

Travel Grant Report

World of Photonics Congress,
International Congress Centre,
Munich, Germany
17th to 22nd June 2007

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The World of Photonics Congress is the leading European congress on laser applications, optical technologies and photonics held in conjunction with Laser 2007. It was held in Munich from June 17th to 22nd 2007 at the International Congress Centre. Seven separate conferences were held in parallel including CLEO Europe (Conference in Lasers and Electro-Optics), ECBO (European Conference on Biomedical Optics), trends in optoelectronics and frontiers in electronic imaging (organized by EOS) and optical metrology (SPIE). LASER 2007 is also one of the largest trade shows in optics and photonics technologies in Europe. My work was presented at the Optical Metrology meeting. The conference had three strands: optics for arts, architecture and archaeology, modelling aspects of optical metrology and optical measurement systems for industrial inspection. My talk was given under the latter.

My presentation title was, "Fibre grating refractometer sensors for composite process monitoring". The talk gave a brief introduction to the function of composites and the requirement for process monitoring of these materials during the cure process. Through the application of grating based refractometry it is possible to track the cure of resin systems with in situ sensors without affecting the structural integrity of the component. The talk was well received with Dr. T Allsop from Aston University's photonics research group highlighting the capability of long period gratings to be "designed for purpose", e.g. temperature insensitive strain measurements. Steffen Wietzke of the "Institut für Hochfrequenztechnik" in Germany also showed interest in the work as a comparative NDT (non-destructive testing) technique of composites with THz imaging.

Although the conference did not have a fibre sensor focus, I found the broad breadth of technologies at the trade show and the presentations both interesting and eye opening. Of particular interest was an enjoyable talk given by Prof. Philip Russell from the Max Planck research group on photonic crystal fibres. The manner of the presentation gave it an approachable feel and I learned much of the mechanism of the fibre waveguide and their many possible applications. An informal poster session highlighting the research activities of the Max Planck research group followed the talk with complimentary beer and nibbles, which was well appreciated.

To gain an appreciation of the range of possibilities that photonics encompasses the conference was ideal and very much an enjoyable and rewarding experience. I would like to thank the optical group of the Institute of Physics for awarding me a travel grant towards the cost of the trip.