

CAREERS IN RESEARCH FORUM - POSTER SESSION

Sunday, 23 October 2005

19.00 - 20.30

State Room

CARP1 Optical Networking and Photonic Systems Research Activities at the University of Melbourne, Australia, A. Nirmalathas, R. S. Tucker and R. Evans, *University of Melbourne, Parkville, VIC, Australia*

We will present recent research activities in optical networking and photonic systems carried out at the two research centres at the University of Melbourne.

CARP2 Centre for Lasers and Applications, B. J. Orr, J. M. Dawes, M. J. Withford, D. W. Coutts, E. Goldys, G. E. Town, Y. He, and J. A. Piper, *Macquarie University, North Ryde, NSW, Australia*

Macquarie University's Centre for Lasers and Applications maintains an active programme of world-class investigations in laser physics, optics, photonics, optoelectronics and their wide-ranging applications.

CARP3 Western Australian Centre for Semiconductor Optoelectronics and Microsystems, L. Faraone, *University of Western Australia, Crawley, WA, Australia*

The WA Centre for Semiconductor Optoelectronics and Microsystems (WACSOM) incorporates a new nanofabrication facility and associated infrastructure and prototyping equipment. The Centre aims to be a world leading research and development centre delivering solutions, new knowledge and education in advanced optoelectronics and microsystems.

CARP4 The Australian Research Council Centre of Excellence for Quantum-Atom Optics, K. G. Baldwin, *Australian National University, Canberra, ACT, Australia*

The ARC Centre of Excellence for Quantum-Atom Optics investigates the quantum nature of multiple particle states of atoms and photons. It combines pre-eminent theoretical and experimental research groups in quantum and atom optics at the Australian National University, the University of Queensland and the Swinburne University of Technology.

CARP5 Research in Optoelectronics at Auckland University, J. D. Harvey, *University of Auckland, Auckland, New Zealand*

Research at Auckland in laser physics and its applications has been pursued for more than three decades. Recent efforts have been largely focussed on nonlinear fibre optics, and applications in very high speed optical communications.

CARP6 Compound Semiconductor Optoelectronics Research at the Australian National University, H. H. Tan and C. Jagadish, *Australian National University, Canberra, ACT, Australia*

The research activities in semiconductor optoelectronics at the Australian National University will be presented.

CARP7 Bandgap Engineering of Gallium Nitride Surface Quantum Wells, X. Zhang, A. L. Cai, J. F. Muth, D. Fothergill, *North Carolina State University, Raleigh, NC, USA*, J. C. Roberts, P. Rajagopal, J. W. Cook, E. L. Piner and K. J. Linthicum, *Nitronex Corporation, Raleigh, NC, USA*

A model describing efficient optical emission from thin Gallium Nitride capping layers on HEMT transistor structures is discussed. The origin of the emission is a surface quantum well with the vacuum forming one potential barrier.

CARP8 The Centre for Ultrahigh Bandwidth Devices for Optical Systems (CUDOS), B. J. Eggleton, *CUDOS, University of Sydney, NSW, Australia*

This poster reviews the scope and focus of the CUDOS Centre of Excellence, which links five Australian universities and research centres, focusing on nonlinear photonics for next generation optical communications and processing systems.

CARP9 Active Photonic Circuits and Biophotonics and Monash University, Australia, A. Lowery and M. Premaratne, *Monash University, Clayton, VIC, Australia*

We outline the research and development taking place at Monash University, Melbourne, Australia, in the fields of active photonic circuit design and simulation, and biophotonics.

CARP10 Overview of the Research at the Optical Fibre Technology Centre, S. Fleming, *University of Sydney, Eveleigh, NSW, Australia*

The Optical Fibre Technology Centre is an interdisciplinary research centre with state-of-the-art fibre fabrication facilities for world-leading research into new fibre types, fibre materials and fibre devices and their applications.

CARP11 Ultrafast Modelocked Semiconductor Laser - Techniques and Applications in Networking, Instrumentation and Signal Processing, P. J. Delfyett, S. Gee, S. Ozharar, F. Quinlan, K. Kim, S. Lee and W. Lee, *University of Central Florida, Orlando, FL, USA*

This presentation will report our recent results for ultrashort pulse generation, low timing jitter pulses for sampling and metrology, optical frequency combs for coherent communications, and the use of ultrafast semiconductor diode lasers for potential applications in nonthermal ablation and machining.