

## 4th East Asian Pacific Student Workshop on Nano-Biomedical Engineering

December 15-16, 2010

National University of Singapore (NUS), Singapore

Wednesday, December 15, 2010 Oral Presentations			
Time	Number	Title of Presentation	Speaker
08:30 - 08:45		Welcome Address	
		<i>Session 1: Biomaterials</i>	Chair: Davod Alizadehrad (Tohoku University)
08:45 - 09:00	OS1-1	Macroporous Cellulosic Hydrogel Scaffold as 3D Hepatocyte Culture Platform	Bramasta Nugraha National University of Singapore
09:00 - 09:15	OS1-2	Biodegradable Hyperbranched Hydrogel: A Mechano-responsive and Cell Encapsulation Study	Zibiao Li National University of Singapore
09:15 - 09:30	OS1-3	Co-assembly of ECM-mimetic Peptide Amphiphiles into Hybrid Nanofibers	Jingnan Luo National University of Singapore
09:30 - 09:45	OS1-4	Fabrication and Characterization of the Gelatin, Chitooligosaccharide, and Demineralized Bone Powder-Blended Scaffolds Applied for Bone Tissue Engineering	Thakoon Thitiset Chulalongkorn University
		<i>Keynote Lecture I</i>	Chair: Poh Yong Cheng (National University of Singapore)
09:50 - 10:30	KL-1	Mechanics based microfluidic devices for disease detection & diagnosis	Prof. C.T. Lim National University of Singapore
10:30 - 11:15		<i>Coffee Break &amp; Poster Session</i>	
		<i>Session 2: Biomedical Devices I</i>	Chair: Takashi Nakagawa (Nagoya Institute of Technology)
11:15 - 11:30	OS2-1	Development of Double-sided Si Neural Probe for Deep Brain Stimulation	Soichiro Kanno Tohoku University
11:30 - 11:45	OS2-2	Development of Optical Waveguide on Si Neural Probe for Multiple Optical Stimulations of Neural Cells	Akihiro Noriki Tohoku University
11:45 - 12:00	OS2-3	Fish on Chip: A Microfluidic Platform for <i>In Vivo</i> Drug Studies in Developing Fish Embryo	Deepak Choudhury National University of Singapore
12:00 - 12:15	OS2-4	Development of a Sensor System for Measuring a Contact Stimulus by Diapers	Takuya Nomata Tohoku University
12:15 - 12:30	OS2-5	Maneuver of a Vehicle with Nonholonomic Constraints	Naoaki Yonezawa Tohoku University
12:30 - 13:30		<i>Lunch Break</i>	
		<i>Keynote Lecture II</i>	Chair: Zhu Jingling (National University of Singapore)
13:30 - 14:10	KL-2	Medical Ultrasonic Applications of Nonlinear Nature of Microbubbles	Prof. Shin-ichiro Umemura Tohoku University
		<i>Session 3: Medical Imaging &amp; Ultrasound</i>	Chair: Hisashi Kino (Tohoku University)
14:15 - 14:30	OS3-1	Analysis on Cavitation Inception and Temperature Rise in Tissue Mimicking Gel	Tatsuya Moriyama Tohoku University
14:30 - 14:45	OS3-2	Analysis of Non-Uniform Vibration of Single-Element High Intensity Focused Ultrasound Transducer	Kenji Otsu Tohoku University
14:45 - 15:00	OS3-3	Basic Study on Accurate Estimation of Surface Roughness Using Ultrasonic RF Echo for Application to Luminal Surface of Arterial Wall	Kosuke Kitamura Tohoku University
15:00 - 15:15	OS3-4	Development of a Biomedical Photoacoustic Microscopy with Hollow Optical Fiber	Hideyuki Koike Tohoku University
15:15 - 15:30	OS3-5	Overlapping community structure of structural brain network in young healthy individuals	Kai Wu Tohoku University
15:30 - 16:15		<i>Coffee Break &amp; Poster Session</i>	
		<i>Session 4: Drug Delivery</i>	Chair: Emiko Maseki (Tohoku University)
16:15 - 16:30	OS4-1	Polymeric Gels: Drug Delivery Systems for Minimal Invasive Brain Cancer Chemo Therapy	Pinunta Nittayacharn Mahidol University
16:30 - 16:45	OS4-2	Polyethyleneimine-grafted poly(N-3-hydroxypropyl)-aspartamide as a biodegradable gene vector for efficient gene transfection	Yuan Ping National University of Singapore
16:45 - 17:00	OS4-3	Hydrogen bond-assisted self-assembly and formation of polymer vesicles for drug delivery	Jingling Zhu National University of Singapore
17:00 - 17:15	OS4-4	<i>In vivo</i> Real-time Tracking of Polymeric Micelles for DDS Visualization	Yohei Hamanaka Tohoku University
17:30 - 18:30		Lab. Tour (Division of Bioengineering, NUS)	
19:00 -		<i>Banquet</i>	

Thursday, December 16, 2010 Oral Presentations

Time	Number	Title of Presentation	Speaker
<i>Keynote Lecture III</i> Chair: Kenji Otsu (Tohoku University)			
08:30 - 09:10	KL-3	Some Theoretical Issues on Measurement-Integrated Simulation	Prof. Toshiyuki Hayase Tohoku University
<i>Session 5: Biomechanics</i> Chair: Naoaki Yonezawa (Tohoku University)			
09:15 - 09:30	OS5-1	Observation of cell behavior on substrates with elasticity gradient	Takashi Nakagawa Nagoya Institute of Technology
09:30 - 09:45	OS5-2	Real-time observation of microtubule dynamics in cultured vascular endothelial cells exposed to shear stress	Koki Oya Tohoku University
09:45 - 10:00	OS5-3	Observation of velocity of Antibody-modified HL60 cells on glass plates using the inclined centrifuge microscope	Hiroki Sato Tohoku University
10:00 - 10:15	OS5-4	Can Viscosupplement and Crosslinking Recover the Hydration of Nucleus Pulposus?	Ya-Wen Kuo National Taiwan University
10:15 - 11:00	<i>Coffee Break &amp; Poster Session</i>		
<i>Session 6: Biomedical Devices II</i> Chair: Wen-Kai Chou (National Taiwan University)			
11:00 - 11:15	OS6-1	A Micro-fluidic Device for Bead and Cell-based Biosensors	Shashi Ranjan National University of Singapore
11:15 - 11:30	OS6-2	Novel gel pad array for microbead based hybridization assay and immunoassay	Qingdi Zhu National University of Singapore
11:30 - 11:45	OS6-3	Development of the Active Graft for the Total Cavopulmonary Connection with Shape-memory Alloy Fibers	Akihiro Yamada Tohoku University
11:45 - 12:00	OS6-4	Evaluation of the Newly Designed Paediatric Pulmonary Heart Valve	Shota Yabe Tohoku University
12:00 - 12:15	OS6-5	High Current Density Vertical MOSFET Technology for Non-volatile SpRAM Embedded in the Fully Implantable Retinal Prosthesis Chip	Hisashi Kino Tohoku University
12:15 - 12:30	OS6-6	Staircase Voltage MOSFET Driver Circuit for Triggered HIFU Treatment	Keisuke Takada Tohoku University
12:30 - 13:30	<i>Lunch Break</i>		
<i>Keynote Lecture IV</i> Chair: Soneela Ankam (National University of Singapore)			
13:30 - 14:10	KL-4	Reconstructing the stem cell microenvironment by delegation – the liquid and the solid way	Assoc. Prof. Michael Raghunath National University of Singapore
<i>Session 7: Tissue Engineering</i> Chair: Wei-Yin Lin (National Cheng Kung University)			
14:15 - 14:30	OS7-1	Assessment of Physical Characterization of Vascular Scaffold from Thai Silk Fibroin	Piyanuch Thitiwuthikiat Chulalongkorn University
14:30 - 14:45	OS7-2	Investigation of the Interaction Between Neuron and Glial Cell in Microenvironment	Yi-Lun Chiang National Cheng Kung University
14:45 - 15:00	OS7-3	Annulus Fibrosus Tissue Engineering using Cell-Sheet Technology	Eugene Yong-shun See National University of Singapore
15:00 - 15:15	OS7-4	Myofibroblasts: Pilot gene profile study and Epigenetics	Ariel B. Tan National University of Singapore
15:15 - 16:00	<i>Coffee Break &amp; Poster Session</i>		
<i>Session 8: Computational Bioengineering</i> Chair: Ramesh Ramji (National University of Singapore)			
16:00 - 16:15	OS8-1	Blood Flow Analysis in the Left Atrium with/without Atrial Fibrillation	Ryo Koizumi Tohoku University
16:15 - 16:30	OS8-2	Large-scale numerical simulation of blood flow in microvessels	Davod Alizadehrad Tohoku University
16:30 - 16:45	OS8-3	Cellular Consequences of a Genetic Defect in the Gastrointestinal Tract	Yong Cheng Poh National University of Singapore
<i>Session 9: Others</i> Chair: Takuya Nomata (Tohoku University)			
16:50 - 17:05	OS9-1	Plastic Antibodies: Molecularly Imprinted Polymeric Nanoparticles for Recognition of Viruses	Niranjani Sankarakumar National University of Singapore
17:05 - 17:20	OS9-2	Regulatory mechanism of the level of BRCA1/BARD1 expression following DNA damage	Emiko Maseki Tohoku University
17:20 - 17:35	OS9-3	Fast and high-quality imaging of thick biological specimens using focal modulation microscopy with acousto-optical modulators	Shau Poh Chong National University of Singapore
17:35 - 17:50	OS9-4	A Novel Microfluidic Approach for Layer-by-layer Encapsulation of Oil Microdroplets	Chaitanya Kantak National University of Singapore
18:00 -	Awards Presentation & Closing Remarks		

Number	Title of Presentation	Presenter
P-1	Effects of wax on the adherence of wound dressings on full thickness and partial thickness wounds	Jutamas Rujisomnapa Chulalongkorn University
P-2	Effects of ethyl alcohol on the properties of silk sericin-PVA scaffold	Tippawan Siritientong Chulalongkorn University
P-3	Interaction between the native cardiovascular system and different models of centrifugal flow rotary blood pumps	Telma K. Sugai Tohoku University
P-4	An Effective Method to Modify Stent Shape Suitable for Clinical Manifestation	Daisuke Yoshino Tohoku University
P-5	Development of the Total Artificial Heart (TAH) by the Use of Helical Flow Pumps	Jiongxun Chen Tohoku University
P-6	Development of an Implantable Hypothermia Device for Atrial Defibrillation	Chihiro Koga Tohoku University
P-7	Preliminary study on the development of a new artificial papillary muscle (PM) using shape memory alloy (SMA) fibres	Hisashi Hashimoto Tohoku University
P-8	Development of Fine Sized Cu Through-Si Via Technology for Three-Dimensional Stacked Retinal Prosthesis Chip	Yuki Ohara Tohoku University
P-9	Sleep Behavioral Analysis System	Jetsada Amin Mahidol University
P-10	EEG-based Neurofeedback Device	Supassorn Rodrak Mahidol University
P-11	Biodistribution of Novel Silica-Coated Nano-Particles for Fluorescence and CT Imaging in Tumor-Bearing Mice	Tomohiko Nakagawa Tohoku University
P-12	Sound Speed Measurement of Thermally Denatured Biological Tissue	Takashi Shishitani Tohoku University
P-13	High Resolution Ultrasound Imaging of Human Skin and its Relation to Biomechanical Properties	Kazutoshi Kumagai Tohoku University
P-14	Early Detection of Cervical Precancer <i>In Vivo</i> using NIR Raman Spectroscopy and Partial Least Square Discriminant Analysis	Shiyamala Duraipandian National University of Singapore
P-15	Styrylbenzoxazole Derivatives for <i>In Vivo</i> Imaging of Alpha-synuclein Neuropathology	Ryuichi Harada Tohoku University
P-16	3D Reconstruction of High Intensity Focused Ultrasound Pressure Field from Optical Measurement	Yuta Shimazaki Tohoku University
P-17	Stability Study of SN-38 Released from Polymeric Gels	Korbua Punyokun Mahidol University
P-18	Biocompatibility Study of Injectable Polymeric Gels in Rat Brains	Ketpat Vejjasilpa Mahidol University
P-19	Development of Lamellarin Encapsulated Nanoparticles using file sonication procedure	Hathaichanok Pungkom Mahidol University
P-20	Lamellarin encapsulated Nanoparticles using Poly( $\epsilon$ -caprolactone) and Poly(D,L-lactide) as core materials	Nattharin Swatdipakdi Mahidol University
P-21	Development of Nanoparticle-based Photodynamic Therapy as a Novel Anti-viral Strategy	Meng Eam Lim National University of Singapore
P-22	<i>In Vivo</i> Molecular Imaging of Vasculature in Ischemic Model Mice	Yoh Hamada Tohoku University
P-23	Experimental Validation of Ultrasonic-Measurement-Integrated Blood Flow Simulation Using Carotid Artery Models	Takayuki Sawao Tohoku University
P-24	Roles of Rho GTPases on Redistribution of Focal Adhesion in Endothelial Cells Exposed to Cyclic Stretch	Wenjing Huang Tohoku University
P-25	Motion Compensation of Adjacent Motion Segment Secondary to Dynamic Spine Stabilization	Wen-Kai Chou National Taiwan University
P-26	Why cells have different morphology — tensegrity model stimulation	Wei-Yin Lin National Cheng Kung University
P-27	A Computational Investigation of Gastric Electrical Stimulation	Aishwariya Kannan National University of Singapore
P-28	“Smart Capsules” as Bioprobes	Jianhao Bai National University of Singapore
P-29	A DC Component Based Blind Watermarking Scheme for Medical Images	Muhammad Imran Khan Petronas University of Technology
P-30	Contribution of oral intake of bacterial components to recovery of damaged skeletal muscle	Tomiki T. Kawaoka Tohoku University
P-31	Response Inhibition in Patients with Instinctive Grasp Reaction	Eizaburo Suzuki Tohoku University
P-32	Effects of Thai Silk Fibroin/Gelatin on Human Cancellous Bone	Rungnapa Vorrakpakdee Chulalongkorn University
P-33	Histamine Receptor H3 Regulates Insulin Secretion in Mouse Pancreatic $\beta$ -cell Line MIN6 cells	Tadaho Nakamura Tohoku University
P-34	Identification of a novel BARD1-interacting protein and analyses of its function	Ayako Matsuzawa Tohoku University
P-35	Induction of stem cell differentiation using topographical cues	Soneela Ankam National University of Singapore