Applied Physics & OSA

Optics Seminar

CUDOS – Towards All-Optical Control on a Chip!

Prof. Benjamin Eggleton

Professor of Physics, University of Sydney, Research Director of CUDOS

My talk will overview the research highlights of CUDOS, An ARC Centre of Excellence. CUDOS is a research consortium between five Australian Universities: The University of Sydney, Macquarie University, University of Technology Sydney, Australian National University and Swinburne University of Technology. The CUDOS research program has two central themes: nano-photonics and nonlinear photonics. Our goal of achieving ultrahigh-speed all-optical signal processing on a single photonic chip is addressed by combining these two themes to develop micron-scale photonic components incorporating nonlinear photonics processes. This talk will review progress on the CUDOS flagship projects that represent ambitious cross-node collaborations toward this goal: (i) Slow light in photonic crystals; (ii) Photonic chip based optical regenerators; (iii) Photonic crystal based optical logic device; (iv) and three-dimensional photonic bandgap structures for higher dimensional control.

Brief Biography:
Professor Benjamin J. Eggleton is currently an ARC Federation Fellow and Professor of Physics at the University of Sydney and the Research Director of CUDOS, an ARC Centre of Excellence. In 1996, he joined Bell Laboratories, Lucent Technologies as a Postdoctoral Member of staff then transferred to the Optical Fiber Research Department. In 2000 he was promoted to Research Director within the Specialty Fiber Business Division where he was responsible for forward-looking research supporting Lucent Technologies business in optical fiber devices. Prof. Eggleton has co-authored over 140 journal publications and numerous conference papers and was the recipient of the 2004 Prime Ministers Malcolm McIntosh Science Prize for Physical Scientist of the year, the 2003 ICO prize from the International Commission on Optics, the 1998 Adolph Lomb Medal from the OSA the distinguished lecturer award from the IEEE/LEOS, is an OSA fellow and recipient of an R&D100 award. www.physics.usyd.edu.au/cudos

Friday, March 10, 2006.
4:00pm-5:00pm.
Watson 104

Refreshments will be available in the Watson Lobby at 3:45pm.

Host: Prof. Oskar Painter