Collaboration wins funding

A ten-year collaboration between Professor Ivana Partridge from the Composites Centre in SAS and Professor Ralph Tatam of the Engineering Photonics Group in SOE, has led to them receiving more than €1m share of a €6m programme from the EU FP7 programme – their biggest joint grant yet.

Working alongside 10 European partners, the money will be used to fund research into the novel construction of a composite tailcone assembly for business and regional aircraft that uses embedded optical fibre sensors to monitor the manufacturing process of this next generation of composite structures.

Ralph explained: "Ivana's group has been developing the next generation of cheaper, lighter and stronger composite materials, while my team have been looking at embedding fibre optic sensors into this new material in order to monitor the internal condition of the part during its manufacture. Such data can then be used to help improve the manufacturing process and, hopefully, lead to better quality parts being manufactured.

"The sensors will also allow the processing of the part to be monitored from infusion of the resin, through the cure process and subsequently measuring the generation of stresses and strains in the material during use. This will help guide maintenance efforts and identify if there are any problems which are not necessarily visible. Previous research by the two groups has found that the optical fibre sensors are able to pick up stresses and strains that have not been found using other methods.

"Fibre optics is the optimum technology to use, as it can be embedded into the composite without affecting or distorting its mechanical performance. Nor do the sensors require an electrical connection as all the signals are sent by light."

This programme has developed from a previous collaboration between the two teams where this sensor technology was successfully demonstrated within superconducting magnet systems in a programme funded by EPSRC via the Cranfield Innovative Manufacturing Research Centre.

'Virtual Silverstone' project

Damon Hill has welcomed the innovative 'Virtual Silverstone' project, a unique partnership between Silverstone Circuits Ltd and the University which enables students on our Motorsport Engineering and Management programme to gain a real insight into the business of motorsport.

Speaking at the two-day launch event at the Silverstone Innovation Centre, the 1996 F1 World Champion and current British Racing Drivers' Club (BRDC) President highlighted the importance of industry interaction in educating the motorsport industry's future managers, designers and engineers.

Students will be taking part in many activities at Silverstone throughout the year – track design, motorsport marketing, large-scale event management and a range of other business-related issues.

Professor Kambiz Kayvantash, Head of our Centre for Automotive Technology, said: "This partnership is a world first in motorsport teaching and training. We are very pleased with the collaboration with Silverstone and expect it to benefit both Cranfield motorsport students and Silverstone."

Richard Phillips, Managing Director of Silverstone Circuits Ltd, said: "Silverstone and the BRDC have been working with Cranfield for some years and this is an important part of our education strategy, supporting initiatives for all age groups from young children through to mature students."

Prestige lecture series

The Cranfield Prestige Lecture series is a programme of keynote lectures on a variety of topics affecting the globe across a number of sectors. Lecturers will be key influencers in business and academia.

Thursday 14 January – Dame Helen Ghosh, Permanent Secretary of DEFRA

Tuesday 26 January – Professor Chris Snowden, President of the Institution of Engineering and Technology (IET)

All staff are welcome; to book your place visit: www.cranfield.ac.uk/lecture/