

DAY 1 – MONDAY, 9 JULY 2007

0930 - 1030 Opening Ceremony & Conference Lecture

Conference Lecture **Functional Tissue Engineering and Biomechanics of Ligaments and Tendons: Opportunities and Challenges**
Savio Woo (USA)

1100 - 1230 Session 1.1 - Musculoskeletal Mechanics

- conf102a40 **Complex kinematic roles of individual extrinsic muscles of the thumb**
Zong-Ming Li, Jie Tang, Matthew Chakan, Rodrigo Kaz (USA)
- conf102a142 **Experimental and computational studies of carpal tunnel expansion**
Zong-Ming Li, Jie Tang, Matthew Chakan, Rodrigo Kaz (USA)
- conf102a224 **Development of Digit Foot Models for Foot Biomechanics and Support Design**
Ming Zhang, Jason TM Cheung, Jia Yu, Aaron KM Leung (Hong Kong)
- conf102a92 **Effects of Camber on Kinetics of Upper Extremity During Wheelchair Propulsion**
Chung-Ying Tsai, Po-Chou Lin, Chien-Ju Lin, Lin-Hwa Wang (Taiwan)
- conf102a249 **Mechanical Properties of Connection System between Dental Implant and Abutment by using Finite Element Analysis**
Danu Prommin, Jaturong Jitsaard, Jintamai Suwanprateeb, Kriskrai Sitthiseripratip (Thailand)
- conf102a100 **Extraction of the Inferior Alveolar Nerve Canal for Dental Applications**
Walita Narkbuakaew, Saowapak Sotthivirat (Thailand)

1100 - 1230 Session 1.2 - Biosignal Processing I

- conf102a49 **Detection of tumors and functional changes in seizures based on the ultrasound and wavelet analysis**
Samala Naga Kartik, Abhay Vig, S.K.Srinivas, T.M. Sridhar (India)
- conf102a116 **Combining the statistics of visual representation and modulus maxima of wavelet transform for medical image enhancement**
Haiyun Li, Jiayu Li (China)
- conf102a41 **Statistical Shape-Based Hierarchical Mumford–Shah Model for the Segmentation of Medical Images**
Guo-Cai Liu, Yao-Nan Wang, Xuan-Chu Duan, Shu-Rong Peng (China)
- conf102a133 **Analysis to a Critical State of Liver Cancer's Microwave Thermo-Field Influenced by Great Vessels**
Zheng Wei Ying (China)
- conf102a79 **Validation of novel Bayesian-constrained spectral method for segmentation of noisy medical data**
Tomasz Soltysinski, Tadeusz Palko (Poland)
- conf102a9 **Fusion of Medical Images: 2D to 3D Approach**
Y. Kiran Kumar, S. Senbagadevi (India)

1100 - 1230 Session 1.3 - Tissue Engineering I

- conf102a129 **Development of Collagen Scaffold with Internal Channels via Indirect Rapid Prototyping**
Chua CK, Yeong WY, Leong KF, Chandrasekaran M (Singapore)
- conf102a6 **Viscoelastic properties of the human umbilical vein (HUV) as an acellular scaffold for tissue engineering**
Roger W. Chan, Maritza Rodriguez (USA)
- conf102a269 **Characterization of Nano-Microfibrous Knitted Silk Hybrid Scaffold Systems for Tendon/Ligament Tissue Engineering Applications**
Teh Kok Hiong Thomas, Goh Cho Hong James, Toh Siew Lok (Singapore)
- conf102a262 **Duo-ionic gelation crosslinked chitosan-alginate scaffolds for tissue engineering**
Wipaporn Rojanarat, Kwunchit Oungbho, Luelak Lomlim (Thailand)

- conf102a195 **Strontium Co-administered with Calcium Increases Bone Mineral Density and Improves Extracellular Matrix Metabolism in Large Animal Model**
Li ZY, Lu WW, Lam WM, Ni GX (Hong Kong)
- conf102a112 **Osteogenic responses of primary human bone marrow stromal cell populations with nacre mother-of-pearl particles in vitro and ex vivo**
David W Green, Richard OC Oreffo (UK)

1100 - 1230 Session 1.4 - Bioinformatics

- conf102a223 **An approach to construction of gene network from multiplex three-dimensional brain gene expression mapping**
Qiang Liu, Haiyun Li (China)
- conf102a296 **Feature Extraction Techniques on DNA Microarray Data in Cancer Detection**
Charles H. Lee, David J. Peterson, Michael Vodhanel (USA)
- conf102a127 **Natural Variation in Human Gene Expression by Transmission Disequilibrium Test**
Hua Lin, Yan Yan, Liu Hong, Zheng Wei Ying (China)
- conf102a201 **Recombination in the non-structural gene region in type-2 dengue virus**
Woeichyn Chu, Min-Wei Su, Hanna S. Yuan (Taiwan)
- conf102a99 **Evaluation and Development of Protein-Protein Interaction Prediction System Based on Association Rule**
Fei-Hung Hung, Hung-Wen Chiu (Taiwan)

1330 - 1500 Session 2.1 - Orthopaedic Mechanics I

- Keynote 1 **Minimal invasive orthopaedic surgery: From the past to present**
Banchong Mahaisavariya (Thailand)
- conf102a13 **Three Dimensional Knee Joint Motion of ACL Deficit and Reconstructed Knees during Daily activities**
Naiquan (Nigel) Zheng, Bo Gao, Michael W. Moser, Peter A. Indelicato (USA)
- conf102a238 **ACL failure during impact compression of the knee joint**
Yeow Chen Hua, Peter Lee Vee Sin, James Goh Cho Hong (Singapore)
- conf102a124 **Fatigue failure in acetabular replacements - a hip simulator study**
Jie Tong, N.P. Zant, P. Heaton-Adegbile (UK)
- conf102a206 **Using Acetabular Notch for Acetabular Component Placement Intraoperatively in Total Hip Arthroplasty**
Huai Meng, Zixue Guo, Lili Hou, Qin Liu (China)

1330 - 1500 Session 2.2 - Cancer Mechanics

- Keynote 2 **Cancer Immunoediting: Effect of Tumor-induced Inflammatory Response and Neutrophil Sequestration on Cancer Metastasis**
Cheng Dong (USA)
- conf102a202 **Efficacy of pPEDF-nanoparticles in osteosarcoma**
Crispin R. Dass, Karla G. Contreras, David E. Dunstan, Peter F. Choong (Australia)
- conf102a208 **GFP expression alters osteosarcoma cell biology**
Crispin R. Dass, Peter F. Choong (Australia)
- conf102a173 **The Role of Integrin Beta4 Signaling in Mammary Tumor Cell Adhesion to Microvascular Wall in vivo**
Yonggang Lv, Min Zeng, Angela Pepe, Filippo Giancotti (USA)
- conf102a21 **Exogenous wild type p53 gene improved survival of nude mice injected with murine erythroleukemia cell line through amelioration of hemorheological changes**
Zongyao Wen, Yingyu Zhang (China)

1330 - 1500 Session 2.3 - Tissue Engineering II

- Keynote 3 **Applications of Biomedical Engineering in Dentistry**
Wichit Taranon (Thailand)

- conf102a219 **Enhanced Adipogenic Differentiation of Mesenchymal Stem Cells (MSCs) through the application of the Excluded Volume Effect (EVE)**
Felicia Celeste Loe, Ricky R Lareu, Michael Raghunath (Singapore)
- conf102a191 **Enhanced differentiation of mesenchymal stem cells co-cultured with anterior cruciate ligament fibroblasts on silk-gelatin hybrid scaffold**
Hongbin Fan, Haifeng Liu, Siew Lok Toh, James C.H. Goh (Singapore)
- conf102a106 **Application of Biomechanics stimulation in Tissue Engineering**
Frank Feng (China)
- conf102a146 **Tendon Tissue Engineering Using Biohybrid Scaffolds and Stem Cells**
Sambit Sahoo, Lay Theng Ang, Siew Lok Toh, James Goh (Singapore)

1330 - 1500 **Session 2.4 - Telemedicine & Healthcare**

- Keynote 4 **Clinical Implication of ReadMyHeart Handheld ECG Recorder on Cardiovascular Health Management**
Kang-Ping Lin (Taiwan)
- conf102a183 **Task-Dependent Adaptability of Remote Recorder in a Cardiac Surveillance Network**
Piotr Augustyniak (Poland)
- conf102a282 **Medical Database for Patient Diagnostic with Wireless Updating**
Gregory L. Tangonan, Nathaniel Joseph C. Libatique, Maria Leonora C. Guico, Engr. Tristan H. Calasanz (Philippines)
- conf102a325 **Toward Personalized Health Informatics With Integrated Wearable Telemetric System for Cardio-Pulmonary Signal Measurement**
Feng Ping, Chin-Shen Liu, Tze-Chien Hsiao, Tsung-Che Chou (Taiwan)
- conf102a309 **Wireless embedded infusion monitoring**
U. Siva Prakash, G. Vela Deepa, K.V. Ramanaiah, P. RamKishore Kumar Reddy (India)

1530 - 1730 **Session 3.1 - Tissue Engineering III**

- conf102a147 **Establishment of an effective coculture system for ligament-bone interface tissue engineering**
Nayak B.P., Goh J.C.H., Toh S.L. (Singapore)
- conf102a240 **Biophysical Profiling of the Excluded-Volume Effect for enhanced in vitro matrix deposition**
Harve Subramhanya Karthik, Ricky Lareu, Irma Arsianti, Yanxian Peng (Singapore)
- conf102a243 **A novel miniaturized microplate- reader based approach to quantify deposited collagen matrix in vitro**
Wang Zhibo, Tan Khim Nyang, Ricky Lareu, Michael Raghunath (Singapore)
- conf102a138 **Plasma Exchange Model and Its Clinical Application**
Liu Hong, Hua Lin, Zheng Weiying, Lin Hui (China)

1530 - 1730 **Session 3.2 - Space flight bioengineering symposium**

- conf102a343 **Electromyographical and Dynamographical Analysis of Space Flight Muscle Training Systems in Parabolic Flights**
F. Bodem, A. Meurer, J. Heine, D. Ruegg (Germany)
- conf102a342 **State-of-the-Art Eye and Head Tracking Devices in the Neurosciences**
AH Clarke, F-J Baartz (Germany)
- conf102a339 **Development of Human Physiology Research Facilities for the International Space Station - Recent Activities of the German Space Agency**
H.-U. Hoffmann, G. Ruyters (Germany)
- conf102a340 **Bone, Cartilage and Cell Bioreactors. ESA Designs for the International Space Station**
D. Jones (Germany)
- conf102a344 **An Analysis of Variance Investigation of the Hip and Thigh Muscle Activity in Cycling on a LBNP/Bicycle Ergometer Training System at Different Power, Pressure, and Gravity Conditions**
M. Lochmann, F. Bodem, D. Ruegg, J. Heine (Germany)

conf102a341 **Conduction Velocity of Nerve and Muscle Fiber Action Potentials in Microgravity**
D.G. Ruegg, T.H. Kakebeeke, J.-P. Gabriel (Switzerland)

1530 - 1730 Session 3.3 - Bioinstrumentation

conf102a298 **A Novel Technique for Ventricular Fibrillation Detection**
Nopadol Uchaipichat (Thailand)

conf102a336 **Development of wireless biomicrosystem for measuring impedance spectroscopy by implanted cuff electrode**
Yu-Ting Li, Chih-Hung Lin, Jia-Jin Jason Chen (Taiwan)

conf102a120 **Segmental Bioelectrical Impedance Analysis for Body Composition Estimation Using a New Segmental Model**
Kuo-Sheng Cheng, Ji-Jer Huang, Cheau-Jane Peng (Taiwan)

conf102a294 **Development of DNA-Piezoelectric biosensor for the detection of Mycobacterium tuberculosis**
Kosum Chansiri, Somchai Santiwattanakul, Thongchai Khewpinit (Thailand)

conf102a284 **Development of CT Markers and Detection of Position and Orientation from CT-Scan Image for Navigation Dental Implant and Tracking System**
Warakorn Charoensuk, Jackrit Suthakorn (Thailand)

conf102a331 **Development of Wireless Biomicrosystem for Measuring Impedance Spectroscopy by Implanted Cuff Electrode**
Chih-Hung Lin (Taiwan)

conf102a88 **Measurement of Fluid Velocity Using a Convective Heat Transfer Coefficient Measuring System**
Chanchana Tangwongsan (Thailand)

1530 - 1730 Session 3.4 - Biomedical Imaging I

conf102a131 **Texture Analysis of Magnetic Resonance Image on White Matter in Patients with Multiple Sclerosis Based on Co-occurrence Matrix**
Zhongyong Tong, Longzheng Tong (China)

conf102a236 **Fractal Analysis of White Matter Degeneration and Its Association with Upper Extremity Motor Function in Stroke**
Luduan Zhang, Andrew J Butler, Vinod Sahgal, Guang H. Yue (USA)

conf102a230 **The Image Spatial Features Quantification and Classification of Pathological Tissue for Breast Cancer**
Yen-Ting Chen, Chun-Ju Hou, Tzu-Hsuan Hsu, Shao-Jer Chen (Taiwan)

conf102a311 **Discrimination of gastric cancer using near-infrared Raman spectroscopy and multivariate techniques**
Teh Seng Khoon, Zheng Wei, Ho KY, Teh Ming (Singapore)

conf102a135 **The multilayer medical image retrieval based on the salient region of interest and gray distribution entropy**
Li Jin, Liang Hong, Zhang Liwei, Luan Kuan (China)

conf102a248 **Optimum Frequency of Radio Imaging Method for Biomedical Application**
Ichiro Hieda, Ki-Chang Nam (Japan)

conf102a157 **BOLD fMRI Integration into Radiosurgery Treatment Planning of Cerebral Vascular Malformations**
Joseph Stancanello, Carlo Cavedon, Paolo Francescon, Fulvio Uggeri (Italy)

conf102a44 **3D Ceph: 3D Cephalometric Analysis Evaluation of 200 Thai Patients**
Wisarat Bholasithi, Chanjira Sinthanayothin, Kanoknart Chintakanon, Ruangrat Komolpis, Wichit Tharanon (Thailand)

DAY 2 – TUESDAY, 10 JULY 2007

0830 - 0900 Plenary Lecture 1

Plenary 1 **Medicine on a chip – Opportunities for BME Research**
Abe Lee (USA)

0900 - 1030 Session 4.1 - Bone Mechanics

- Keynote 5 **Mechanics and Mechanobiology of Bone**
Edward X. Guo (USA)
- conf102a252 **Investigation of mechanical and viscoelastic properties of bovine bone by resonant ultrasound spectroscopy**
Taeyong Lee, Kuan Ming Si-hoe (Singapore)
- conf102a337 **The effect of proximal femoral canal geometry, bone quality and stem shapes on the stress distribution of cement mantle after the cemented total hip replacement**
Hung-Wen Wei, Yu-Shu Lai, Cheng-Kung Cheng (Taiwan)
- conf102a63 **Computational model for the mechanism regulating bone loss in ovariectomized rats**
He Gong, Ming Zhang (Hong Kong)
- conf102a60 **The Effect of Rasp Surface Structure on Bone Cutting Property**
Xiaoyan Wu, Zixue Guo (China)

0900 - 1030 Session 4.2 - Nano/Micro Biomedical Engineering Systems I

- Keynote 6 **Nucleic Acid Engineering: DNA as a Polymer for Nanobiotechnology and Nanomedicine**
Dan Luo (USA)
- conf102a45 **Dispersion in Microfluidic Channels Measured with an Online Fiber Optic Fluorescence Probe**
Partha Roy, Song Ying, Darren Tan (Singapore)
- conf102a145 **Using microfluidic channels and self-assembled monolayers to control the adhesion and migration of multiple types of cells**
Xingyu Jiang, Yong Li (China)
- conf102a189 **Microbead Patterning on Macroporous Films for Multiplexing bioassay**
Cheng Jinting, Zhang Yong (Singapore)
- conf102a260 **The encapsulation efficiency and temperature stability of Layer-by-Layer surface engineered hydrogel microcapsules**
Mak Wing Cheung, Soh Chai Yen, Cheung Kwan Yee, Trau Dieter (Singapore)

0900 - 1030 Session 4.3 – Biomaterials I

- Keynote 7 **Mechanical Properties of Silkworm Cocoon and Silk at Different Scales**
Xi-Qiao Feng (China)
- conf102a261 **Design, development and characterization of naturally derived biopolymer-based Scaffold for cell growth in bioreactor-an overview**
K. Pramanik, Ipsita Dipamitra Behera (India)
- conf102a104 **Fine pattern immobilizations of nerve cells and neurite extension on polystyrene films modified by carbon negative-ion implantation**
Piyanuch Sommani, Hiroshi Tsuji, Mitsutaka Hattori, Tetsuya Yamada (Japan)
- conf102a115 **Enhanced adhesion properties of mesenchymal stem cell on silicone rubber modified by carbon negative-ion implantation**
Hiroshi Tsuji, Piyanuch Sommani, Mitsutaka Hattori, Tetsuya Yamada (Japan)
- conf102a24 **Comblike Poly(ethylene oxide)/Hydrophobic C6 Branched Chitosan Surfactant Polymers As Anti-infection Surface Modifying Agents**
Katanchalee Mai-ngam, Pimpun Chumningan (Thailand)

0900 - 1030 Session 4.4 - Computer integrated & Assisted Surgery

- Keynote 8** **The Rapid Prototyping in Plastic and Craniofacial Surgery**
Mahatumarat Charan (Thailand)
- conf102a67** **3D Surface Cutting Technique Aided Orthodontics**
Pathomphong Phannurat, Paramate Horkaew, Chanjira Sinthanayothin (Thailand)
- conf102a72** **Dental Tool Calibration Using Point-Cloud-to-Point-Cloud Technique with the Least-Square Solution: Toward Developing A Dental Navigation System**
Auranuch Lorsakul, Jackrit Suthakorn (Thailand)
- conf102a33** **Consistent Surface Parameterization for Tooth Modeling and Dental**
Sittichai Pomthong, Saowapak Sotthivirat, Paramate Horkaew (Thailand)
- conf102a301** **An efficient algorithm for recovering distal holes' axes in intramedullary nail**
Jackrit Suthakorn, Paweena U-Thainual, Banchong Mahaisavariya (Thailand)

1100 - 1230 Session 5.1 - Nano/Micro Biomedical Engineering Systems II

- conf102a323** **Novel Surface Plasmon Resonance Configurations and Plasmonics for Lab-On-A-Chip**
Chii-Wann Lin (Taiwan)
- conf102a324** **Researches of Bio-Nano-Photonics at CNST, NTU**
Chii-Wann Lin, Da-Shin Wang, Hui-Hsin Lu (Taiwan)
- conf102a66** **Novel photonic bio-sensors based on silicon nanostructures**
Dominic F. Dorfner, Jonathan J. Finley, Gerhard Abstreiter (Germany)
- conf102a107** **CNT (Carbon Nanotube) Transistors for Neurotransmitter Measurement**
Gi-Ja Lee, Ji-Hye Park, Ji-Eun Lim, In-Song Koh (Korea)
- conf102a151** **Patterning of Individual Microbeads in a Microfluidic Device**
Lim Chee Tiong, Zhang Yong (Singapore)
- conf102a31** **A Model of Magneto-Affinity Cell Capture and Transport in Microchannels**
Partha Roy, Wu Liqun, Moorthi Palaniapan (Singapore)

1100 - 1230 Session 5.2 - Biosignal Processing II

- conf102a218** **Heart sound detection and analysis using a wide bandwidth phonocardiogram detection system**
Chanachana Tangwongsan, Arporn Teeramongkonrasmee (Thailand)
- conf102a279** **Wireless R-R interval data acquisition and analysis system for study of heart rate variability**
A.A. Patil, A.G. Patil (India)
- conf102a235** **Spinal cord injury alters RR Variability: A comparative study between normal and spinal cord injured persons**
A.G. Patil, R.H. Chile, S.T. Hamde (India)
- conf102a295** **Development of Biphasic Electroporator: Enhancement of Tumor Sensitivity to radiation and drug by electroporation**
S. H. Sanghavi, B. N. Pandey (India)
- conf102a302** **Analysis of Related Factors on Therapeutic Efficacy of Plasma Exchange For the Treatment of Hyperbilirubinemia**
Lin Hui, Liu Hong, Wang Bao-hua (China)

1100 - 1230 Session 5.3 – Biomaterials II

- conf102a57** **Calcium Alginate, N,O-Carboxymethylchitosan and Their Blends: In Vitro Biocompatibility and Biodegradability**
Wanida Janvikul, Paweena Uppanan, Boonlorn Thavornnyutikarn (Thailand)
- conf102a71** **Recombinantly produced Spider Silk in a Microfluidic Device**
Sebastian Rammensee, David Keerl, Thomas Scheibel, Andreas R. Bausch (Germany)

- conf102a190 **In vitro ligament tissue engineering with novel knitted silk scaffolds and human mesenchymal stem cells**
Haifeng Liu, James C.H. Goh, Hongbin Fan, Siew Lok Toh (Singapore)
- conf102a163 **Development of cement-pectin tablets containing vancomycin as skeletal drug delivery systems**
Nittima Rayakaew, Kwunchit Oungbho, Souwalak Phongpaichit, Teerapol Srichana (Thailand)
- conf102a217 **Synthesis and characterization of a new thermo-sensitive triblock copolymer for targeting drug delivery system**
Bochu Wang, Jun Li, Peng Liu, Yazhou Wang (China)
- conf102a197 **Osteogenesis on Surface Selective Laser Sintered Bioresorbable Scaffolds**
Vladimir K. Popov (Russia)

1100 - 1230 **Session 5.4 – Clinical Engineering**

- conf102a188 **A Binaural Localization Hearing Function Test System**
Quan Haiying, Ren Zhaohui, Deng Junmin, Zhang Xu (China)
- conf102a150 **A Special EPR Software for Cochlear Implant Designed with Delphi**
Guohong Zhou, Sha Liu, Xuan Wu (China)
- conf102a156 **Magnetic Stimulation of Nervous System**
D V Prasad (United Arab Emirates)
- conf102a169 **A Non-invasive Method in Determination of the Blood-Brain Barrier Permeability**
Wei Yuan, Yonggang Lv, Min Zeng, Bingmei M. Fu (USA)
- conf102a2 **Batch-mode Fabrication of Stent by Using MEMS Process**
Pen Shan Chao, Jung Tang Huang, Hou Jun Hsu (Taiwan)
- conf102a141 **Training at biomedical engineering environment- Kuwait experience**
Adel A. Alhajji, Mahmud Hassan, Nor Jaidi Tuahin (Kuwait)

1330 - 1500 **Session 6.1 - Tissue Mechanics I**

- Keynote 9 **Tribology and Clinical Significance of Soft Tissue Gliding**
Kai-Nan An (USA)
- conf102a270 **Measurement of Intrameniscal Stress**
F. K. Fuss, P. K. Goh, T. Yanai, A. C. Ritchie (Singapore)
- conf102a290 **Experimental study on the axial distribution of geometric parameters and circumferential residual strains in aortic arch**
Xiao-yang Li, Xiao-jun Zhang (China)
- conf102a28 **Wavelet analysis of hyperemic response in anesthetized rats with spinal cord injury**
Zengyong Li, W.C. Tam, F.T. Mak, Y.C. Lau (China)

1330 - 1500 **Session 6.2 - Biosignal Processing III**

- Keynote 10 **A Remote Control System for Rat Navigation in Complicated Environment**
Xiao-xiang Zheng (China)
- conf102a47 **Early Detection of Cerebral Palsy using EEG & EMG Analysis**
Samala Naga Kartik, Deepali Bhatt, Janani Venugopalan, T.M.Sridhar (India)
- conf102a12 **Identification of Neonatal EEG Sleep Stages by Structural Time Profiles and Independent Component Analysis**
Vladimir Krajca, Svojmil Petranek, Karel Paul, Petr Tichavsky (Czech Republic)
- conf102a29 **Memory Performance with Rapid-rate Transcranial Magnetic Stimulation of Gerbil Auditory Cortex**
Wang Hong, Wang Xu (China)

1330 - 1500 Session 6.3 – Biomaterials III

- Keynote 11** **Biodegradable Magnetic Bioglass as Thermoseed for Cancer Hyperthermia**
Feng-Huei Lin (Taiwan)
- conf102a5** **The Thrombosis of Endothelial Cells Grown on Magnesium Alloys**
Shao Kuo Lu, Wun Hsing Lee, Hung I Yeh, Tin Yi Tian (Taiwan)
- conf102a27** **Aligned Multi-walled Carbon Nanotube Reinforced Nano-Bio-Layers on Ti Alloys Using Electrophoretic Deposition (EPD) for Orthopaedic Applications**
Cengiz Kaya, Figen Kaya (Turkey)
- conf102a221** **Primary Human Osteoblast Cells Respond to Surface Modified Titanium Implant In Vitro**
Lertrit Sarinnaphakorn, Carmen Giordano, Enrico Sandrini, Roberto Chiesa (UK)
- conf102a125** **Fracture at bone-cement interface of cemented hip replacements, an experimental and numerical study**
Jie Tong (UK)
- conf102a247** **Effect of Phase Transformation on Ca-Hydroxyapatite in Simulated Body Fluid**
Narissara Koolpreechanan, Angkhana Jaroenworoluck, Nudthakarn Kosachan (Thailand), Ronald Stevens (UK)

1330 - 1500 Session 6.4 - Cell & Molecular Biomechanics I

- Keynote 12** **Mechanotransduction in bone: Towards a molecular mechanism**
Christopher R. Jacobs (USA)
- conf102a334** **Memory in Receptor-ligand Mediated Cell Adhesion**
Cheng Zhu (USA)
- conf102a69** **Mechanics of bundled semiflexible polymer networks**
O. Lieleg, C. Heussinger, E. Frey, A. R. Bausch (Germany)
- conf102a39** **Protective effects of oxidized phospholipids in the models of acute lung injury induced by high magnitude stretch**
Konstantin Birukov, Anna A. Birukova, Santipongse Chatchavalvanich (USA)
- conf102a277** **Morphology and Nano Biomechanics of Individual Collagen II Fibrils of Human Intervertebral Discs**
Aladin KD, Lu WW, Cheung KMC, Ngan AHWA (China)

1530 - 1630 Session 7.1 – Tissue Mechanics II

- conf102a229** **Bridging scales: An attempt to incorporate cellular responses within a three-dimensional FEM model of active muscle contraction**
O. Röhrle, J.B. Davidson, J. Kim, A.J. Pullan (New Zealand)
- conf102a233** **Mechanical Properties of Native Porcine Coronary Arteries and Arteries Subjected to Decellularization Treatment**
Chong Chuh Khiun, Riang Lilianty (Singapore)
- conf102a209** **Mechanical Properties of Ligaments in Human Middle Ear – Measurement and Modeling**
Rong Z. Gan, Tao Cheng, Chenkai Dai, Don Nakmali (USA)

1530 - 1630 Session 7.2 - Biosignal Processing IV

- conf102a182** **Snore Signals Analysis: Review and Clinical Applications for Obstructive Sleep Apnea**
Andrew K. Ng, T.S. Koh, L.L. Lim (Singapore)
- conf102a35** **Selective MMIE Training of Hidden Markov Models for Cardiac Arrhythmia Classification**
Carlos S. Lima, Manuel J. Cardoso (Portugal)
- conf102a134** **Comparison of the numerical methods to process the data of the myocytes Ca²⁺ fluointersity**
Yan Yan, Wang Xianming, Liu Xuezhong, Niu Weizhen (China)

1530 - 1630 Session 7.3 - Gene Delivery & Pharmaceutical Engineering

- conf102a199** **Cationic star polymers consisting of alpha-cyclodextrin core and oligoethylenimine arms as non-viral gene delivery vectors**
Yang Chuan, Li Jun, Li Hongzhe, Goh Suat Hong (Singapore)
- conf102a148** **Novel Self-Assembled Cationic Supramolecules Composed of Cyclodextrins Threaded on a Polymer Chain as Gene Delivery Vectors**
Jun Li, Chuan Yang, Hongzhe Li, Xin Wang (Singapore)
- conf102a1** **Study on pharmacokinetics and pharmacodynamics of mitomycin**
Jianhai Chen (China)
- conf102a307** **Modeling of Polymorphic Crystallization of L-Glutamic Acid**
Min-Sen Chiu, Martin Wijaya Hermanto, Kee Chung Shen, Richard D. Braatz (Singapore)

1530 - 1630 Session 7.4 - Biomedical Imaging II

- conf102a320** **3D CT Morphological Study: A Method to Study Thai Dry Skull**
Supakit Rooppakhun, Surasith Piyasin, Kriskrai Sitthiseripratip (Thailand)
- conf102a46** **3D Segmentation and Offset Creation for Dental Bridge Design**
Teeraporn Kusalanukhun, Chanjira Sinthanayothin, Wichit Tharanon (Thailand)
- conf102a43** **3D Orthodontic Treatment Simulation with Tooth Segmentation and Alignment**
Chanjira Sinthanayothin, Wichit Tharanon (Thailand)
- conf102a98** **3D Surface Reconstruction from Fundus Stereo Images**
Meng-Dar Shieh, Sio-Leng Cheang, Yung-Nien Sun, Catherine Jui-Ling Liu (Taiwan)

DAY 3 – WEDNESDAY, 11 JULY 2007

0830 - 0900 Plenary Lecture 2

Plenary 2 **Nano-Biophysics and –biology of cell mechanosensors**
M Sokabe (Japan)

0900 - 1030 Session 8.1 - Spine Mechanics

Keynote 13 **Orthopaedic sport biomechanics – a new paradigm**
Kai-Ming Chan (Hong Kong)

conf102a315 **The combined effect of eccentric loading and loading rate on lumbar spine: the precaution of exercise prescription for the elderly**
Ya-Wen Kuo, Yong-Chin Jin, Been-Der Yang, Jaw-Lin Wang (Taiwan)

conf102a314 **The shock attenuation of intervertebral disc following high cycle fatigue loading**
Wu Tai-Kuan, Wang-Chu Chen, Jaw-Lin Wang, Shyh-Chin Huang (Taiwan)

conf102a306 **Effect of Intervertebral Disc Height on Lumbar L4-L5 Spine Segment Using FE Method**
Yuanli Zhou, Qinghang Zhang, Ee Chon Teo (Singapore)

conf102a303 **The Effect of a Dynamic Stabilization Device on Disc Loading under Compression**
Qing Hang Zhang, Yuan Li Zhou, Ee Chon Teo, Dominique Petit (Singapore)

0900 - 1030 Session 8.2 - Mechanobiology

Keynote 14 **Molecular Biomechanics of Receptor-Ligand Bindings and Cellular Biomechanics in Microgravity**
Mian Long (China)

conf102a123 **Rho GDI prevents mechanical stretch-induced migration of vascular smooth muscle cells via inhibition of PI3K/Akt pathway**
Zong-Lai Jiang, Ming-Juan Qu, Ying-Xin Qi, Zhi-Qiang Yan (China)

conf102a175 **Role of Rho-GDI alpha on low shear stress induced vascular remodeling: a proteomic analysis**
Ying-Xin Qi (China)

conf102a122 **The comparative proteomics analysis of cultured artery in the rat under low and normal shear stress**
Zong-Lai Jiang, Ying-Xin Qi, Ding-Kun Long, Bo Liu (China)

conf102a258 **Development of Stress Base Criterion for Nerve Cell Injury by Experimental Observations of Hydraulic Pressure Loading**
Eiji Nakamachi, Kazunori Furukawa, Hidetoshi Nakamura (Japan)

0900 - 1030 Session 8.3 - Nanobiotechnology

Keynote 15 **Size effects in endocytosis: diffusion and absorption of nanoparticles in animal cells**
Huajian Gao (USA)

conf102a90 **Up-converting Fluorescent Nanoparticles for Biomedical Applications**
Yong Zhang, Zhengquan Li (Singapore)

conf102a97 **Effective delivery of small interfering RNA to cancer cells by using up-converting nanoparticles**
Shan Jiang, Yong Zhang (Singapore)

conf102a328 **Layer-by-Layer Polyelectrolyte Self Assembly Encapsulation of Water Soluble Materials for Bioengineering Applications**
Dieter Trau, Sebastian Beyer, Mak Wing Cheung, Gerhard Meyer (Singapore)

conf102a8 **Collagen-blended Biodegradable polymer nanofibers: Potential substrates for Wound Healing in Skin Tissue Engineering**
Kun Ma, T. Yong, K.C. Chan, S. Ramakrishna (Singapore)

0900 - 1030 Session 8.4 - Computational Bioengineering I

- Keynote 16** **Conjugated computational mechanics of the cardiovascular system over micro to macro levels**
Takami Yamaguchi (Japan)
- conf102a220** **Multi-scale computation of arterial hemodynamics under varying physiologic conditions**
Fuyou Liang, Hao Liu (Japan)
- conf102a327** **Estimation of heat transfer coefficient in a porous model for simulating a biological tissue under a hyperthermia therapy**
Ping Yuan, Shih-Bin Wang, Syu-Fang Liu, Ming-Jun Kuo (Taiwan)
- conf102a174** **Multi-Field Coupled Finite Element Analysis for Sound Transmission in Normal and Pathological Ears**
Rong Z. Gan, Xuelin Wang (USA)
- conf102a73** **Integrated Multi-Compartment Modeling of Cardiovascular System for Predicting Chemical Equilibration and Dialysis Outcome in Kidney Patients**
I.A. Karimi, S. Lakshminarayanan, D.Y. Lee, Rao Raghuraj (Singapore)

1100 - 1230 Session 9.1 - Biomedical Imaging III

- conf102a321** **High-quality Quantitative in vivo MR spectroscopy without Water Suppression**
J. M. Lin, S. Y. Tsai, C. M. Cheng, T. C. Yeh (USA)
- conf102a322** **Correction for gradient-echo EPI distortions with k-space data over-sampling and k-space energy spectrum analysis**
Su-Chin Chiu, Hsiao-Wen Chung, Nan-kuei Chen (USA)
- conf102a53** **Adaptive Proportional Control for DNA injection using Visual Servoing**
Zhang Yanliang, Ang Wei Tech, Han MingLi (Singapore)
- conf102a52** **A New Approach to Calibrate Vision Guided DNA Injection System**
Zhang Yanliang, Han Mingli, Ang Wei Tech, Shee Cheng Yap (Singapore)
- conf102a56** **Electric Snake to Detect the Boundary of an Object in Medical Ultrasound Image**
I Ketut Eddy Purnama, Michael H. F. Wilkinson, Gijbertus J. Verkerke (The Netherlands)
- conf102a117** **Atlas Based Identification of Targets for Functional Radiosurgery: Development and Validation**
Joseph Stancanello, Pantaleo Romanelli, Fulvio Uggeri, Giampaolo Cantore (Italy)

1100 - 1230 Session 9.2 - Biosignal Processing V

- conf102a15** **Modernizing Colorimeter with RGB Color Sensor**
A.Sivanantha Raja, K.Sankaranarayanan (India)
- conf102a347** **The Effect of Back Squat Depth and Load on the Activity of 6 Superficial Hip and Thigh Muscles: A Study using Computerized Electromyography**
M. Lochmann, A. Meurer, F. Bodem (Germany)
- conf102a184** **Separating Cardiac and Muscular ECG Components Using Adaptive Modelling in Time-Frequency Domain**
Piotr Augustyniak (Poland)
- conf102a326** **Automatic Detection of ischemia episodes in the ECG signal using a Rule-based method**
Maryam Mohebbi (Iran)
- conf102a155** **Comparison of signal processing techniques for FECG extraction**
Ling Wen Wan, Martin Lindsay Buist (Singapore)

1100 - 1230 Session 9.3 - Artificial Organs & Devices

- conf102a272** **Artificial Reflex Loop for Prevention of Landmine Injuries**
F. K. Fuss, M. A. Tan (Singapore)
- conf102a137** **A new strategy to replace the natural vitreous by a novel capsular artificial vitreous body with pressure-control valve**
Qianying Gao, Shansong Mou, Jian Ge, Chi-ho To, Yannian Hui, Ang Liu, Zhichong Wang, Chongde Long, Juan Tan (China)
- conf102a18** **Hemolysis Studies on an Axial-Flow Blood Pump Made in China**
Lin Changyan, Wu Guanghui, Li Bingyi, Wang Jing, Hou Xiaotong (China)
- conf102a287** **Impact of Mitral Valve Closure on Blood Damage by Mechanical Heart Valves**
Luke H. Herbertson, Christopher M. Haggerty, Steven Deutsch, Keefe B. Manning (USA)
- conf102a80** **Approximation of the accommodation demand for an Artificial Accommodation System by means of the terrestrial magnetic field and eyeball movements**
Simon Klink, Ulrich Gengenbach, Georg Bretthauer (Germany)
- conf102a78** **Novel method for assignment of active, positron emitting liver**
Tomasz Soltysinski (Poland)

1100 - 1230 Session 9.4 - Computational Bioengineering II

- conf102a198** **Neural networks for simulation of computational processes in bioengineering**
E.Soudah, J.F.Rodriguez, M.Doblaré, E.Oñate (Spain)
- conf102a257** **A Multi-Scale Finite Element Analysis of Head Injury by Employing A Micro Blood Vessel-Brain tissue model**
Yuichi Ito, Eiji Nakamachi, Hiroyuki Kuramae (Japan)
- conf102a86** **Mathematically modeling gastric smooth muscle activity**
Martin Buist, Alberto Corrias (Singapore)
- conf102a74** **Systems Engineering approach for body heat regulation – feedback strategy for fever control**
Rangaiah G. P., Chiu M. S., Lakshminarayanan S., Rao Raghuraj (Singapore)
- conf102a293** **Temperature Behavior during Performance of an Ophthalmic Phacoemulsification**
Pitak Laoratanakul, Wiroj Limtrakarn, Somporn Reepolmaha (Thailand)
- conf102a11** **Comprehensive processing of photomicrographs for automatic karyotyping**
Ganesh vaidyanathan.S, N. Kumaravel, K. Srinivasan, Bibhas Kar (India)

1330 - 1500 Session 10.1 - Orthopaedic Mechanics II

- Keynote 17** **Tissue Responses to Epidermal Loading: Reactive Hyperaemia, Resting Flow Motion, and Intitial Fluid Flow**
Arthur Mak (Hong Kong)
- conf102a14** **Tibial Fixation of ACL Reconstruction Using Biodegradable Interference Screws during Simulated Gait-A Cadaver Study**
Naiquan (Nigel) Zheng, Chad Price, Bo Gao, Peter A. Indelicato (USA)
- conf102a319** **Biomechanical Study of Antegrade Femoral Nailing for the Femoral Shaft Fracture Fixation**
Marut Wongcumchan, Kriskrai Sitthiseripratip, Banchong Mahaisavariya, Supasit Rodkwan (Thailand)
- conf102a312** **Geometric Mismatch of Humeral Nail in the Thai humerus: A Virtual Simulation Study**
Pongnarin Jiamwatthanachai, Panya Aroonjarattham, Kriskrai Sitthiseripratip, Banchong Mahaisavariya (Thailand)
- conf102a222** **Biomechanics of Foot and Footwear – A Finite Element Approach**
Jason Tak-Man Cheung, Bruno Bouchet, Ming Zhang, Benno Nigg (Canada)
- conf102a89** **Development of Passive Dorsiflexion and Plantar Flexion Device for Ankle Joints**
Keiji Imado, Kengo Ohnishi, Atsuyoshi Miura, Masuji Nagatoshi (Canada)

1330 - 1500 Session 10.2 - Cell & Molecular Mechanics II

- Keynote 18** **Relevance of Mechanics in Studying Human Diseases**
C.T. Lim (Singapore)
- conf102a232** **Atomic force microscopy study of the antimicrobial action of Sushi peptides on Gram negative bacteria**
Li Ang, Ho Bow, Ding Jeak Ling, Lim Chwee Teck (Singapore)
- conf102a239** **Association and dissociation of red blood cells in the presence of large macromolecules**
Björn Neu, Yang Yang, Zhang Zhengwen, Herbert J. Meiselman (Singapore)
- conf102a75** **Coarse Grained Modeling of Self-Assembly and Mechanics of Biomolecules/ATP Molecular Motor**
Baohua Ji (China)
- conf102a313** **Interleukin-1 β ; increases cell survival under mechanical loading by regulating cell-cell communication**
Jie Qi, Liqun Chi, Donald Bynum, Albert J. Banes (USA)

1330 - 1500 Session 10.3 - Controlled Drug Delivery

- Keynote 19** **Strategies for designing delivery systems for macromolecular drugs**
Victor C. Yang (China)
- conf102a154** **Micro-particles and fibers for sustained delivery of Cisplatin**
Jingwei Xie, Ruo Shan Tan, Chi-Hwa Wang (Singapore)
- conf102a242** **Simulation of Magnetic Drug Targeting in Blood Vessel Using Finite Element Method**
Meechai Lohakan, Pisuit Junchaichanakun (Thailand)
- conf102a278** **A new method of purifying Cu, Zn-SOD by Q XL negative ion exchange chromatography**
Humin Liang, Bochu Wang, Wei Wang, Shuangkou Chen, Jie Lian (China)
- conf102a227** **Production and Purification of Human Growth Hormone by High Cell Density Cultivation of Pichia pastoris**
Anan Tongta, Yardrunng Suwannarat, Knit Nimmarairat, Teerapat Ondee (Thailand)

1330 - 1500 Session 10.4 - Cardiovascular Engineering

- Keynote 20** **Computational Haemodynamics and its Clinical Applications**
Xu Xiaoyun (UK)
- conf102a234** **The Effect of Miller Cuff Configuration on Anastomotic Hemodynamics**
Xiong Fangli, Chong Chuh Khiun (Singapore)
- conf102a108** **A novel method to quantify mitral valve chordae tension**
Zhaoming He, Chris Jowers (USA)
- conf102a19** **Pilots' Examination in a Rapid LBNP Exposure with Push-Pull Effect**
Jan Hanousek, Petr Dosek, Jan Petricek, Ludvik Cettl (Czech Republic)
- conf102a291** **Computational Fluid Dynamic Study of Blood Flow in Cerebral Aneurysm**
Xiao-jun Zhang, Xiao-yang Li, Fan He (China)