have an ongoing schedule of funding applications to EPSRC, Horizon 2020 and Invest Northern Ireland”, Professor Harkin-Jones explains. “The research opportunities arising from our current industrial projects are extensive and will provide a wealth of opportunities for successful funding bids to sustain the group and further strengthen industrial collaboration.”

## RESEARCH CHAIRS AND SENIOR RESEARCH FELLOWSHIPS SCHEME

The Research Chairs and Senior Research Fellowships scheme aims to strengthen the links between industry and academia by supporting exceptional academics in UK universities to undertake user-inspired research that meets the needs of industrial partners. Awards are co-funded by the Royal Academy of Engineering and the industry partner and last for five years.