

## **Photonic integrated circuits for the new information age: Faster, smaller and smarter**

### **A Public Lecture by**

**Professor Benjamin J. Eggleton**

ARC Laureate Fellow, Director, CUDOS, ARC Centre of Excellence  
School of Physics, University of Sydney

**Thursday, 6 August 2015 @ 6.00 PM**

#### **Venue:**

**Theatre Auditorium, University Club, University of Western Australia, Crawley**

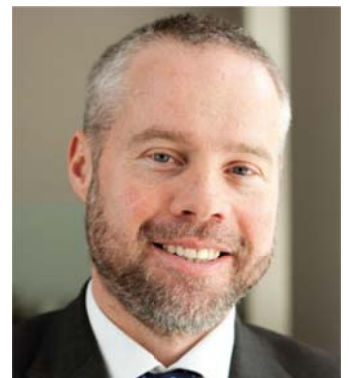
This seminar is open to the public and admission is free to all however RSVP **required**. Book Online:  
[www.ias.uwa.edu.au/lectures/eggleton](http://www.ias.uwa.edu.au/lectures/eggleton)

#### **Abstract:**

Photonic integrated circuits use light rather than electrons to perform a wide variety of optical functions. Recent developments in nanotechnology have expanded the range of possible functionalities for these highly integrated optical chips. This lecture will review our recent progress in developing photonic circuits that exploit nano-photonics and optical nonlinearity to generate and manipulate light, down to the single photon level with a focus on emerging applications in quantum information processing, microwave photonics and mid-infrared photonics. This event is part of LightTALKS, a lecture series where scientists and artists talk about optics, organized to celebrate the 2015 International Year of Light. IYL2015 is a global initiative adopted by the United Nations to raise awareness of how optical technologies promote sustainable development and provide solutions to worldwide challenges in energy, education, agriculture, communications and health.

#### **Biography:**

Professor Benjamin Eggleton is an ARC Laureate Fellow and Professor of Physics at the University of Sydney and Director of the ARC Centre for Ultrahigh bandwidth Devices for Optical Systems (CUDOS). He obtained his PhD degree in Physics from the University of Sydney, in 1996 and then joined Bell Laboratories, Lucent Technologies as a Postdoctoral Member of Staff. In 2000, he was promoted to Director within the Specialty Fiber Business Division of Bell Laboratories, where he was engaged in forward-looking research supporting Lucent Technologies business in optical fiber devices. He returned to the University of Sydney in 2003 as the founding Director of CUDOS and Professor in the School of Physics.



Professor Eggleton is a Fellow of the Optical Society of America, IEEE and ATSE. He was the recipient of the 2011 Eureka Prize for Leadership in Science and the Walter Boas Medal of the Australian Institute of Physics and has received numerous other awards for his research. Eggleton has published about 400 journal papers which have been cited >13,000 times with an h-number of > 56 (webofscience). He was President of the Australian Optical Society and is currently Editor-in-Chief for Optics Communications.

The 2015 International Year of Light Series at UWA is co-sponsored by the Institute of Advanced Studies, Lions Eye Institute, The Optical Society and SPIE, the international society for optics and photonics.