



CI short biography

Benjamin Eggleton is currently an ARC Federation Fellow and Professor of Physics at the University of Sydney. He is founding Director of the Centre for Ultrahigh-bandwidth Devices for Optical Systems (CUDOS), an ARC Centre of Excellence. He is also the founding Director for the Sydney University Institute of Photonics and Optical Science. He studied at the University of Sydney, obtaining his BSc (Hons 1) in 1992 and his PhD in Physics in 1996. After graduation, he went to the United States to join the world's leading research institute in his field, Bell Laboratories, as a Postdoctoral Fellow in the Optical Physics Department. Soon after this, he became the Research Director of the Specialty Photonics Business Division of Bell Lab's parent company, Lucent Technologies where he drove Lucent's research program in optical fibre devices.

Eggleton has co-authored more than 290 journal papers, with more than 7000 citations, presented more than 70 invited and plenary presentations at international conferences, and has filed 35 patents. He has received several significant awards. Most notably, in 2010 he received the Scopus Young Researcher of the Year Award in the Physical Sciences category, in 2008 he received the NSW Science Prize for Physics, in 2007 he received the Pawsey Medal from the Australian Academy of Science and was awarded a Bright Sparks award from Cosmos Magazine, in 2004 he received the Prime Minister's Malcolm McIntosh Science Prize for Physical Scientist of the Year, in 2003 the ICO Prize (International Commission for Optics), and in 1998 was awarded the Adolph Lomb Medal from the Optical Society of America.

Other achievements include the award of the Distinguished lecturer award from the IEEE/LEOS, a R&D100 award, and being made a Fellow of OSA, IEEE and ATSE. He was an Associate Editor for IEEE Photonic Technology Letters from 2003-2007, and is currently Editor for Optics Communications. Professor Eggleton was the President of the Australian Optical Society from 2008-2010.

Description of Expertise

Professor Eggleton is an experimental physicist with deep understanding of the fundamentals of photonics and optical propagation effects as well as a broad understanding of optical

communications, and other applications of photonics. His specific areas of interest are nonlinear optics and optical solitons, optical gratings and photonic crystals, optical communications, photonic crystal fibres, optofluidics, supercontinuum generation and integrated optics. He has specialized in the fabrication of optical gratings and microstructured optical devices, such as photonic crystals and holey fibres. He has experience with nonlinear pulse propagation effects and ultrafast propagation in different optical systems.

Contributions to Centre

As the CUDOS Research Director, Professor Eggleton is responsible for setting the vision and focus for the research program and establishing and directing the research collaborations. He oversees the six current CUDOS Flagship research projects and drives strong interactions with CUDOS Partner investigators and end-users. He also heads the University of Sydney CUDOS node and leads the Sydney experimental programs, in close collaboration with Professors de Sterke, and McPhedran, which will be reported here. He is the Science Leader for the Nonlinear Optical Signal Processing project, providing the scientific and technical guidance for this highly collaborative projects that span across four Universities and international collaborators. He also actively collaborates and supervises staff and students in the Optical Switching Project, Slow Light Project and Tunable Microphotonics project.

International links and roles

During 2010 Professor Eggleton served on several international review committees, including the Advisory committee for the New Zealand Dodds-Walls Quantum Photonics Centre. He served as Guest Editor for a Special Issue in the journal Optics Express on the topic "Chalcogenide Photonics". The issue had 12 journal papers, including 3 articles from CUDOS researchers.

Eggleton presented numerous plenary presentations, invited papers and tutorial presentations at international conferences, including: a Plenary presentation at the SPIE-Europe meeting in Brussels, Belgium; an Invited paper at the SPIE Annual meeting in San Diego, USA; an Invited paper at the Ultrafast capacity Symposium in Copenhagen, Denmark; an Invited paper at the PECS meeting in Granada, Spain; a Plenary presentation at the International Conference on Optical Communications in Nanjing, China; a Plenary presentation at the Photonics India in Guwahati, India and an invited paper at the Photonics Global conference in Singapore.



Professor Ben Eggleton was chosen by the New York Academy of Sciences as one of the most outstanding young scientists under the age of 40 to represent Australia at the Science and Technology in Society forum in Kyoto, Japan in October 2010.

