

NUS-Fudan Joint Centennial Symposium

on

BIOENGINEERING, MATERIALS & NANOTECHNOLOGY

National University of Singapore

SINGAPORE

November 21-22, 2005

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NUS Nanoscience & Nanotechnology Initiative (NUSNNI)

Faculty of Engineering

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復旦大學

热烈庆祝复旦大学建校 100 周年

SYMPOSIUM PROGRAMME

21 Nov 2005, Monday
(LT 1, Faculty of Engineering, NUS)

Opening and Welcome Address (LT 1, Faculty of Engineering)

8:30-9:00am	On-site Registration
9:00-9:15am	Welcome Address by Professor A.T.S. Wee (NUSNNI Co-Director & Vice Dean of Science)

Session 1 – Bioengineering I

Chairs: R.P.S. Han / C.T. Lim

9:15-9:30am	First Approximation of the Zero Stress State of Artery Wall and the Influence of Smooth Muscle Cell on Opening Angle G-Q Wu , L. Wang, J-B Xin (Fudan)	12
9:30-9:45am	Relevance of Biomechanics to Studying Human Diseases C.T. Lim (NUS)	14
9:45-10:00am	A Mechanism of Acupuncture Signal Transmission – a Model Analysis of Tissue Fluid Flow in Limb Connective Tissue G.H. Ding , X.Y. Shen, W. Yao, E.Y. Chen, F. Liu, J. Yang, Y.Q. Zhang and L.X. Lao (Fudan)	16
10:00-10:15am	Collagen Matrix Enhancement In Fibroblast Culture Using Polyanionic Macromolecules M. Raghunath , I. Arsianti, K.S. Harve, S. Joshi, R.R. Lareu (NUS)	18
10:15-10:30am	An Accurate and Feasible Approach for the Brain Deformation in IGNS Y-X Liu, Z-J Song (Fudan)	20

10:30-11:00am	Refreshment Break (LT 1 Lobby)
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Session 2 – Bioengineering II

Chairs: G.Q. Wu / L. Yung

11:00-11:15am	Functional Analysis among Respiratory Neurons in the Medulla L-L Shen (Fudan)	24
11:15-11:30am	Enzymatic Manipulation of Nanoparticle-DNA Conjugates Bearing Specific Number of Short DNA Strands L.L.Y. Yung (NUS)	26
11:30-11:45am	The Circulatory and Respiratory Dynamic Mechanisms of Lung Qi-Deficiency W. Yao , G.H. Ding, X.Y. Shen, D. Zhang and E.Y. Chen (Fudan)	28
11:45-12:00pm	Biophysical Characterization of Volume Excluding Macromolecules for Extracellular Matrix Enhancement K.S. Harve , R.R. Lareu, R. Rajagopalan, M. Raghunath	30

Session 3 – Biomaterials**Chairs: S.S. Feng / Y. Tang**

12:00-12:15pm	Modeling the Fine-Scale Size Effects in Biomaterials J. Wang, B. Yuan, R.P.S. Han (Fudan)	34
12:15-12:30pm	Mesoporous Bioactive Glasses: III. The Effect of Pore Size on in-vitro Bioactivities X.X. Yan, C.Z. Yu (Fudan)	36
12:30-12:45pm	Nanoparticles Of Biodegradable Polymers For Cancer Chemotherapy S.S. Feng (NUS)	38
12:45-1:00pm	Biocompatibility of Fibroin-Modified PHA N. Mei, P. Zhou (Fudan)	40

1:00-2:00pm **Lunch Break (LT 1 Lobby)**

Session 4 – Nanomaterials**Chairs: V.B.C. Tan / J.Y. Chen**

2:00-2:15pm	Reactive Surfactant in Nanoparticle-Nanofiber System for Decontamination of Mustard Gas Y.J. Liu, R.S. Barhate , R. Ramaseshan, S. Sundarrajan, N. L. Lala, S. Ramakrishna (NUS)	44
2:15-2:30pm	Tat Conjugation of Water Soluble CdTe Quantum Dots (QDs): the Enhancement of Intracellular Delivery to Living Cells J.Y. Chen , F.L. Xue, D.L. Lu (Fudan)	46
2:30-2:45pm	Novel Polyaniline Nanostructures with Junctions: Selectively Prepared from Nanorods To Nanotubes using <i>In Situ</i> Self-Assembly of Magnetic Nanoparticles and PH Control H.B. Xia, D.M. Cheng, C.Y. Xiao, H.S.O. Chan (NUS)	48
2:45-3:00pm	Fundamental Understanding of the Science and Engineering of the Fabrication of Zeolite/Polymer Nano-Composite Hollow Fiber Membranes for Gas Separation N.T.S. Chung , L.Y. Jiang, Y. Li (NUS)	50
3:00-3:15pm	The Application of Nano-Sized Zeolite in Biology Y. Tang (Fudan)	52
3:15-3:30pm	Micro-Scale Creep of Polymeric Materials Characterized by Nano-Indentation Techniques K.Y. Zeng (NUS)	54
3:30-3.45pm	<i>Ab Initio</i> Molecular Dynamic Simulations of Ta Film Growth Mechanisms and Atomic Structures V.B.C. Tan (NUS)	56

3.45-4:15pm **Refreshment Break (LT 1 Lobby)**

Session 5 – Nanomaterials & Nanostructures

Chairs: M.B.H. Breese / W-B Cai

4:15-4:30pm	Cluster and Molecular Self-Assembly on Surfaces A.T.S. Wee (NUS)	60
4:30-4:45pm	Different Dimensional Structures of Antimony Formed Selectively on Graphite X-S Wang (NUS)	62
4:45-5:00pm	New Development of Surface Enhanced IR Absorption Spectroscopy on Metallic Nanoparticle Films S-J Huo, Y-G Yan, Q-X Li, M. Ma and W-B Cai (Fudan)	64
5:00-5:15pm	High Resolution RBS At CIBA (Singapore) T. Osipowicz (NUS)	66
5:15-5:30pm	Fabrication of Nanostructures for Fluidic Applications F. Watt , J. van Kan, A .A. Bettiol, K. Ansari and P.G. Shao (NUS)	68
5:30-5:45pm	Proton Beam Writing of Nanostructures In Semiconductors M.B.H. Breese (NUS)	70
5:45-6:00pm	Nano-Finishing Of Silicon Wafers Using Newly Developed Electrolytic In-Process Dressing (Elid) Grinding System M.M. Islam, H.S. Lim, A.S. Kumar, M. Rahman , S. Balakumar (NUS)	72

7:00-9:30pm **Symposium Banquet (University Hall)**

22 Nov 2005, Tuesday
(LT 1, Faculty of Engineering, NUS)

9:30-10:00am **Breakfast (LT 1 Lobby)**

Session 6 – Nanoelectronics & Molecular Devices

Chairs: H. Chen / E.T. Kang

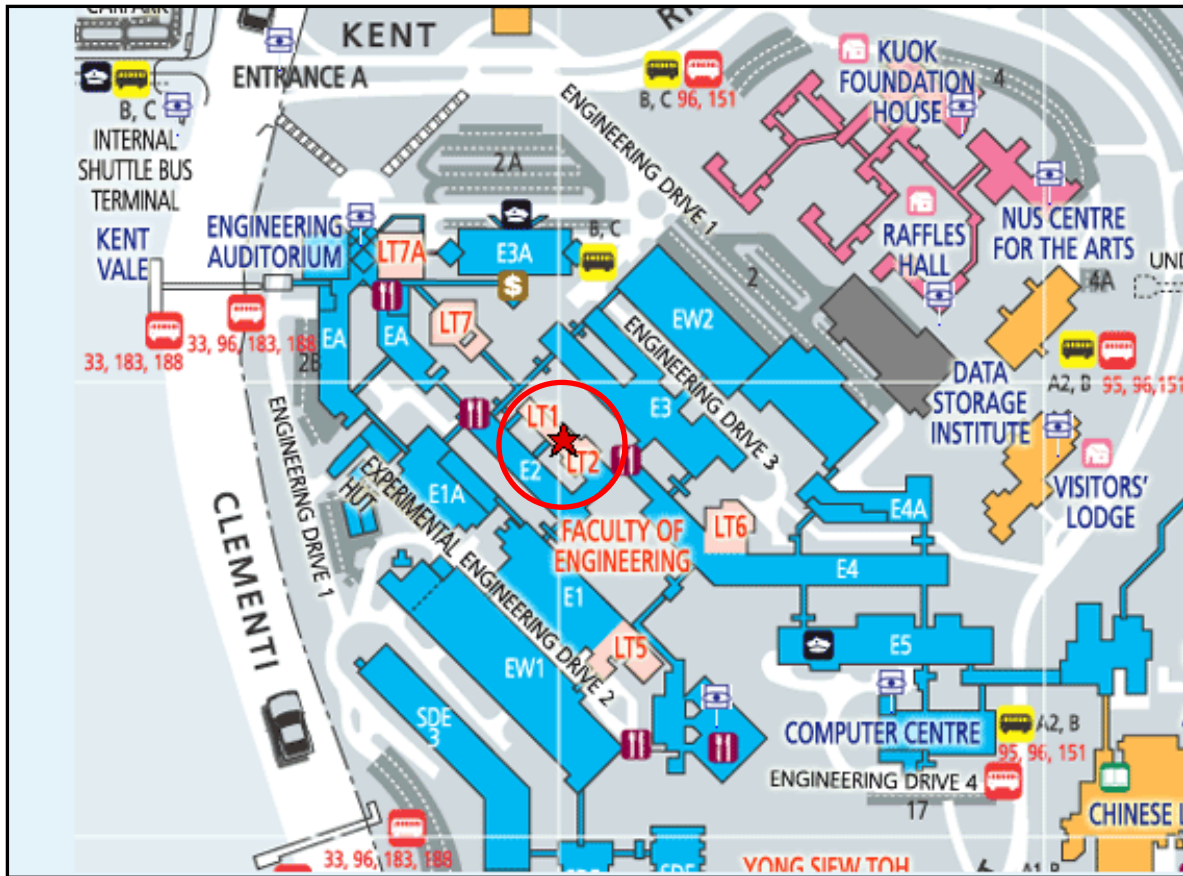
10:00-10:15am	Rewritable And WORM-Type Molecular/Polymer Memories Q.D. Ling, Y. Song, E.Y.H. Teo, S.L. Lim, C.X. Zhu, D.S.H. Chan, D.L. Kwong, K.G. Neoh, E.T. Kang (NUS)	76
10:15-10:30am	First-Principles Calculation of Conductance through Molecular Devices F. Jiang, Y.X. Zhou, Y.Y. Liang, H. Chen , R. Note, H. Mizuseki, Y. Kawazoe (Fudan)	78
10:30-10:45am	Magneto-Optical Spectroscopy of Atom-like Fine Structures in Single Quantum Dot Z.H. Chen , F.Z. Wang, I. Souma, K. Hyomi, L.H. Bai, S.H. Huang, H. Xiong, A. Murayama, Y. Oka and S.C. Shen (Fudan)	80
10:45-11:00am	Spin Current Switching In Magnetic Nanostructures M.B.A. Jalil , S.G.Tan (NUS)	82
11:00-11:15am	GAN-Based Semiconductor Saturable Absorber Mirror With SiO ₂ /Si ₃ N ₄ DBR F. Lin , H.P. Li, H.F. Liu, W. Liu, W. Ji, S.J. Chua, N. Xiang (NUS)	84

11:15-1:00pm **Lunch (LT 1 Lobby)**

1:00-5:00pm **NUS Laboratory Tours**

5:00pm onwards **Free & Easy**

SYMPOSIUM VENUE



The symposium will be held at LT1 which is located at the Faculty of Engineering.

NUS participants can take the internal shuttle bus, B or C, and alight at the old University Hall bus stop before making their way to LT1.

Fudan participants will be staying at the Visitor's Lodge which is also located in the above map.