

# PROGRAM

## Wednesday, 8 December 2004

9:15 – 13:05

Start Time	Finish Time	Event	Page
		<b>Welcome and Opening Remarks</b> <i>Steele Building, Lecture Theatre 206</i>	
9:15	9:20	Aleksandar D. Rakic, Conference Chair, University of Queensland, Australia	
9:20	9:30	Michael Keniger, Executive Dean, Faculty of EPSA, University of Queensland, Australia	

		Keynote Session: Advances in Photonics	page
		<b>Chair: Chennupati Jagadish</b> , Australian National University, Australia	
9:30	10:15	<b>Keynote Address</b> <b>Advances in Active Photonic Integrated Circuits</b> , Larry A. Coldren, University of California, Santa Barbara, and Agility Communications Inc, USA	3
10:15	11:00	<b>Keynote Address</b> <b>Advances in Physics and Growth Technologies of Quantum Dots for Nanophotonic Devices</b> Yasuhiko Arakawa, The University of Tokyo, Japan	4

### 11:00 – 11:30 Morning Tea

		Oral Session W1: Quantum Dots	page
		<i>Steele Building, Lecture Theatre 206</i> Chair: Michael Gal, University of New South Wales, Australia	
11:30	12:00	<b>Invited Paper</b> <b>Epitaxial Nanostructures for Quantum Dot Lasers and Novel Optoelectronic Devices</b> , Dennis G. Deppe, The University of Texas at Austin, USA	5

		Oral Session W1: Quantum Dots	page	Oral Session W2: Microelectronic Processing	page
		<i>Steele Building, Lecture Theatre 206</i> <b>Chair: Michael Gal</b> , University of New South Wales, Australia		<i>Steele Building, Lecture Theatre 309</i> <b>Chair: Robert G. Elliman</b> , Australian National University, Australia	
12:05	12:20	<b>Growth and characterization of InAs/GaAs quantum dots grown by MOCVD</b> , K. Stewart, H. H. Tan, J. Wong-Leung, M. Buda and C. Jagadish, The Australian National University, Australia	6	<b>Choice of Silicon Etch Processes for Opto- and Microelectronic Device Fabrication using Inductively Coupled Plasmas</b> , C.C. Welch <sup>a</sup> , A.L.Goodyear, G.Ditmer, G.Tan, <sup>a</sup> Oxford Instruments Plasma Technology, England	10
12:20	12:35	<b>Effect of confinement layer growth temperature on cathodoluminescent properties of GaSb/GaAs quantum dot multilayer structures</b> K. Drozdowicz-Tomsia, E.M. Goldys, Motlan, Macquarie University, Australia	7	<b>Ion implantation of radioisotope tracers into InN thin films</b> , Heiko Timmers <sup>1)</sup> , Santosh K. Shrestha <sup>1)</sup> , Rakesh Dogra <sup>2)</sup> , Aidan P. Byrne <sup>2)</sup> , <sup>1)</sup> University of New South Wales at the Australian Defence Force Academy, Australia, <sup>2)</sup> Australian National University, Australia	11
12:35	12:50	<b>Comparison of Photocurrent Spectra of InGaAsN QD and InGaAs QW Laser Devices</b> Q. Gao, M. Buda, H. H. Tan, and C. Jagadish, The Australian National University, Australia	8	<b>Optical lithography using hard contact or a planar silver lens</b> , D. O. S. Melville, M.M Alkaisi and R. J. Blaikie, University of Canterbury, New Zealand	12
12:50	13:05	<b>Nucleation of Defect-free, Monolithic AlSb on Si using Self-Assembled Quantum Dots</b> , D.L. Huffaker, G. Balakrishnan, S. Huang, L.R. Dawson Y. –C. Xin and P. Conlin, University of New Mexico, USA	9	<b>Composite Dielectric/Metal Sidewall Barrier Cu/Porous Ultra Low-k Damascene Interconnects</b> , K. Prasad <sup>1)</sup> , Zhe Chen <sup>1)</sup> , N. Jiang <sup>2)</sup> , S.S. Su <sup>2)</sup> and C.Y. Li <sup>3)</sup> , <sup>1)</sup> Nanyang Technological University, Singapore, <sup>2)</sup> Institute of Micro-electronics, Singapore, <sup>3)</sup> Chartered Semiconductor Manufacturing Ltd, Singapore	13

### 13:05 – 14:05 Lunch

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14:05 – 16:10

		<b>Oral Session W3: High Speed Electron Devices</b>	page			page
		<i>Steele Building, Lecture Theatre 206</i>				
		<b>Chair: Richard Blaikie, University of Canterbury, New Zealand</b>				
14:05	14:35	<b>Invited Paper</b> <b>Electrical Magnetization Control in Ferromagnetic Semiconductors,</b> Hideo Ohno, Tohoku University and ERATO JST, Japan				14
14:35	15:05	<b>Invited Paper</b> <b>High Functionality in Room-Temperature Operating Single-Electron Transistors and Silicon Nanocrystal Memories,</b> Toshiro Hiramoto, University of Tokyo, Japan				15
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		<b>Chair: Richard Blaikie, University of Canterbury, New Zealand</b>		<b>Chair: Marian L. Majewski, University of Queensland, Australia</b>		
15:10	15:25	<b>Fabrication of 30nm T-gate High Electron Mobility Transistors using a bi-layer of PMMA and UVIII,</b> E. Boyd*, H. Zhou, H. McLelland, D.A.J. Moran, S. Thoms, I. G. Thayne, University of Glasgow, United Kingdom, *Now at University of Canterbury, New Zealand	16	<b>Use of a Small Lattice Mismatched Metamorphic Substrate to Extend the Wavelength Range of a Broadband, Polarization Insensitive Semiconductor Optical Amplifier,</b> J. A. Czaban, O. V. Hul'ko, D. A. Thompson, B. J. Robinson and J. G. Simmons, McMaster University, Canada		20
15:25	15:40	<b>AlGaIn/AlIn/GaN High Electron Mobility Transistors with Improved Carrier Transport,</b> G. Parish <sup>1</sup> , G. A. Umana-Membreno <sup>1</sup> , S. Jolley <sup>1</sup> , D. Buttari <sup>2</sup> , S.Keller <sup>2</sup> , B.D. Nener <sup>1</sup> , U.K. Mishra <sup>2</sup> , <sup>1</sup> The University of Western Australia, Australia, <sup>2</sup> University of California, Santa Barbara, USA	17	<b>Influence Of Converter Induced Noise And Additive Crosstalk On The Performance Of SOA Wavelength Converters,</b> B. C. Sarker and S. P. Majumder, Gunma University, Japan		21
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16:10	16:40	<b>Afternoon Tea</b>				

**Wednesday, 8 December 2004**  
**16:40 – 18:40**

**Poster Session 1**

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- Tracking energy transfer mechanisms in Er-doped crystalline and nanocrystalline silicon**, M. Forcales<sup>1</sup> and T. Gregorkiewicz<sup>2</sup>, <sup>1</sup>Australian National University, Australia, <sup>2</sup>University of Amsterdam, The Netherlands **24**
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- Enhanced  $f_{max}$  and low base resistance in SiGe HBT with Nickel Silicidation**, Hyun-Chul Bae, Sang-Hoon Kim, Young-Joo Song, Sang-Heung Lee, Ja-Yol Lee and Jin-Young Kang, ETRI, South Korea **26**
- Low Temperature Ferromagnetism of GaMnN Grown on 6H-SiC(0001) by Molecular Beam Epitaxy**, X.M. Cai<sup>a</sup>, A.B. Djurišić<sup>a</sup>, M.H. Xie<sup>a</sup>, H. Liu<sup>b</sup>, X.X. Zhang<sup>b</sup>, <sup>a</sup>The University of Hong Kong, Hong Kong, <sup>b</sup>Hong Kong University of Science and Technology, Hong Kong **27**
- Electrical and optical analysis of tris(8hydroxyquinoline) aluminium based microcavity organic light emitting diode (MOLED)**, \*J.Chan, \*A.D.Rakic, \*Y. T.Yeow, \*\*A.B. Djuricic, \*The University of Queensland, Australia, \*\*University of Hong Kong, Hong Kong **28**
- The effect of thermal annealing on the properties of indium tin oxide thin films**, R. X. Wang, C. D. Beling, S. Fung, A. B. Djurišić, C. C. Ling, C. Kwong, and S. Li, The University of Hong Kong, Hong Kong **29**
- Pd-porous GaAs Schottky contact for hydrogen sensing application at room temperature**, A. Salehi, A. Nikfarjam, D. Jamshidi, K.N. Toosi University of Technology, Iran **30**
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- Planar Array Waveguide Auto-Alignment based on Adaptive Evolution Optimization Method**, Kreangsak Korn-Suthathipkul\*, Sompong Wiset-Phanichkij\*\*, Kobchai Dejhan\*\* and Krit Angkeaw\*\*\*, \*Fabrinet Co. Ltd., Thailand, \*\* KMITL, Thailand, \*\*\*Siam University, Thailand **35**
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- Proton irradiation induced intermixing in In<sub>x</sub>Ga<sub>1-x</sub>As/InP Quantum wells**, P.L. Gareso, H. H. Tan, J. Wong-Leung and C. Jagadish, The Australian National University, Australia. L. V. Dao, Swinburne University of Technology, Australia. **41**

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