Technological innovation in photonics: from the Institute of Photonics to Fraunhofer and from mLED to Oculus

Colloquium given by
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Venue: SPMS-LT3 (SPMS-03-02)
Host: Division seminar committee

Abstract

Photonics is a key enabling technology with a very broad range of applications across multiple research and market sectors. We justify much of our research funding and research outputs in photonics in terms of the field’s potential for innovation – when, for example, did you last read a research proposal or research paper which did not highlight the prospective applications of the work? Furthermore, it is often the prospects for commercialisation that most excite our students and post-docs. But what is innovation exactly?

The presenter will use his 35 year research career to illustrate how technological innovation works in practice – from the laboratory bench to commercial exploitation. This talk will unpick the elements that combine in innovative developments using examples from his own work in semiconductor optoelectronics and lasers. This will include work on ultrafast dye lasers, semiconductor materials science, VECSELs and micro-LEDs.

Short Biography

Professor Martin D. Dawson is the Director of Research at the University of Strathclyde’s Institute of Photonics, a highly successful research institute which he helped found almost 25 years ago. He is also, since 2012, the Director of the UK’s only Fraunhofer Research Centre: the Fraunhofer Centre for Applied Photonics. Prof. Dawson is widely known for his contributions to laser and semiconductor research, including pioneering contributions to VECSELs, diamond photonics and micro-LEDs, and he has authored or co-authored over 800 journal and conference papers. He has been involved in the creation of several start-up companies, most recently including mLED Ltd which was sold to Oculus in 2016. He holds fellowships of the IEEE, OSA, Institute of Physics (IOP) and the Royal Society of Edinburgh, and has been awarded the Dennis Gabor Medal and Prize of the IOP and the Aron Kressel Award of the IEEE.