

3rd East Asian Pacific Student Workshop on Nano-Biomedical Engineering

21 - 22 December 2009, National University of Singapore

Monday 21 Dec 2009 Oral Presentations		
Time	Title of Presentation	Speaker
8:30-8:45	Welcome Address	
<i>Keynote Lecture I</i> Chair: Bai Jianhao (National University of Singapore)		
8:45-9:30	Hemocompatible Biomedical Implants	Prof. Freddy Boey, Nanyang Technological University
<i>Session 1: Biomechanics</i> Chair: Daisuke Tsuchimi (Tohoku University)		
9:30-9:45	Dynamic Characteristics Analysis of Diseased Circulatory System with Lumped Parameter Model 1 st Report : Heart Valve Disease	Ryo Koizumi, Tohoku University
9:45-10:00	The Change of Intervertebral Disc Rheology with Degeneration Degree	Ya-Wen Kuo, National Taiwan University
10:00-10:15	Design of a Micro-Tensile Tester for Probing Smooth Muscle Cell Viscoelasticity	C. W. Chung, National University of Singapore
10:15-10:30	A Mathematical Model of the Regulation of Active Stress Production in Gastrointestinal Smooth Muscle	Viveka Gajendiran, National University of Singapore
10:30-11:00	Tea Break & Poster Session	
<i>Session 2: Biomechanics</i> Chair: Kantak Chaitanya Sudhir (National University of Singapore)		
11:00-11:15	Experimental Observation of Behavior of Neutrophil-like HL60 Cells on Oriented Endothelial Cells	Haruka Uranuma, Tohoku University
11:15-11:30	Localized Phosphorylation of Paxillin in Endothelial Cells in Response to Cyclic Stretch	Wenjing Huang, Tohoku University
11:30-11:45	Cyclic Stretch Increases Matrix Metalloproteinase-9 Production of Macrophages under Hypoxia	Koki Oya, Tohoku University
11:45-12:00	Basic Study on Sensing Mechanism of Substrate Elasticity by Cells: Effects of Substrate Elasticity and Thickness on the Behavior of Rat Aortic Smooth Muscle Cells	Norihiro Matsui, Nagoya Institute of Technology
12:00-13:20	Lunch Break & Poster Session	
<i>Keynote Lecture II</i> Chair: Ramesh Ramji (National University of Singapore)		
13:20-14:05	Micro-Fabrication Factory of Complex Tissues	Prof. Henry Yu, National University of Singapore
<i>Session 3: Bio-MEMS</i> Chair: Hsiao-Feng Chieh (National Cheng Kung University)		
14:05-14:20	Development of Si Neural Probe with Microfluidic Channel for Drug Delivery	Soichiro Kanno, Tohoku University
14:20-14:35	Development of Pillar Electrode Array for Retinal Stimulation with High Efficiency	Hiroataka Takeshita, Tohoku University
14:35-14:50	Electrical and Mechanical Characteristics of Si Double-sided Neural Probe and Its Application to <i>In-vivo</i> Recording	Sanghoon Lee, Tohoku University
14:50-15:05	Measurement on Electrophoretic Flow Dynamics of λ DNA in Nanochannel	Satoshi Uehara, Osaka University
15:05-15:20	Experimental Study on Vibrating Characteristics of Piezoelectric Artificial Cochlea in Air and Liquid	Harto Tanujaya, Osaka University
15:20-16:00	Tea Break & Poster Session	
<i>Session 4: Biomechanics</i> Chair: Takashi Shishitani (Tohoku University)		
16:00-16:15	Analysis of the Frequency Characteristics of Neonatal Middle Ears using a Sweep Frequency Impedance Meter	Naoya Seshimo, Tohoku University
16:15-16:30	Measurement of Human Skin Conditions using a Haptic Sensor	Daisuke Tsuchimi, Tohoku University
16:30-16:45	Monitoring Bone Cement Leakage by Cine CT Scanning	Chun-Kai Chiang, National Taiwan University
16:45-17:00	Surface Modified Upconversion Nanoparticles for Biomedical Applications	Sounderya Nagarajan, National University of Singapore
Banquet		

Tuesday 22 Dec 2009 Oral Presentations

Time	Title of Presentation	Speaker
<i>Keynote Lecture III</i> Chair: Koki Oya (Tohoku University)		
8:45-9:30	Mechanical States of Stress Fibers in Living Endothelial Cell and the Roles in Mechanotransduction	Prof. Masaaki Sato, Tohoku University
<i>Session 5: Drug Delivery & Biomaterial</i> Chair: Chun-Kai Chiang (National Taiwan University)		
9:30-9:45	<i>In vivo</i> Real-time Tracking of Polymeric Micelles for DDS Visualization	Yohei Hamanaka, Tohoku University
9:45-10:00	Evaluation of Drug Half-life in the Brain after Oral Administration of Antihistamines using PET and [¹¹ C]Doxepin	Dongying Zhang, Tohoku University
10:00-10:15	Attachment and Proliferation of Adipose-Derived Stromal Cells on Various Tailed Self-Assembled Monolayer with Identified Nano-Mechanical Properties and Physicochemical Characteristics	Hsiao-Feng Chieh, National Cheng Kung University
10:15-10:30	The Fabrication of Dex-loaded PLLA Nanofibers for Bone Tissue Engineering	Luong T. H. Nguyen, National University of Singapore
10:30-11:00	Tea Break & Poster Session	
<i>Session 6: Tissue Engineering</i> Chair: Yoshihiro Ujihara (Osaka University)		
11:00-11:15	Acoustic Impedance Evaluation of Thermally-induced Lesion in Biological Tissue using Ultrasonic Microscopy	Takashi Shishitani, Tohoku University
11:15-11:30	Cellulose Hydrogel Scaffold for Liver Tissue Engineering	Bramasta Nugraha, National University of Singapore
11:30-11:45	TGFβ Pulses in Fibroblasts: How Short Can They Get and How Long Do They Work?	Ariel B Tan, National University of Singapore
11:45-12:00	Bone Marrow Derived Mesenchymal Stem Cell Cell-Sheet Retain Multilineage Potential for Tissue Engineering	Eugene Yong-Shun See, National University of Singapore
12:00-13:20	Lunch Break & Poster Session	
<i>Keynote Lecture IV</i> Chair: Jun Kinugawa (Tohoku University)		
13:20-14:05	Electrochemistry-Based Dynamic Control of Cellular Adhesion	Prof. Matsuhiko Nishizawa, Tohoku University
<i>Session 7: Others</i> Chair: Jean-Joseph Christophe (Tohoku University)		
14:05-14:20	Influence of Undulation Pump Circulatory Assist on Baroreflex Sensitivity and Autonomic Nerve Activity in Goat	Hongjian Liu, Tohoku University
14:20-14:35	Development of Integrated Platform for Physiome Project	Yasuyuki Suzuki, Osaka University
14:35-14:50	Strategies for Organic Phase Encapsulation of Biomolecules within Agarose Microbeads through the Use of Polymers	Jianhao Bai, National University of Singapore
14:50-15:05	Activity of Levofloxacin Loaded Polymeric Nanoparticles against Biofilm of <i>E. coli</i>	W. S. Cheow, Nanyang Technological University
15:05-15:20	Formulation of Hollow Aggregates of Silica Nanoparticles as Potential Carrier in Inhaled Drug Delivery	Katherine, Nanyang Technological University
15:20-16:00	Tea Break & Poster Session	
<i>Session 8: Others</i> Chair: Yong Cheng Poh (National University of Singapore)		
16:00-16:15	Analysis of Clinical Data with Ultrasonic-Measurement-Integrated Simulation	Takaumi Kato, Tohoku University
16:15-16:30	Single Molecular Imaging of the Dynamics of Angiogenesis Factor in Hemi Hind Limb Ischemic Mice.	Yoh Hamada, Tohoku University
16:30-16:45	Three-dimensional High-Frequency Ultrasound Imaging for Early Diagnosis of Lymph Node Metastasis Combined with Nanobubbles	Li Li, Tohoku University
16:45-17:00	Real-time, Label-free, and High Resolution Biomolecular Imaging of Living Cells using Multi-focus Coherent anti-Stokes Raman Scattering Microscope	Takeo Minamikawa, Osaka University
17:15-	Awards Presentation & Adjournment	

21-22 Dec 2009 Poster Presentations

Poster Number	Title of Presentation	Speaker
P1	Ultra Low Power Vertical MOS Devices for Fully Implantable Retinal Prosthesis	Hisashi Kino, Tohoku University
P2	Eigenvalue Analysis for Error Dynamics of Ultrasonic-Measurement-Integrated Simulation of Blood Flow in the Aneurysmal Aorta	Kentaro Imagawa, Tohoku University
P3	Three-Dimensional Ultrasonic-Measurement-Integrated Blood Flow Simulation using PVA Carotid Artery Model	Tsunetoshi Suzuki, Tohoku University
P4	Single Particle Imaging of the Sentinel Lymph Node with Endoscopically Injected Fluorescent Nano-objects	Makoto Hikage, Tohoku University
P5	Three Rows of Outer Hair Cells Required for Efficient Cochlear Amplification	Sho Suzuki, Tohoku University
P6	Impact of Membrane Modeling on the Deformation Analysis of a Capsule	Toshihiro Omori, Tohoku University
P7	Patient-specific Morphological and Hemodynamic Analysis of Pulmonary Artery in the Case of Severe Deformations of the Lung	Jean-Joseph Christophe, Tohoku University
P8	Changes on Properties of Human Brain Structural Networks with Normal Aging	Kai Wu, Tohoku University
P9	Motion Estimation for Human Support System	Jun Kinugawa, Tohoku University
P10	The Effects of Actin Filaments on the Tensile Properties of Cells	Yoshihiro Ujihara, Osaka University
P11	Computational Analysis on the Deformation of a Red Blood Cell in a Branched Pipe	Sadao Bessho, Osaka University
P12	Estimation of Sub-micro Structure in Collagen Scaffold by SHG Microscopy	Reiko Maehara, Osaka University
P13	Relationship between Mechanical Property and Depth-dependent Material Properties of Articular Cartilage Evaluated at Functionally Different Regions	Takako Osawa, Osaka University
P14	Numerical Simulation of Force Distribution in Cytoskeleton during Cell Spreading	Ting-Jung Chen, National Cheng Kung University
P15	Hardware Implementation of Complex Phase Space Difference Algorithm Applied for Real-time ECG Monitoring	Chien-Sheng Liu, National Taiwan University
P16	Linking Genotype to Phenotype in the Gastrointestinal Tract	Yong Cheng Poh, National University of Singapore
P17	Inhibition of Anterior Tibial Translation or Axial Tibial Rotation Prevents Anterior Cruciate Ligament Failure during Simulated Landing Impact, but Does Not Protect the Tibiofemoral Osteochondral Tissue from Damage and Deformation	Chen Hua Yeow, National University of Singapore
P18	Combined Scaffold Formed from Silk and Self-assembly Peptide and the Use in Ligament Tissue Engineering	Kelei Chen, National University of Singapore
P19	Imaging Guided Therapeutic Angiomyogenesis using Fluorescent Upconversion Nanoparticles	Muthu Kumara Gnanasammandhan, National University of Singapore
P20	The Growth of Osteosarcoma Cells on Silk-nanohydroxyapatite Scaffolds for the Development of an <i>in vitro</i> 3D Tumor Model	Pamela H. S. Tan, National University of Singapore
P21	Ligament-Bone Interface Tissue Engineering using Scaffold-based Coculture	Pengfei He, National University of Singapore
P22	Tissue Transglutaminase as a Biological Tissue Glue	P. P. Panengad, National University of Singapore