



## **P45: University of Cambridge - UCAM (United Kingdom)**

### **Description of expertise & activities**

The Photonic Systems group at Cambridge University is led by Professors Ian White and Richard Penty, and primarily focuses in the areas of optical data communications, RF over fibre, optical switching and ultrafast photonics. It has expertise in the areas of optoelectronic device design, fabrication and high speed assessment. There is also a significant modelling effort looking at the physics of semiconductor lasers, amplifiers and related components in order to enhance and optimise their performance. Systems research includes multimode fibre LANs, optical packet switching, all-optical regeneration, OTDM and radio over fibre systems and the group is active in standards bodies such as IEEE 802.3 and ANSI INCITS T11. Facilities include a class 100 darkroom, FIBE, device bonding to 20GHz RF bandwidth and fully equipped assessment laboratories which include 12.5 and 40Gb/s BERTs, 65GHz temporal, 40GHz bandwidth RF and 100MHz resolution optical spectral instrumentation. The group has been involved in the WILD, DOTCOM, BRIGHT-EU, MONOPLA, WAPITI and WWW.BRIGHTER.EU IST projects, as well as the e-Photon/ONe+, and ePIXnet NoEs, and holds ~5Meuro of current research contracts. The group collaborates closely with 16 universities/research institutes and 12 companies spread across 17 countries.

### **Tasks within BONE**

WP02	VCE Teaching
WP13	VCE Access networks
WP14	VCE Optical switching systems
WP25	TP Optical Interconnects

### **Key personnel**

**Ian H. White.** Professor White received the B.A. and Ph.D. degrees from the University of Cambridge, U.K., in 1980 and 1984, respectively. He was appointed as Research Fellow and Assistant Lecturer at the University of Cambridge before he became Professor of Physics at the University of Bath, U.K., in 1990. In 1996, he moved to the University of Bristol, U.K., where he was Professor of Optical Communications, Head of the Department of Electrical and Electronic Engineering in 1998, and Deputy Director of the Centre for Communications Research. He returned to the University of Cambridge in October 2001 as van Eck Professor of Engineering. He is the Head of Photonics Research at the University of Cambridge. He has published in excess of 500 publications and 35 patents. Prof. White is currently the Honorary Editor of Electronics Letters.

**Richard V. Penty.** Professor Penty received the Ph.D. degree in engineering for his research on optical fiber devices for signal processing applications from the University of Cambridge, U.K., in 1989. He was a Science and Engineering Research Council (SERC) Information Technology Fellow, again at the University of Cambridge, working on all optical nonlinearities in waveguide devices. He is currently a Professor of Photonics at the University of Cambridge, having previously held academic posts at the Universities of Bath and Bristol. His research interests include high-speed optical communications systems, wavelength conversion and wavelength division multiplexing (WDM) networks, optical amplifiers, optical nonlinearities for switching applications, and high power semiconductor lasers. He has been the author of more than 400 refereed journal and conference papers. Prof. Penty is an Editor-in-Chief of the IET Optoelectronics Journal.