



## SEMINAR



### Center for Advanced Research in Photonics & Department of Electronic Engineering The Chinese University of Hong Kong

Friday, 11th November 2005  
10.30am-11.30am

Room 418 Ho Sin Hang Engineering Building, The Chinese University of Hong Kong

### **InP Optoelectronics: Design and Fabrication of high performance Fullband Tunable Lasers and Modulators for Optical Networks**

**Dr Andy Carter**  
**VP Research and Development, Bookham Inc**

This presentation will address the design, fabrication and application of lasers, modulators and transmitters for full band tunable 10Gbps applications. It is now widely accepted that next generation DWDM communication systems will use full band tunability to make system planning as simple as possible. In addition, tunability is required to achieve the full potential of dynamic wavelength switching and reconfigurability. The challenge is in achieving these objectives with no compromise to power, linewidth, SMSR, reliability or cost.

Bookham has developed the DS- DBR laser with full band tunability to meet these needs. The laser includes novel grating designs which enable the device to tune with minimal power change and performance equivalent to DFB lasers. The use of a monolithic laser platform allows manufacturing and packaging scalability using standard processes. This scalability, coupled to simple tuning and calibration algorithms will allow tunability to be available at or near equivalent pricing to fixed frequency lasers.

The presentation will also discuss the InP based MZ modulators necessary for the realization of small form factor transmitters, together with the design and performance of such transmitters.

**Andy Carter** received his doctorate in Semiconductor Physics from Oxford University in 1977 and moved directly into the field of Photonics, joining the Caswell Research Centre in the UK, initially working for the Plessey Company, latterly for Marconi and then Bookham. He has been central in defining and executing research and development strategies in many aspects of photonic devices and systems, including active components for high speed systems, WDM technologies, tunable lasers and optoelectronic integration. Andy has published or presented over 200 journal or conference papers, including invited papers at major photonic conferences. He has been awarded several prizes throughout his career, including the Patterson Medal from the Institute of Physics and the Nelson Gold Medal from the GEC Company. Andy's current role is Vice President Research and Development, with responsibility for III-V optoelectronic devices.

Andy is member of the IEEE, the Institute of Directors and a visiting Professor in the Advanced Technology Institute of Surrey University.

**\*\*\* All are welcome to attend \*\*\***

For further information please contact Prof.H.K.Tsang (Tel. 26098254) email [hktsang@ee.cuhk.edu.hk](mailto:hktsang@ee.cuhk.edu.hk)