

Symposium M

Photonic Materials and Devices

Sponsors : Agilent Technologies Singapore (Sales) Pte Ltd

4 July 2005

07:30 - 08:30	Registration
08:30 - 09:45	Opening Ceremony
09:45 - 10:30	Plenary 1: <i>Nobel Laureate - Roald Hoffmann</i> <i>"Waiting to be Made"</i>
10:30 - 11:00	Coffee Break

Technical Session 1 (Parallel Session MA-1) - QWI

Session Chair: C. K. Chia

MA-1-IN1 (Invited A1)	11:00 - 11:30	The Role of Monolithic Integration in Advanced Laser Products <i>John H. Marsh</i>
MA-1-OR1	11:30 - 11:45	Analysis of Inductively Coupled Argon Plasma Enhanced Quantum Well Intermixing Process for Multiple Bandgap Implementation <i>T. Mei, D. Nie, H. S. Djie, M. K. Chin, X. H. Tang, Y.X. Wang</i>
MA-1-OR2	11:45 - 12:00	InGaAs/GaAs Quantum Dot Intermixing using Arsenic and Phosphorus Ion Implantation Induced Disorder <i>B. S. Ooi, H. S. Djie, V. Aimez</i>
MA-1-OR3	12:00 - 12:15	Plasma Induced Quantum Well Intermixing for Universal High-density Photonic Integration <i>H. S. Djie, T. Mei</i>
MA-1-OR4	12:15 - 12:30	Spatially Resolved Photoluminescence and Raman Spectroscopy of Bandgap Gratings Fabricated in GAAS/ALAS Superlattice Waveguide using Quantum Well Intermixing <i>Amr Helmy, J. S. Aitchison, J. H. Marsh, A. C. Bryce</i>
MA-1-OR5	12:30 - 12:45	Longitudinal Mode Grouping in InGaAsP/InP Ridge Waveguide Laser and the Elimination using Quantum Well Intermixing <i>J. H. Teng, J. R. Dong, S. J. Chua, R. Yin, B. C. Foo, B. Z. Wang, Y. J. Wang</i>
	12:30 - 14:00	Lunch

Technical Session 2 (Parallel Session MA-2) - Quantum Dots

Session Chair: B. S. Ooi

MA-2-IN2 (Invited A2)	14:00 - 14:30	InAs/InGaAs Quantum Dot Lasers <i>Mark Hopkinson, Hui-Yun Liu, Richard Hogg, Kris Groom</i>
MA-2-IN3 (Invited A3)	14:30 - 15:00	Quantum Dots for Integrated Optoelectronics <i>C. Jagadish, K. Stewart, S. Mokkalapati, S. Barik, J. Wong-Leung, L. Fu, M. Buda, Q. Gao, P. Lever, H.H. Tan</i>
MA-2-OR6	15:15 - 15:30	Synthesis of Highly Luminescent CdSe Quantum Dots at Room Temperature and their Characterization <i>Rajan Jose, Zhivko Zhelev, Yoshinobu Baba, Mitsuru Ishikawa, Nurbosyn U. Zhanpeisov, Hiroshi Fukumura</i>
MA-2-OR7	15:30 - 15:45	Superluminescent Diodes using Quantum Dots Superlattice <i>H. S. Djie, C. E. Dimas, B. S. Ooi</i>
MA-2-OR8	15:45 - 16:00	Bandgap Engineering in Semiconductor Quantum Dots <i>C.K. Chia, J.R. Dong, S.J. Chua, S. Tripathy</i>
MA-2-OR9	16:00 - 16:15	Nanostructures Grown on GaAs (100) Vicinal Substrates by MOCVD <i>Jian Rong Dong, Benzhong Wang, Soo-Jin Chua, Yanjun Wang</i>
MA-2-OR10	15:00 - 15:15	Probing Intermixing in InAs/GaAs Quantum Dots using Low-temperature Micro-Raman Spectroscopy <i>S. Tripathy, C.K. Chia, S.J. Chua</i>
	16:30 - 18:00	Coffee Break / Bus to UCC
	18:00 - 19:00	NUS Centennial Public Lecture 1 <i>Nobel Laureate - Steven Chu</i>
	19:00 - 20:00	NUS Centennial Public Lecture 2 <i>Nobel Laureate - Alan MacDiarmid</i>
	20:00 - 20:30	Bus to Hotels

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5 July 2005

07:30 - 08:30	Registration & Setting up of Posters at Gallery
08:30 - 09:15	Plenary 2: <i>Nobel Laureate - Steven Chu</i> <i>"Miniaturization in biology"</i>
09:15 - 10:00	Plenary 3: <i>Subra Suresh</i> <i>"Materials Science Approaches for Cell Biology and Human Disease State"</i>
10:00 - 10:30	Coffee Break

Technical Session 3 (Parallel Session MA-3) - Photonic Crystals

Session Chair: M. K. Chin

MA-3-IN4 (Invited A4)	10:30 - 11:00	Nonlinear Photonic Crystals <i>Aref Chowdhury</i>
MA-3-IN5 (Invited A5)	11:00 - 11:30	Combined Wet and Dry Etching for High-Precision Silicon Photonic Bandgap Devices <i>Eric Yeatman, Ariel Lipson</i>
MA-3-OR11	11:30 - 11:45	Fabrication of Colloidal Photonic Crystal Heterostructures Using a Horizontal Deposition Method <i>George X. S. Zhao, Qingfeng Yan, Zuocheng Zhou</i>
MA-3-OR12	11:45 - 12:00	Organic Opal and Ultrafast Optical Switching <i>Daozhong Zhang, Yuanhao Liu, Xiaoyong Hu, Bingying Cheng</i>
MA-3-OR13	12:00 - 12:15	Fabrication of High Aspect Ratio Near Infrared Photonic Band-gap Structures Using Deep X-ray Lithography <i>Beng Tiam Saw, Herbert O. Moser, Jong Ren Kong, Shahrain bin Mahmood, Le Nguyen Binh, Oliver Wilhelmi</i>
MA-3-OR14	12:15 - 12:30	New Si-based Waveguide with Photonic Band Gap Dielectric Cladding Layers <i>Xiaoman Duan, Yasha Yi, Shoji Akiyama, Jessica Sandland, Jurgen Michel, Lionel Kimerling</i>
	12:30 - 14:00	Lunch

Technical Session 4 (Parallel Session MA-4) - Nanostructures

Session Chair: X. Zhang

MA-4-IN6 (Invited A6)	14:00 - 14:30	All-optical Devices Based on Ultrafast Phenomena in Quantum Nano Structures <i>Osamu Wada</i>
MA-4-OR15	14:30 - 14:45	Light Emitting Properties and Applications of Si Nanoclusters Embedded in Silicon Nitride <i>Hei Wong, V. Filip, C. K. Wong, P. S. Chung</i>
MA-4-OR16	14:45 - 15:00	Investigation on the Formation of Germanium Nanocrystals in Thick Silicon Oxide Matrix on Silicon Substrate under Rapid Thermal Annealing <i>Choi Wee Kiong, Vincent Ho, Vivian Ng, WK Chim, Y.W. Ho, S.P. Ng</i>
MA-4-OR17	15:00 - 15:15	High Pressure Raman and Photoluminescence Studies of ZnxCd1-xSe Nanocrystals <i>Zexiang Shen, Zhenhua Ni, Haiming Fan, Hui Zang, Mingyong Han, Dongfei Li</i>
MA-4-OR18	15:15 - 15:30	A Study of Photoluminescence from SiO ₂ Films Containing Nanocrystals <i>Yang Liu, Tupei Chen, H. W. Lau, L. Ding, O. K. Tan, Y. Q. Fu</i>
MA-4-OR19	15:30 - 15:45	Fabrication of 2D Silica Nanostructures using Colloidal Crystal Templates <i>Benzhong Wang, Soo-Jin Chua, Jinghua Teng</i>
MA-4-OR20	15:45 - 16:00	(WITHDRAWN) Control of GaN Nano-wires Synthesis Condition by HVPE Method <i>T. I. Shin, H. J. Lee, D. H. Yoon</i>
MA-4-OR21	16:00 - 16:15	Polychromatic and White Light Generations with CdSe Nano-crystals Embedded on InGaN/GaN Quantum Wells <i>Dong-Ming Yeh, Horng-Shyang Chen, Chih-Feng Lu, C. C. Yang, Chih-Min Chuang, Wei-Fang Su</i>
	16:30 - 18:00	Coffee Break / Bus to UCC
	18:00 - 19:00	NUS Centennial Public Lecture 3 <i>Nobel Laureate - Carl Wieman</i>
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6 July 2005

07:30 - 08:30	Registration & Setting up / Removal of Posters at Gallery
08:30 - 09:15	Plenary 4: <i>Nobel Laureate - Alan MacDiarmid</i> <i>"Electronic Polymers: Novel Materials for the 21st Century"</i>
09:15 - 10:00	Plenary 5: <i>C.N.R. Rao</i> <i>"Chemical Routes to Nanomaterials"</i>
10:00 - 10:30	Coffee Break

Technical Session 5 (Parallel Session MA-5) - Nitride Materials

Session Chair: B. S. Ooi

MA-5-IN7 (Invited A7)	10:30 - 11:00	Materials Properties of Dilute Nitrides: Ga(In)NAs and Ga(In)NP <i>Charles W. Tu, W.M. Chen, I.A. Buyanova, J.S. Hwang</i>
MA-5-IN8 (Invited A8)	11:00 - 11:30	Study of Ultrafast Carrier Dynamics in Clustered InGaN with Femtosecond Pump-probe Experiment <i>C. C. Yang, Hsiang-Chen Wang, Yen-Cheng Lu, Cheng-Yen Chen</i>
MA-5-OR22	11:30 - 11:45	Effect of Rapid Thermal Annealing on the Properties of GaNAs Thin Films Grown by Molecular Beam Epitaxy <i>H. F. Liu, N. Xiang, W. L. Lim, S. J. Chua</i>
MA-5-OR23	11:45 - 12:00	Optical Properties of InN Films Grown by Molecular Beam Epitaxy <i>J. B. Wang, Z. F. Li, P. P. Chen, W. Lu</i>
MA-5-OR24	12:00 - 12:15	Effects of the Intended Interfacial Layers on Photon Emission Property and Carrier Dynamics in InGaN/GaN Quantum-well Light-emitting Diodes <i>Chi-Feng Huang, Cheng-Chieh Huang, Tsung-Yi Tang, Yung-Chen Cheng, Dong-Ming Yeh, C. C. Yang</i>
MA-5-OR25	12:15 - 12:30	Thermal Analysis of GaN-based Laser Diode <i>Moo Whan Shin, W. J. Hwang, T. H. Lee, O. H. Nam, H. K. Kim, J. S. Kwak, Y. J. Park</i>
	12:30 - 14:00	Lunch / Theme Lecture by Denis Fichou <i>"Building-up Supramolecular Self-Assemblies on Surfaces: Towards Molecular Nanoelectronics"</i>
	14:00 – 16:30	Poster Session

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7 July 2005

07:30 - 08:30	Removal of Posters at Gallery
08:30 - 09:15	Plenary 6: <i>Nobel Laureate - Carl Wieman</i> <i>"Dilute gas BEC; A Very Novel Quantum Material"</i>
09:15 - 10:00	Plenary 7: <i>Bernard Raveau</i> <i>"The Future of Oxides as Functional Materials"</i>
10:00 - 10:30	Coffee Break

Technical Session 7A - Photonic Devices and Systems

Session Chair: M. K. Chin

MA-7-IN9 (Invited A9)	10:30 - 11:00	Fiber to the Home or x: An Overview of Technologies and Trends <i>Wei-Ping Huang</i>
MA-7-IN10 (Invited A10)	11:00 - 11:30	Lithium Niobate Optical Modulators: Devices and Applications <i>Le Nguyen Binh</i>
MA-7-IN11 (Invited A11)	11:30 - 12:00	Monolithically Integrated Twin Ring Diode Lasers for Rotation Sensing Applications <i>Marek Osinski, Hongjun Cao, Chiyu Liu, Petr G. Eliseev</i>
MA-7-OR26	12:00 - 12:15	Mode Characteristics for Optical Microsquare Resonators <i>Yong-Zhen Huang, Qin Chen, Wei-Hua Guo, Li-Juan Yu</i>
MA-7-OR27	12:15 - 12:30	Synthesis of Luminescence Semiconducting Nano Powders by Microwave Irradiation Method for Optoelectronics Devices <i>Saaminathan V, Manjulavalli TE, Sudhgar P, Vadivel Murugan A, Satyanarayana Reddy A</i>
	12:30 - 14:00	Lunch / Theme Lecture by Teruo Okano <i>"Intelligent Surfaces for Cell Sheet Engineering"</i>

Technical Session 8A - Semiconductor Epitaxy and Heterostructure

Session Chair: C. K. Chia

- MA-8-IN12** 14:00 - 14:30 Optical Properties of Sb-assisted MBE Growth of Highly-strained InGa(N)As Quantum Wells
(Invited A12) *De-Sheng Jiang, Yu-Hua Qu, Hai-Qiao Ni, Dong-Hai Wu, Zhi-Chuan Niu*
- MA-8-IN13** 14:30 - 15:00 III-V Metamorphic Layers: Growth and Photonic Device Applications
(Invited A13) *D. A. Thompson*
- MA-8-OR28** 15:00 - 15:15 Al-free 808nm High Power Lasers grown by MOCVD using TBP and TBA in Pure N₂ Ambient
Xiaohong Tang, Baolin Zhang, Baoxue Bo
- MA-8-OR29** 15:15 - 15:30 Ultra-low-pressure MOCVD Growth on Taper-masked Pattern Substrates for the Preparation of EML
Q. Zhao
- MA-8-OR30** 15:30 - 15:45 High Quality AlGaIn/GaN Heterostructure Grown on Silicon Substrate by Metalorganic Chemical Vapor Deposition
J.X. Zhang, Y. Qu, Y.Z. Chen, A. Uddin, P. Chen, S.J. Chua, Shu Yuan
- MA-8-OR31** 15:45 - 16:00 Study and Optimization of Inductively Coupled Plasma Etching of InP using CH₄/H₂ and Cl₂/CH₄/H₂ under Room Temperature
Chee Wei Lee, Mee Koy Chin, Akkipeddi Ramam
- 16:00 – 16:30 Coffee Break

Technical Session 9A - Optoelectronics and Heterogeneous Integration

Session Chair: J. Teng

- MA-9-IN14** 16:30 - 17:00 Integrated Optoelectronics
(Invited A14) *Eugene A. Fitzgerald*
- MA-9-IN15** 17:00 - 17:30 Monolithic Intergration of III-P and III-As Device with Si using Lattice Engineering
(Invited A15) *Steven A. Ringel*
- MA-9-OR32** 17:30 - 17:45 Monolithically Integrated Laser Diode and Electroabsorption Modulator with Dual-waveguide Spot-size Converter Output
Lianping Hou
- MA-9-OR33** 17:45 - 18:00 Directional Coupler Devices based on Single-Mode and Multi-Mode Ridge Waveguides
Mee Koy Chin, Chee Wei Lee, Stevanus Darmawan, Shuh Ying Lee
- MA-9-OR34** 18:00 - 18:15 Infrared Absorption and Current-Voltage Characteristic of GaAs/AlGaAs Multiple Quantum Wells Grown on GaAs (111)A Substrate by Solid Source Molecular Beam Epitaxy
T. Mei, H. Li, D. H. Zhang, W. J. Fan, S. F. Yoon, W. K. Loke
- MA-9-OR35** 18:15 - 18:30 Magnetic and Magneto-Optic Properties of the Diluted Magnetic Semiconductor Mn_xCd_{1-x}In₂Te₄ Crystals Grown by Bridgman Method
Wanqi Jie, Yongqin Chang, Weijun An

Organised by: Materials Research Society Of Singapore

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8 July 2005

08:30 - 09:15	Plenary 8: <i>Masuo Aizawa</i> “Bio-Nanotechnology/Nano-Biotechnology Challenges for Intelligent Materials and Systems”
09:15 - 10:00	Plenary 9: <i>Chenming Hu</i> “The Roles of New Materials in Future CMOS Technology”
10:00 - 10:30	Coffee Break

Technical Session 10A - Optoelectronics

Session Chair: J. Teng

MA-10-IN16 10:30 - 11:00 (Invited A16)	Low Noise Avalanche Photodiodes <i>J. P. R. David</i>
MA-10-IN17 11:00 - 11:30 (Invited A17)	Infrared Laser Diode System for Paper Cutting in Digital Printing Applications <i>O. Acher, H. Pages, H. Piombini</i>
MA-10-OR36 11:30 - 11:45	[WITHDRAWN] The Effect of Depletion Field on Multiplication Noise in Thin InAlAs APDs <i>Kok Keong Liaw, Kan Yeep Choo, Duu Sheng Ong</i>
MA-10-OR37 11:45 - 12:00	Design Parameters of Low Noise GaAs-based Avalanche Photodiodes <i>B. K. Ng, J. P. R. David, M. Hopkinson</i>
MA-10-OR38 12:00 - 12:15	Effect of Temperature and Inhomogeneity on the Yield of PtSi-n-Si Photodetectors <i>Azzouz Sellai, Paul Dawson</i>
MA-10-OR39 12:15 - 12:30	Thermal Resistance Measurement of LED Package with Multi-chip <i>Moo Whan Shin, Lan Kim, Woong Joon Hwang</i>
12:30 - 14:00	Lunch

Technical Session 11A - Nonlinear Materials

Session Chair: D. Y. Yang

- MA-11-OR40** 14:00 - 14:15 Formation of Nanoimprinting Mould through Use of Nanosphere Lithography
Benzhong Wang, Ao Chen, Soo-Jin Chua
- MA-11-OR41** 14:15 - 14:30 Terahertz Generation in Czochralski-grown Periodically Poled Mg:Y:LiNbO₃ via Optical Rectification
Guohong Ma, S.-H. Tang, G. Kh. Kitaeva
- MA-11-OR42** 14:30 - 14:45 Preparation and Characterization of Second-Order Nonlinear Optical Fluorinated Polyimide / Inorganic Composites
Guoyuan Li, Li Ren, Xiao Hu, Hong Xie
- MA-11-OR43** 14:45 - 15:00 Ultrafast and Large Third-order Nonlinear Optical Properties of CdS Nanocrystals in Polymeric Film
Jun He, Wei Ji, Guohong Ma, Sing-Hai Tang, Eric Siu-Wai Kong, Shue-Yin Chow, Xin-Hai Zhang, Zi-Le Hua, Jian-Lin Shi
- MA-11-OR44** 15:00 - 15:15 Thermal Management for Frequency Conversion using Periodically Poled LN and LT
Kenji Kitamura, S. Takekawa, S. Kurimura, O. Louchev
- MA-11-OR45** 15:15 - 15:30 GaAs Wafer for Passive Mode Locking and Compression of Energetic Q-switched Pulses
D. Y. Tang, J. Kong, S.P. Ng
- MA-11-OR46** 15:30 - 15:45 Effect of Etching on the Characteristics of a Fiber-based Acousto-Optic Device
Sutharsanan Veeriah, Faidz Abd. Rahman, Phua Yeong Nan, Vivekanand Mishra

End of Symposium

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09:45 - 10:30	Plenary 1: Nobel Laureate - Roald Hoffmann "Waiting to be Made"
10:30 - 11:00	Coffee Break

Technical Session 1 (Parallel Session MB-1) - OLED-I

Session Chair: Furong Zhou

MB-1-OR1	11:00 - 11:15	Dependence of Moisture Diffusivity on OLED Structure and Defect Diameter in Dark Spot Growth Rates <i>X.Y. Zhao, S.J.Chua, L. Ke</i>
MB-1-OR2	11:15 - 11:30	Nickel Doped Nanocomposite Film for Organic Light Emitting Diodes (OLEDs) Application <i>W. Y. Tong, C. C. Oey, A. B. Djurišić, Z. T. Liu, W. K. Chan, P. C. Chui</i>
MB-1-OR3	11:30 - 11:45	The Role of CuPC in Alq3 based Organic Light-emitting Devices <i>X W Sun, Y. Divayana, B J Chen, T K S Wong, X Hu</i>
MB-1-OR4	11:45 - 12:00	Enhanced Performance of Single Layer Light-emitting Diodes based on Star-shaped conjugated Oligofluorenes Blends <i>Wei Huang, Min Wang, Meng Wu, Wenyong Lai</i>
MB-1-OR5	12:00 - 12:15	Performance Enhancement of Organic Light-emitting Diode by Heat Treatment <i>S. T. Lee, S. W. Tong, H. Y. Sun, C. S. Lee</i>
MB-1-OR6	12:15 - 12:30	Nanostructured Organic Light-emitting Diodes <i>Benzhong Wang, Lin Ke and Soo Jin Chua</i>
MB-1-OR7	12:30 - 12:45	Electric Field and Temperature Dependence of Hole Mobility in Light Emitting Diodes Based on poly [2-methoxy-5-(2-ethylhexoxy)-1,4-phenylene vinylene] <i>Amit Kumar, P. K. Bhatnagar, P. C. Mathur, Sandip Sen Gupta, Jayant Kumar</i>
	12:30 - 14:00	Lunch

Technical Session 2 (Parallel Session MB-2) - OLED-II

Session Chair: Terence Wong

MB-2-IN1 (Invited B1)	14:00 - 14:30	Anode modification for enhancing OLED performance <i>Furong Zhu</i>
MB-2-OR8	15:45 - 16:00	Self Assembly of CdSe/ZnS Quantum Dots for Trilayer Hybrid Organic/Inorganic Light Emitting Devices <i>Choon Chong Teo, Ashraf Uddin</i>
MB-2-OR9	16:00 - 16:15	The Relationship Between Device Performance and Structural and Micro-environmental Disorder <i>Lin Ke, Ronald Cai, Soo Jin Chua</i>
MB-2-OR10	14:30 - 14:45	Study of Emitting Assist Dopant: 5,6,11,12-tetraphenylnaphthacene (rubrene) in Organic Light Emitting Diodes <i>Chea Beng Lee, Ashraf Uddin, Choon Chong Teo, Javier Hong Seng Wong</i>
MB-2-OR11	14:45 - 15:00	Interfacial Effects in Organic Field-Effect Transistors <i>Th. Birfendra Singh, N. Marjanovic, G. J. Matt, S. Günes, N. S. Sariciftci, A. Montaigne Ramil, H. Sitter, R. Schwödiauer, A. Andreev</i>
MB-2-OR12	15:00 - 15:15	[WITHDRAWN] Laser Ablation Processes in OLED Device Fabrication <i>Eric Ou</i>
MB-2-OR13	15:15 - 15:30	Ter(9-(4'-(2''-ethylhexyloxy)phenyl)-9-pyrenylfluorene)-A Stable Blue Emitter with High Efficiency and Improved Charge Injection <i>Wei Huang, Feng Liu, Ling-Hai Xie, Sheng-Biao Li, Dao-Ben Zhu</i>
MB-2-OR14	15:30 - 15:45	Improving the Electronic Properties of OLED Materials through Structural Modification <i>Ye Tao, Jianping Lu, Man Shing Wong and Zhong Hui Li</i>
	16:30 - 18:00	Coffee Break / Bus to UCC
	18:00 - 19:00	NUS Centennial Public Lecture 1 <i>Nobel Laureate - Steven Chu</i>
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10:00 - 10:30	Coffee Break

Technical Session 3 (Parallel Session MB-3) - Polymers and Organics - I

Session Chair: Terence Wong

MB-3-IN2 (Invited B2)	10:30 - 11:00	Polymer Devices for Photonic Applications <i>E. Y. B. Pun, W. H. Wong</i>
MB-3-OR15	11:00 - 11:15	Effect of Monomer Functionality on the Performance of Holographic Transmission Gratings Recorded on Polymer Dispersed Liquid Crystals <i>Mousumi de Sarkar, Gregory P. Crawford</i>
MB-3-OR16	11:15 - 11:30	Cycloalkylidene Fulgides: Synthesis and Comparison of Photochromic Properties <i>Wayne Wei-Woon Lee, Teck-Peng Loh, Leong-Ming Gan</i>
MB-3-OR17	11:30 - 11:45	A Focus-switchable Lens made of Polymer-Liquid Crystal Composit <i>X W Sun, Y J Liu</i>
MB-3-OR18	11:45 - 12:00	Gold Nanoparticles as Printable Conductors in Flexible Optoelectronics <i>S. Sivaramakrishnan, L.L Chua, P.K.H. Ho</i>
MB-3-OR19	12:00 - 12:15	Effect of Doping on Transport and Optical Properties of Carriers in Alq3 <i>Ashraf Uddin, C. B. Lee, X. Hu, T. K. S. Wong and S. P. Sun</i>
MB-3-OR20	12:15 - 12:30	Tunable Optical Properties of Polycyanurate Thin Films <i>Lei Zhao, Hu Xiao</i>
	12:30 - 14:00	Lunch

Technical Session 4 (Parallel Session MB-4) - Polymers and Organics - II

Session Chair: Hu Xiao

MB-4-OR21	14:00 - 14:15	Optical Behaviors of Cholesteric Liquid Crystal Cells with Novel Chiral Compounds <i>Jui-Hsiang Liu, Po-Chih Yang</i>
MB-4-OR22	14:15 - 14:30	Performance and Photostability of Rh-B dye in TEOS and TMOS <i>Devendra Mohan, Meenakshi Sharma, R.D. Singh</i>
MB-4-OR23	14:30 - 14:45	Ink Jet Printability and Film Uniformity of Polymer Solutions <i>Wei Huang, Meng Wang, Ruijie Wang, Qi Wang</i>
MB-4-OR24	14:45 - 15:00	A New Type Functional Material Containing (σ - π)-conjugated Frame <i>Wei-Huang, Weizhi-Wang</i>
MB-4-OR25	15:00 - 15:15	The Relationships of Properties and Molecular Weight of Containning Cyano PPV Derivates <i>Wei-Huang, Sheng-biao Li, Xu-hui Zhu, Lei Zhao, Chao Tang</i>
MB-4-OR26	15:15 - 15:30	Tuning of Optical properties of Pyridine incorporated Conjugated Polymers <i>Muthalagu Vetrichelvan, Suresh Valiyaveetil</i>
MB-4-OR27	15:30 - 15:45	Effect of Composition and Annealing on Polymer/Fullerene based Organic Solar Cells <i>Sukhbinder Singh Rait, Shipra Kashyap, P.K.Bhatnagar, P.C.Mathur</i>
MB-4-OR28	15:45 - 16:00	Organic-inorganic Bulk Heterojunction Designs for Efficient Photovoltaic Cells <i>Thelese Foong, Xiao, Hu, Alan Sellinger</i>
	16:30 - 18:00	Coffee Break / Bus to UCC
	18:00 - 19:00	NUS Centennial Public Lecture 3 <i>Nobel Laureate - Carl Wieman</i>
	19:00 - 20:00	NUS Centennial Public Lecture 4 <i>Nobel Laureate - Roald Hoffmann</i>
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09:15 - 10:00	Plenary 5: <i>C.N.R. Rao</i> "Chemical Routes to Nanomaterials"
10:00 - 10:30	Coffee Break

Technical Session 5 (Parallel Session MB-5) - Silicon and Silica Materials

Session Chair: K. Pita

MB-5-INV3	10:30 - 11:00	Title: TBA <i>Denis Barbier, Teem Photonics, France</i>
(invited B3)		
MB-5-OR29	10:30 - 10:45	Low-Loss Optical Waveguides using Silicon Oxynitride Prepared by Thermal Oxidation of Silicon-Rich Silicon Nitride <i>Hei Wong, C. K. Wong</i>
MB-5-OR30	10:45 - 11:00	Dielectric Functions of SiO ₂ Films Embedded with various distributions of Silicon Nanocrystals <i>L. Ding, T. P. Chen, C. Y. Ng, Y. Liu</i>
MB-5-OR31	11:00 - 11:15	Modeling of Pulsed Laser Deposited Phosphorus Doped Carbon/ p-Silicon Photovoltaic Cell <i>Md. Zahurul Islam, Mahbub Alam, Sharif M Mominuzzaman, Mohamad Rusop, Tetsuo Soga, Takashi Jimbo, M. Umeno</i>
MB-5-OR32	11:15 - 11:30	Si/SiGe:Er/Si Structures for Laser Realization: Theoretical Analysis and Luminescent Studies <i>M. Stepikhova, L. Krasilnikova, Z. Krasilnik, D. Zhigunov, V. Timoshenko, P. Kashkarov, V. Shengurov, V. Chalkov, S. Svetlov</i>
MB-5-OR33	11:30 - 11:45	Non Radiative Process in Sulfide Glasses <i>Jurdyc, Truong, Jacquier, Leperson, Nazabal, Adam</i>
MB-5-OR34	11: 45 - 12:00	Novel Light Trapping for High-efficiency Solar Cells Using Textured Photonic Crystals <i>Xiaoman Duan, Lirong Zeng, Yasha Yi, Ching-yin Hong, Lionel Kimerling</i>
MB-5-OR35	12:00 - 12:15	Photosensitivity of Sol-gel prepared Inorganic xB ₂ O ₃ :20GeO ₂ :(80-x)SiO ₂ System under Various Boron Concentration <i>Rajni Pal, Kantisara Pita</i>
MB-5-OR36	12:15 - 12:30	Fabrication of Optical Waveguides using Proton Beam Writing <i>Andrew Bettiol, Soma Venugopal Rao, Sum Tze Chien, Jeroen van Kan, Frank Watt</i>
MB-5-OR37	12:30 - 12:45	Planar Waveguide Devices based on Sol-gel Derived Photo-patternable Hybrid Materials <i>Xiao Zhang, Min Qian, Haijing Lu, Boon Keng Lok, Kuang Yong David Low, Chee Wai Albert Lu, Jackson Low, Zhongxiang Shen</i>

12:30 - 14:00 Lunch / Theme Lecture by Denis Fichou
"Building-up Supramolecular Self-Assemblies on Surfaces: Towards Molecular Nanoelectronics"

14:00 – 16:30 **Poster Session**

SYMPOSIUM M, Poster Session

Date: Wednesday, 6 July 2005

Time: 14:00 – 16:30

- M-6-PO1** **[WITHDRAWN]** Improvement of the Coupling Efficiency of a Hemispherically Lensed Asymmetric Tapered-Core Fiber using Etching Technique
Kumaran Sambanthan, Faidz Abdul Rahman
- M-6-PO2** Studies on Optical Properties of Transition Metal Diselenide Single Crystals
Rajiv Vaidya, S. G. Patel, A. R. Jani, B. K. Godwal
- M-6-PO3** Luminescence Properties of Nano Cd_{1-x}Zn_xS:Ag by Reverse Micelle Technique
N. Karar, Harish Chander, Muthres Jaiswal, S. K. Halder
- M-6-PO4** Growth and Characterization of Rhenium Intercalated/Doped Tungsten Diselenide Single Crystal by Vapour Phase Technique
Milind. P. Deshpande, Jignesh B. Patel, Rajiv Vaidya, Manoj. N. Parmar, G.K. Solanki
- M-6-PO5** Preparation and Optical Properties of Spherical ZnSe by Hydrothermal Method
Hui Huang, Hua Gong, Kaiping Liu, Mingqiang Wang
- M-6-PO6** Preparation and CO Gas Sensing Properties of Nanocrystalline SnO₂ Thin Films deposited by PECVD
Hui Huang, Y.C. Lee, O.K. Tan, M.S. Tse
- M-6-PO7** Effects of Annealing Temperature and Duration on Growth of Germanium Nanocrystals in Trilayer Memory Structures
Wee Kiong Choi, Vincent Ho, W.K. Chim, Y.L. Foo, C.W. Soo
- M-6-PO8** Minimization of Power Loss and Associated Non-linearities in Optical Fiber – A Model Study
Sunita Sharma, S.K.Ghoshal, Devendra Mohan
- M-6-PO9** Fabrication of Photonic Crystals from Colloidal Assembly
Xiang Yang Liu, Keqin Zhang
- M-6-PO10** Raman Scattering of Single Crystal CdS Nanowires under High Pressure
Haiming Fan, Zhenhua Ni, Zexiang Shen, Anlian Pan, Bingsuo Zou
- M-6-PO11** Characterization of GaAs/AlGaAs based Multi Quantum Well Structures
M.Thirumavalavan, S Tripathy, Sameer Shah, Sundararajan B, A.T. Kalghatgi, S.B. Krupanidhi
- M-6-PO12** Ohmic Contacts to Both p- and n- GaN by Oxygen Ambient Annealing
J. H. Teng, S. J. Chua, P. Chen, S. L. Teo, M. Y. Lai, N. Yakovlev, Z. Chen, C. B. Soh, B. C. Foo
- M-6-PO13** Optical Damage Resistance of ZnO and Nd₂O₃ Co-doped Stoichiometric LiNbO₃ Fiber Single Crystal
H. J. Lee, T. I. Shin, D. H. Yoon
- M-6-PO14** DC-drift Suppression through Low Contaminations into the Oxide Buffer Layer on the Ti:LiNbO₃ Waveguide Chip
D.H. Yoon, D. S. Kim, W. S. Yang, W. K. Kim, H. Y. Lee
- M-6-PO15** Annealing Effects on Properties of Aluminium Oxide Thin Films Prepared by Off-plane Filtered Cathodic Vacuum Arc System
Zhiwei Zhao, Beng Kang Tay

- M-6-PO16** Effect of Erbium Concentration on the Structure and Optical Properties of Er:Al₂O₃ Thin Films
K.G.Gopchandran, Geo Rajan, S.Sankar, V.P.Mahadevan Pillai, P.Prabhakara Rao, Peter Koshy
- M-6-PO17** Effect of Annealing on the Structural and Optical Properties of Pulsed Laser Deposited TiO₂ Films
K.G.Gopchandran, S.Sankar, Geo Rajan, V.P.Mahadevan Pillai, P.Prabhakara Rao, Peter Koshy
- M-6-PO18** Thermo-mechanical Analysis of Delamination in GaN-based LED Package
Moo Whan Shin, Jianzheng Hu, Lian Qiao Yang, Woong Joon Hwang
- M-6-PO19** The Study of Micro-pyramid Array and its Applications
Mao-Kuo Wei, Shih-Chi Lin, Hung-Yi Lin
- M-6-PO20** Electrically Equivalent Circuit Analysis of Cylindrical ICP Lighting-Source and E-H Mode Transition Properties in Hg:Kr (150mTorr)
Jong-Kyung Yang, Paek Gwnag-Hyeo, Jong-Chan Lee, Dae-Hee Park
- M-6-PO21** Photonic Bandgap Engineering of Quasiperiodic Photonic Crystals
Yiquan Wang, Daozhong Zhang
- M-6-PO22** Multiple-channel Nonlinear Frequency Conversion with Quasi-phase-mismatch Effect
Hongchen Guo, Yiqiang Qin, Sin Hai Tang
- M-6-PO23** A Capacitance Model for Computing I-V Characteristics of Ion-implemented Opfet
N. B. Balamurugan, P. Nirmal Kumar, K. Sankaranarayanan, K. Balasubadra
- M-6-PO24** A Monte Carlo Simulation of an OPFET for OEIC Receivers
N. B. Balamurugan, S. Arun, K. Sankaranarayanan
- M-6-PO25** Analysis of Optical Waveguide Grating Structures for Photonic Antennas using MOEMS Technology
L. R. D.Suresh, S. Sundaravadivelu
- M-6-PO26** Simulation of Time Dependent Analysis of an OPFET
K. M. V. Ganesh, N. B. Balamurugan, K. Sankaranarayanan
- M-6-PO27** Analysis of Optical Waveguide Grating Coupler for Optical Integrated Circuits using Moems Technology
L. R. D. Suresh, S. Sundaravadivelu, S. Ponmalar
- M-6-PO28** Carbon Thin Film Deposition by Electroplating Method using Camphor for Optoelectronic Applications
Muhammad Athar Uddin, Sharif M Mominuzzaman
- M-6-PO29** Analysis of Horizontal Distribution in Xe based ICP for Lighting Source : Properties of Electron Temperature and Density
In-Sung Her, Gi-Seung Choi, Jong-Chan Lee, Dae-Hee Park
- M-6-PO30** Patterning Nanoparticles Using Self-Assembled Block Copolymers
Chi-An Dai, Yu-Lin Wu, Yi-Huan Lee
- M-6-PO31** Optically Monitored AgI Nanoparticle Growth in Al Doped Ag Thin Films
C.S. Sunandana, D. Bharathi Mohan, V. Sivaji Reddy
- M-6-PO32** Pulse Shaping by Cascaded Parametric Processes in Dual-periodic Optical Superlattice
Yiqiang Qin
- M-6-PO33** Size Dependent and Broadband Optical Limiting with MoS₂ Nanotubes
Weizhe Chen, Wei Ji, Heng Zhang, Kian Ping Loh

- M-6-PO34** Properties of CuInS₂ Thin Films Fabricated by SEL Method
Gye-Choon Park, Woon-Jo Jeong
- M-6-PO35** Surface Morphology and I-V Characteristic of Gold and Silver Silicide Layers on P-Type Si Substrate
W. Mahmood Mat Yunus, Yap Siew Hong, Zainal Abidin Talib
- M-6-PO36** **(WITHDRAWN)** High Efficiency Nanotextured Silicon Solar Cells
Ibrahim M. Hamammu, K. Ibrahim
- M-6-PO37** Violet Upconversion Emission of Sol-Gel Neodymium-doped Germania-Silica Thin Films via Organically Modified Silane Precursors
Wenxiu Que, L. L. Wang, Z. Sun, X. Hu
- M-6-PO38** Fabrication of Organic Light Emitting Displays on Transparent Conducting Oxide Film Deposited at Low Temperature on Plastic Substrates
Vandana Singh, Saswat Bharat, Satyendra Kumar
- M-6-PO39** Improved Performance of Organic Light-emitting Devices by Modifying Indium Tin Oxide Anode Surface with an Ultrathin Tetrahedral Amorphous Carbon Film
Baijun Chen, Xiaowei Sun
- M-6-PO40** Stability of Nanocrystalline Silicon Particles in Solution
Koichi Shinoda, Satoshi Yanagisawa, Keisuke Sato, Kenji Hiraokuri
- M-6-PO41** Preparation and Optical Properties of Chiral Polymers Having Azobenzene Moieties
Jui-Hsiang Liu, Po-Chih Yang
- M-6-PO42** Photoluminescence and Micro-Raman Scattering in Porous Si_{1-x}Ge_x Nanostructures
A. P. Vajpeyi, S. J. Chua, E. A. Fitzgerald, S. Tripathy
- M-6-PO43** Fabrication of Nanocrystalline Silicon Particles using Wet Process
Satoshi Yanagisawa, Koichi Shinoda, Keisuke Sato, Kenji Hiraokuri
- M-6-PO44** Degradation of Dye sensitized Solar Cell(ZnO electrode)
Poonam Suri, Manoj Kumar, R. M. Mehra
- M-6-PO45** Analysis of Adhesion and Non-uniformity of Polymeric Coatings for FBG based Devices
Z. W. Zhong, K. Y. Toh, J. Paul, L. P. Zhao
- M-6-PO46** Chemical Mechanical Polishing of Polymers
Z. W. Zhong, Y. H. Tan, B. M. P. Zirajutheen, Y.S. Tan, Z. F. Wang
- M-6-PO47** Real Blue Emitting Light Emitting Diodes based on Fluorene Derivative Polymers
H. S. Woo, B. S. Kim, C. G. Kim, T. W. Kwon, S. J. Cho, D. K. Park, S. H. Jin
- M-6-PO48** Preparation and Optical Characterization of Novel m-Nitroaniline and Recycled Polystyrene Coated Single Crystals
Y.S. Negi, P.V. Adhyapak, J.W. Dadge, R.C. Aiyer
- M-6-PO49** Underclad and Core Layer Uniformity in Optical Planar Waveguide Deposited using FHD
Nor Azmah Johari, Thirumeni Subramaniam, Prabakaran Poopalan, Chong Wu Yi, Harith Ahmad, Mohd Hanapiah Yusoff, Mohd Kamil Abd Rahman
- M-6-PO50** Characteristics of Mechanically Milled Silicon Nanocrystals Embedded in TEOS Thin Films
Hon Wu Lau, Ooi Kiang Tan, Bee Chin Ooi, Yang Liu

- M-6-PO51** Novel Azatruxene-Containing Oligomers/Polymers as Efficient and Stable Blue Light-Emitting Materials: Rapid Synthesis under Controlled Microwave Irradiation and Physical Properties
Wei Huang, Wenyong Lai
- M-6-PO52** Energy Band Discontinuity in Pulsed Laser Deposited N-Carbon/ P-Silicon Solar Cell
Sharif M. Mominuzzaman, M. Hasanuzzaman, M. Rusop, T. Soga, T. Jimbo, M. Umeno
- M-6-PO53** Capacitance-Voltage Characteristics of Nitrogen Doped Carbon/Silicon Photovoltaic Cell
Sharif M Mominuzzaman, Md. Zahurul Islam, Mohamad Rusop, Tetsuo Soga, Takashi Jimbo, Masayoshi Umeno
- M-6-PO54** CVD Growth and Characteristics of Ge_{1-x}C_x Alloys Thin Films on Silicon(100) Substrate
P. Han, Z. B. Li, Z. Qin, T. T. Han
- M-6-PO55** Fabrication of Organic Thin film Transistor with MICB Deposited PI Insulation Layer
S. J. Cho, D. K. Park, T. W. Kwon, J. K. Song, S. H. Jin, S. O. Kim, M. K. Choi
- M-6-PO56** Nonlinear Studies of Acridine Orange Dye
V. Sindhu Sukumaran, A. Ramalingam
- M-6-PO57** Efficient Synthesis of New Photochromic Diarylethene Derivatives Using Microwave Irradiation in Solid-state
Qianfu Luo, Quli Fan, Wei Huang
- M-6-PO58** Light Induced Effects on the Morphology and Optical Properties of 8-hydroxyquinoline Aluminium (AlQ₃) Small Molecular Thin Films
Vivek Kumar Shukla, Satyendra Kumar, Dinesh Deva
- M-6-PO59** AFM Studies on Formation of New Phase Responsible for Enhanced Photoluminescence in a Light Emitting Small Molecular Thin Film
Vivek Kumar Shukla, Satyendra Kumar, Dinesh Deva*
- M-6-PO60** Synthesis and Properties of Highly Efficient Hyperbranched Conjugated Polymers Containing Hole and Electron Transporting Groups in the Backbone
Wei Huang, Zhun Ma, Quli Fan, Lu Su
- M-6-PO61** Defect Characterization of Czochralski grown Bismuth Silicon Oxide (BSO) Single Crystals using AFM
Dinesh Deva, K V Rao, R S Yadav, Pratima Ashthana
- M-6-PO62** A Novel Red Phosphorescent Material: A Copolymer of Fluorene and Iridium Complex
Shu-Juan Liu, Qu-Li Fan, Wei Huang
- M-6-PO63** Synthesis and Characterization of Poly(methyl methacrylate) Grafted from Poly((9,9-dioctylfluorene)-alt-methoxybenzene) Using Atom Transfer Radical Polymerization
Wei Huang, Quli Fan, Lu Su
- M-6-PO64** Synthesis and Characterization of a Novel Silafluorene-containing Copolymer
Wei Huang
- M-6-PO65** Synthesis of a Novel Blue Light Emitting Polymer
Rong Yin, Wei Huang
- M-6-PO66** Electro-optical Characteristics of Light-emitting Cells based on Conjugated Polymers Transporting both the Electron and the Ion
Wei Huang
- M-6-PO67** A Novel Hybrid POSS-containing Conjugated Polymer: Encapsulation of the Conjugated Backbone using the Nanoscale Building Blocks
Wei Huang, Qu-Li Fan, Bing Zhang, Pei Wang

- M-6-PO68** Synthesis and Characterization of a Cationic Water-soluble Poly(fluorene ethynylene)
Yan-Qin Huang, Qu-Li Fan, Wei Huang
- M-6-PO69** Synthesis and Characterization of Spirobifluorene-bridged Polymer Containing Oxadiazole Branches as the Pendant
Wei Huang
- M-6-PO70** High Efficiency Electrophosphorescence from a Spirobifluorene-Based Iridium Complex
Wei Huang
- M-6-PO71** Crosslinkable Rare Earth-Containing Conjugated Copolymers
Wei Huang, Lei Zhao, Rui Zhu, Jiachun Feng, Xingrong Zhu
- M-6-PO72** Synthesis and Properties of Novel Electroluminescent Polymers Based on Silane and Fluorene for Light-Emitting Diodes
Wei Huang
- M-6-PO73** A Preliminary Study for Micro-patterning of Nonaqueous Organic Light-emitting Materials Using Micro-droplet Printing Technology
Wei Huang, Xiaoran Li, Jun Xu, Lei Zhao
- M-6-PO74** Enhanced Two Photon Absorption of Multi-branched Triphenylamine Derivatives
Wei Ji, Jun Mi, Jun He, Yingli Qu
- M-6-PO75** Synthesis of 4, 7, 12, 15-tetra-(9, 9'-dihexyldifluorene)-dithia[3,3]paracyclophane
Yee Hing Lai, Liping Cai
- M-6-PO76** A Novel Stable Blue-Emitting Thiophene-Containing Spirofluorene Oligomer-2
Wei Huang, Ling-Hai Xie, Ting Fu, Chao Tang
- M-6-PO77** Impacts of Junction Formation on the Performance of CuIn_{1-x}Ga_xSe₂ Photovoltaic Devices
C. H. Huang, Shung-Hung Lung
- M-6-PO78** Growth and Characterization of SiGe Layers by Conventional Method for Photonic Applications
N M Noordin, MD R Hashim, A Abdul Aziz
- M-6-PO79** Influence of Polymer Coating on the Photodegradation of Nanocrystalline and Amorphous Silicon
N. P. Mandal, Aniruddha Konar, Abhishek Kumar, P.N. Dixit
- M-6-PO80** Simulation Study of Visible Emission Transmissivity of Silicon-related to Single and Multilayer
Kifah Q. Salih, M. R Hashim
- M-6-PO81** Synthesis and Characterization a Series of Hyperbranched Polymers
Wei Huang, Guian Wen, Zhao Lei, Rui Zhu
- M-6-PO82** Star-shaped p-n Diblock Oligomers based on Fluorene and Oxadiazole
Wei Huang, Guian Wen, Zhao Lei, Xingrong Zhu