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## Boris Kuhlmei



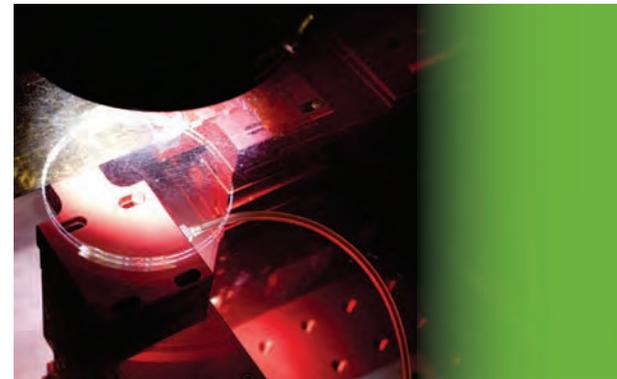
Boris Kuhlmei is an Australian Research Council Future Fellow with the School of Physics, The University of Sydney, with a continuing appointment as Senior Lecturer.

After undergraduate studies at the École Normale Supérieure de Lyon, and a Masters degree from the Institut d'Optique (Paris-Sud, Orsay, France) he was awarded a PhD jointly by the Université Aix Marseille III, France, and the School of Physics, University of Sydney, Australia, in 2003. During his PhD, he co-developed the multipole method for photonic crystal fibres (PCFs). In 2003 he joined the ARC Centre for Ultrahigh bandwidth Devices for Optical Systems (CUDOS) at the University of Sydney, to work on modelling of photonic crystal fibres. In 2006 he was awarded an ARC fellowship for the theoretical study of solid core photonic bandgap fibres, followed by a continuing position as lecturer in 2009 and ARC Future Fellowship in 2010. He was Education and Training Director of CUDOS from 2007-2011 and became a Chief Investigator of CUDOS in 2011.

Dr Kuhlmei is the author of the "CUDOS MOF Utilities," the first free software dedicated to the simulation of PCFs, and co-author of the book "Foundations of Photonic Crystal Fibres," now in its second edition. He has authored and co-authored over 65 publications in refereed journals, has served as invited editor for Physica B and as secretary and public officer for the international ETOPIIM society (Electrical, Transport and Optical Properties of Inhomogeneous Media). He has served on organisation committees for several national and international conferences and workshops, including ETOPIIM 7 (Sydney, 2006) and Photonic Crystals: Fundamentals to Devices (Sydney 2005), and was program chair and co-chair for several local workshops and tutorial workshops.

### Key Areas of Research Contribution

Dr Kuhlmei's research interests cover optical fibres and metamaterials, and in particular how metamaterials can be integrated on a chip – an emerging topic at the intersection of three CUDOS flagship projects - Hybrid Integration, Functional Metamaterials and Nanoplasmonics. In 2011, he published several papers on metamaterial fabrication, led a study into metamaterial clad waveguides, and co-authored with CI McPhedran, CI Kivshar and Ilya V. Shadrivov a review paper on metamaterials in Nature Publishing Group's Asia Materials.



### Recognition

In 2011, Dr Kuhlmei was a recipient of the NSW Young Tall Poppy Science award by the Australian Institute of Policy and Science in recognition of his achievements. He was invited to visit the Max Planck Institute for the Science of Light in Erlangen by Professor Philip Russell and give one of the keynote presentations at Professor Russell's Group Workshop in Ringberg, Germany. He gave an invited talk at Metamaterials '2011: The Fifth International Congress on Advanced Electromagnetic Materials in Microwaves and Optics (Barcelona, October 2011).

