

# SCIENTIFIC PROGRAM

**Thursday, 17 September 2015**

9:00 - 9:45 Hall	<b>Opening &amp; Award Ceremony</b>
9:45 - 10:45 Hall	<b>Plenary Lecture 1</b> Chair(s): Takeo Matsumoto (Nagoya Institute of Technology, Japan)
9:45 - 10:45	<b>Integrated Nano-Biomechanics of the Human Body</b> Prof. Takami Yamaguchi, MD, PhD Professor Emeritus and Specially Appointed Professor School of Biomedical Engineering, Tohoku University, Japan
11:00 - 12:15 Hall	<b>OS1 : Bio-inspired Flight System Biomechanics I</b> Organizer(s): Prof. Hao Liu (Chiba University, Japan) Prof. Sanjay Sane (National Centre for Biological Sciences, India) Chair(s): Sanjay Sane (National Centre for Biological Sciences, India) David Lentink (Stanford University, USA)
11:00 - 11:15 OS1-1	<b>The Inner Transmissions: the Biomechanics of Wing Coordination in Flies</b> <u>Sanjay Sane</u> <sup>1</sup> <sup>1</sup> National Centre for Biological Sciences, India.
11:15 - 11:30 OS1-2	<b>Flexible and Controllable Deformation of the Thorax during Flight of the Hawkmoth</b> <u>Noriyasu Ando</u> <sup>1</sup> , Ryohei Kanzaki <sup>1</sup> <sup>1</sup> The University of Tokyo, Japan.
11:30 - 11:45 OS1-3	<b>Dynamics of Hummingbirds Flying in Highly Turbulent Winds</b> <u>Sridhar Ravi</u> <sup>1,2</sup> , Nicolai Kanow <sup>1</sup> , Ryusuke Noda <sup>3</sup> , Combes Stacey <sup>4</sup> , Hao Liu <sup>2</sup> <sup>1</sup> RMIT University, Australia.
11:45 - 12:00 OS1-4	<b>In Vivo Recording of Aerodynamic Force with an Aerodynamic Force Platform</b> <u>David Lentink</u> <sup>1</sup> , Andreas F. Haselsteiner <sup>1</sup> , Rivers Ingersoll <sup>1</sup> <sup>1</sup> Stanford University, USA.

12:00 - 12:15 OS1-5	<p><b>An Experimental and Computational Study on the Aerodynamic Contribution to the Passive Pitching Motion of Dipteran Flapping Wings</b>  <u>Daisuke Ishihara</u><sup>1</sup>, Tomoyoshi Horie<sup>1</sup>, Tomoya Niho<sup>1</sup>  <sup>1</sup> Kyushu Institute of Technology, Japan.</p>
11:00 - 12:30 Room A	<p><b>OS2 : Integrated Nano-Biomechanics</b>  <b>Organizer(s): Prof. Takami Yamaguchi (Tohoku University, Japan)</b>  <b>Prof. Takuji Ishikawa (Tohoku University, Japan)</b>  <b>Chair(s): Takami Yamaguchi (Tohoku University, Japan)</b>  <b>Takuji Ishikawa (Tohoku University, Japan)</b></p>
11:00 - 11:15 OS2-1	<p><b>Effect of Flow Curvature on the Migration of Blood Cells</b>  <u>Stephanie Nix</u><sup>1</sup>, Yohsuke Imai<sup>1</sup>, Takuji Ishikawa<sup>1</sup>  <sup>1</sup>Tohoku University, Japan.</p>
11:15 - 11:30 OS2-2	<p><b>A Numerical Simulation of Cytoadhesion and Rosette Formation of Red Blood Cells Infected by Malaria</b>  Yohsuke Imai<sup>1</sup>, Yuki Ichikawa<sup>1</sup>, Shunichi Isida<sup>1</sup>, Daiki Matsunaga<sup>1</sup>, Stephanie Nix<sup>1</sup>, Toshihiro Omori<sup>1</sup>, Takami Yamaguchi<sup>1</sup>, Takuji Ishikawa<sup>1</sup>  <sup>1</sup>Tohoku University, Japan.</p>
11:30 - 11:45 OS2-3	<p><b>Investigation of Corneal Endothelial Cell Phenotypes by Altered Shear Flow</b>  <u>Minjeong Son</u><sup>1</sup>, Unghyun Ko<sup>1</sup>, Jin-Sung Park<sup>1</sup>, Jaehyung Kim<sup>2</sup>, Jennifer H. Shin<sup>1</sup>  <sup>1</sup>Korea Advanced Institute of Science Technology (KAIST), Korea. <sup>2</sup>Chungbuk National University Hospital, Korea.</p>
11:45 - 12:00 OS2-4	<p><b>Modelling Endothelial Glycocalyx Layer Redistribution</b>  Tet Chuan Lee<sup>1</sup>, Pavel Sumets<sup>1</sup>, David Long<sup>1,2</sup>, John Cater<sup>1</sup>, <u>Richard Clarke</u><sup>1</sup></p>
12:00 - 12:15 OS2-5	<p><b>Hemodynamic Study on the Initiation of Cerebral Aneurysms Using Left-Right Comparison Method</b>  <u>Yuji Shimogonya</u><sup>1</sup>, Shunichi Fukuda<sup>2</sup>, Takuji Ishikawa<sup>1</sup>, Takami Yamaguchi<sup>1</sup>  <sup>1</sup>Tohoku University, Japan. <sup>2</sup>National Hospital Organization Kyoto Medical Center, Japan.</p>
12:15 - 12:30 OS2-6	<p><b>Application of Computational Fluid Dynamics and Genetic Algorithms to Investigate Effectiveness of Hemodynamic Factors to Determine Abdominal Aortic Bifurcation Shapes</b>  <u>Masako Himeno</u><sup>1,2</sup>, Shigeo Noda<sup>1</sup>, Kazuaki Fukasaku<sup>1</sup>, Ryutaro Himeno<sup>1</sup>, Shigeru Tadano<sup>2</sup>  <sup>1</sup>RIKEN, Japan. <sup>2</sup>Hokkaido University, Japan.</p>
11:00 - 12:15 Room B	<p><b>GS1 : Cell and Tissue Biomechanics I</b>  <b>Chair(s): Kazuaki Nagayama (Ibaraki University, Japan)</b>  <b>Chwee Teck Lim (National University of Singapore, Singapore)</b></p>
11:00 - 11:15 GS1-1	<p><b>Nuclear Mechanics and Mechanotransduction: the Role of the Nuclear Deformability in Cell Proliferation</b>  <u>Kazuaki Nagayama</u><sup>1</sup>, Yuki Murakami<sup>1</sup>, Yumi Hamaji<sup>2</sup>, Yuji Sato<sup>2</sup>, Takeo Matsumoto<sup>2</sup>  <sup>1</sup>Ibaraki University, Japan. <sup>2</sup>Nagoya Institute of Technology, Japan.</p>

11:15 - 11:30 GS1-2	<b>Feasibility Study on Contact Irreversible Electroporation for Superficial Tumor Treatment by Using Miniature Electrodes</b> <u>Kosaku Kurata</u> <sup>1</sup> , Manabu Sato <sup>1</sup> , Takanobu Fukunaga <sup>1</sup> , Hiroshi Takamatsu <sup>1</sup> <sup>1</sup> Kyushu University, Japan.
11:30 - 11:45 GS1-3	<b>Traction Force Microscopy of Mesenchymal Stem Cells in Mode of Frustrated Differentiation</b> <u>Satoru Kidoaki</u> <sup>1</sup> , Kousuke Hamano <sup>1</sup> , Thasaneeya Kuboki <sup>1</sup> <sup>1</sup> Kyushu University, Japan.
11:45 - 12:00 GS1-4	<b>Morphology and Bioviscoelasticity of Vasa Nervorum of Sciatic Nerve of Diabetic Rat – A Time Course Study</b> Chung-Yi Su <sup>1</sup> , Chou-Ching K. Lin <sup>2</sup> , <u>Ming-Shaung Ju</u> <sup>1</sup> <sup>1</sup> National Cheng Kung University, Taiwan. <sup>2</sup> National Cheng Kung University Hospital, Taiwan.
12:00 - 12:15 GS1-5	<b>Mechanics of Collective Epithelial Cell Migration</b> Sri Ram Krishna Vedula <sup>1</sup> , Benoit Ladoux <sup>1,2</sup> , <u>Chwee Teck Lim</u> <sup>1</sup> <sup>1</sup> National University of Singapore, Singapore. <sup>2</sup> Institut Jacques Monod, France.

11:00 - 12:30 Room C	<b>GS2 : Orthopaedic Biomechanics I</b> Chair(s): <u>Yuji Tanabe</u> (Niigata University, Japan) <u>Mitsugu Todo</u> (Kyushu University, Japan)
11:00 - 11:15 GS2-1	<b>Biomechanical Issues on Cement Mantle Thickness in Total Hip Arthroplasty</b> <u>Yuji Tanabe</u> <sup>1</sup> , Jonas Aditya Pramudita <sup>1</sup> , Satoshi Iida <sup>2</sup> , Hirotsugu Ohashi <sup>3</sup> , Shunji Kishida <sup>4</sup> , Izumi Minato <sup>5</sup> <sup>1</sup> Niigata University, Japan. <sup>2</sup> Matsudo City Hospital, Japan. <sup>3</sup> Osaka-fu Saiseikai Nakatsu Hospital, Japan. <sup>4</sup> Chiba University School of Medicine, Japan. <sup>5</sup> Niigata Rinko Hospital, Japan.
11:15 - 11:30 GS2-2	<b>Strain Measurements for Mineral and Collagen Phases in Cortical Bone by Small and Wide Angle X-ray Diffraction</b> <u>Masahiro Todoh</u> <sup>1</sup> , Shigeru Tadano <sup>1</sup> , Masanobu Minowa <sup>1</sup> <sup>1</sup> Hokkaido University, Japan.
11:30 - 11:45 GS2-3	<b>Application of Handy 3D Scanner for an In-Vivo Kinematic Analysis after Total Knee Arthroplasty</b> <u>Takehito Hananouchi</u> <sup>1</sup> , Tatsuo Ohyama <sup>1</sup> , Kazuma Kitahata <sup>1</sup> , Yujiro Naeki <sup>1</sup> , Shinji Satake <sup>2</sup> <sup>1</sup> Osaka Sangyo University, Japan. <sup>2</sup> Shimada Hospital, Japan.
11:45 - 12:00 GS2-4	<b>Study on Trabecular Microstructural and Mechanical Properties on Different Area of Osteonecrosis of the Femoral Head (ONFH)</b> <u>Chenglong Feng</u> <sup>1</sup> , Peng Xu <sup>1</sup> , Lizhen Wang <sup>1</sup> , Wei Sun <sup>3</sup> , Zirong Li <sup>3*</sup> , Yubo Fan <sup>1,2</sup> <sup>1</sup> Beihang University, China. <sup>2</sup> National Research Center for Rehabilitation Technical Aids, China. <sup>3</sup> China-Japan Friendship Hospital, China.
12:00 - 12:15 GS2-5	<b>Prediction of Bone Remodeling Mechanism in Lower Limbs with Different Hip Arthroplasties</b> <u>Abdul Halim Abdullah</u> <sup>1,3</sup> , Mitsugu Todo <sup>1</sup> , Yasuharu Nakashima <sup>1</sup> <sup>1</sup> Kyushu University, Japan. <sup>3</sup> University Teknologi MARA, Malaysia.

12:15 - 12:30 GS2-6	<p><b>Development and Characterization of a Novel Porous <math>\beta</math>-TCP Scaffold Covered with a Three-Dimensional PLLA Network Structure for Bone Tissue Engineering</b>  <u>Takaaki Arahira</u><sup>1</sup>, Michito Maruta<sup>1</sup>, Shigeki Matsuya<sup>1</sup>, Mitsugu Todo<sup>2</sup>  <sup>1</sup> Fukuoka Dental College, Japan. <sup>2</sup> Kyushu University, Japan.</p>
13:30 - 15:00 Hall	<p><b>OS1 : Bio-inspired Flight System Biomechanics II</b>  <b>Organizer(s): Prof. Hao Liu (Chiba University, Japan)</b>  <b>Prof. Sanjay Sane (National Centre for Biological Sciences, India)</b>  <b>Chair(s): Hao Liu (Chiba University, Japan)</b>  <b>Kei Senda (Kyoto University, Japan)</b></p>
13:30 - 13:45 OS1-6	<p><b>Flexible Wing-and Body-Based Strategies for Bio-Inspired Flight System: Aerodynamics and Flight Stability</b>  <u>Hao Liu</u><sup>1,4</sup>, Ryusuke Noda<sup>1</sup>, Masatero Maeda<sup>2</sup>, Toshiyuki Nakata<sup>3</sup>, Hiroto Tanaka<sup>4</sup>  <sup>1</sup> Chiba University, Japan. <sup>2</sup> Lund University, Sweden. <sup>3</sup> University of London, UK. <sup>4</sup> Shanghai Jiao Tong University and Chiba University, Japan.</p>
13:45 - 14:00 OS1-7	<p><b>Numerical Simulation of a Bumblebee in Fully Developed Turbulent Flows</b>  <u>Thomas Engels</u>, Dmitry Kolomenskiy #, Kai Schneider, J rn Sesterhenn, Fritz-Olaf Lehmann</p>
14:00 - 14:15 OS1-8	<p><b>Flying Animals and Bio-Inspired Robots</b>  <u>Xinyan Deng</u><sup>1</sup>  <sup>1</sup> School of Mechanical Engineering, Purdue University, USA.</p>
14:15 - 14:30 OS1-9	<p><b>Implementation of the Clap-Fling Effect in an Insect-Mimicking Flapping Wing MAV</b>  Hoang Vu Pahn<sup>1</sup>, <u>Hoon Cheol Park</u><sup>1</sup>  <sup>1</sup> Konkuk University, Korea.</p>
14:30 - 14:45 OS1-10	<p><b>Control of a Biologically-Inspired, Insect-Scale Robot</b>  <u>Pakpong Chirarattananon</u><sup>1</sup>  <sup>1</sup> City University of Hong Kong, Hong Kong.</p>
14:45 - 15:00 OS1-11	<p><b>Flight Control of a Flapping Butterfly Considering Time Delay</b>  <u>Kei Senda</u><sup>1</sup>  <sup>1</sup> Kyoto University, Japan.</p>
13:30 - 15:00 Room A	<p><b>GS3 : Cardiovascular and Respiratory Biomechanics</b>  <b>Chair(s): Kyehan Rhee (Myongji University, Korea)</b>  <b>Masaaki Tamagawa (Kyushu Institute of Technology, Japan)</b></p>
13:30 - 13:45 GS3-1	<p><b>Studies of Embryonic and Fetal Cardiovascular Fluid Mechanics Using Ultrasound-Based Computational Fluid Dynamics</b>  <u>Yap Choon Hwai</u><sup>1</sup>, Tan Xin Yi Germaine<sup>1</sup>, Lai Chang Quan<sup>1</sup>, Muhammad Jamil<sup>1</sup>  <sup>1</sup> National University of Singapore, Singapore.</p>

13:45 - 14:00 GS3-2	<p><b>Study on Non-Invasive Tomographic Micro-Visualization of Biomechanical Properties of Atherosclerosis Using Optical Coherence Strainigraphy</b>  <u>Souichi Saeki</u><sup>1</sup>, Yoshitaro Sakata<sup>2</sup>  <sup>1</sup>Osaka City University, Japan. <sup>2</sup>National Institute of Advanced Industrial Science and Technology, Japan.</p>
14:00 - 14:15 GS3-3	<p><b>Effects of Plaque Morphology and Mechanical Property on Coronary Wall Stress</b>  <u>Min Jae Kang</u><sup>1</sup>, Jung Hoon Kim<sup>1</sup>, Kyeihan Rhee<sup>1</sup>  <sup>1</sup>Myongji University, Korea.</p>
14:15 - 14:30 GS3-4	<p><b>Dynamic Flow in the Large Airways during a Rapid Inhalation</b>  <u>H. Calmet</u><sup>1</sup>, A. Gambaruto<sup>1</sup>, G. Houzeaux<sup>1</sup>, A. Bates<sup>2</sup>, D. J. Doorly<sup>2</sup>  <sup>1</sup>Barcelona Supercomputing Center (BSC-CNS), Spain. <sup>2</sup>Imperial College London, UK.</p>
14:30 - 14:45 GS3-5	<p><b>Effects of Simulated Microgravity on Vascular Development in Zebrafish</b>  Yongfei Liu<sup>1</sup>, Xiang Xie<sup>1</sup>, Deng Liu<sup>1</sup>, Qi Wang<sup>1</sup>, Ting Sun<sup>1</sup>, Zaien Wen<sup>1</sup>, Zhenhui Kang<sup>1</sup>, Daoxi Lei<sup>1</sup>, Yidan Chen<sup>1</sup>, Tian Zhang<sup>1</sup>, Qian Zhang<sup>1</sup>, Hans Gregersen<sup>1</sup>, Juhui Qiu<sup>1,2</sup>, <u>Guixue Wang</u><sup>1</sup>  <sup>1</sup>Bioengineering College of Chongqing University, China. <sup>2</sup>Tsinghua University, China.</p>
14:45 - 15:00 GS3-6	<p><b>Development of Honeycomb Microporous Stent for Cerebral Aneurysm Treatment</b>  <u>Tsutomu Tajikawa</u><sup>1</sup>, Ryo Hidaka<sup>1</sup>, Takeshi Moriwaki<sup>2</sup>, Tetsu Sato<sup>3</sup>, Jun Takahashi<sup>3</sup>, Marina Funayama<sup>2</sup>, Maya Furukoshi<sup>2</sup>, Yasuhide Nakayama<sup>2</sup>  <sup>1</sup>Kansai University, Japan. <sup>2</sup>National Cerebral and Cardiovascular Center Research Institute, Japan. <sup>3</sup>National Cerebral and Cardiovascular Center Hospital, Japan.</p>
13:30 - 15:00 Room B	<p><b>GS1 : Cell and Tissue Biomechanics II</b>  Chair(s): <u>Po-Ling Kuo</u> (National Taiwan University, Taiwan)  <u>Ei Yamamoto</u> (Kinki University, Japan)</p>
13:30 - 13:45 GS1-6	<p><b>Roles of Increased Interstitial Fluid Pressure in Cell Migration</b>  <u>Po-Ling Kuo</u><sup>1,2</sup>, Yu-Chiu Kao<sup>1</sup>, Chau-Hwang Lee<sup>1</sup>  <sup>1</sup>National Taiwan University, Taiwan. <sup>2</sup>National Taiwan University Hospital, Taiwan.</p>
13:45 - 14:00 GS1-7	<p><b>Evaluating Elasticity Dynamics of Three-Dimensional Cell-Matrix Using Ultrasonic Shear Waves</b>  <u>Po-Ling Kuo</u><sup>1,2</sup>, Pai-Chi Li<sup>1</sup>  <sup>1</sup>National Taiwan University, Taiwan. <sup>2</sup>National Taiwan University Hospital, Taiwan.</p>
14:00 - 14:15 GS1-8	<p><b>Biomechanical and Histological Changes in Ultraviolet-Irradiated Skin Tissues due to the External Application of Elastin</b>  <u>Ei Yamamoto</u><sup>1</sup>, Yusuke Susaki<sup>1</sup>, Shingo Nishi<sup>1</sup>, Kumiko Takemori<sup>1</sup>, Hiroyuki Ito<sup>1</sup>  <sup>1</sup>Kinki University, Japan.</p>
14:15 - 14:30 GS1-9	<p><b>Cycle Mechanical Stretching Promotes Migration and Inhibits Invasion of Bone Marrow-Derived Mesenchymal Stem Cells</b>  <u>Guanbin Song</u><sup>1</sup>, Bingyu Zhang<sup>1</sup>, Qing Luo<sup>1</sup>, Yang Ju<sup>2</sup>, Li Yang<sup>1</sup>  <sup>1</sup>Chongqing University, China. <sup>2</sup>Nagoya University, Japan.</p>

14:30 - 14:45 GS1-10	<b>How Pre-Existing Degeneration Affects Chondrocyte Viability in Articular Cartilage after Impact Induced Injury</b> <u>Josh Workman</u> <sup>1</sup> , Ashvin Thambyah <sup>1</sup> , Neil Broom <sup>1</sup> <sup>1</sup> University of Auckland, New Zealand.
14:45 - 15:00 GS1-11	<b>The Effects of Distribution of Adhesion Proteins on Sensing Microgrooved Structure in Migrating Cells</b> <u>Hiromi Miyoshi</u> <sup>1</sup> , Kensuke Suzuki <sup>2</sup> , Jong Soo Ko <sup>3</sup> , Taiji Adachi <sup>2</sup> , Yutaka Yamagata <sup>1</sup> <sup>1</sup> RIKEN, Japan. <sup>2</sup> Kyoto University, Japan. <sup>3</sup> Pusan National University, Korea.
<b>13:30 - 15:00</b> <b>Room C</b>	<b>GS2 : Orthopaedic Biomechanics II</b> <b>Chair(s): Andi Isra Mahyuddin (Institut Teknologi Bandung, Indonesia)</b> <b>Makoto Sakamoto (Niigata University, Japan)</b>
13:30 - 13:45 GS2-7	<b>Synthesis of Four-Bar and Six-Bar Linkage Prosthetic Knee</b> <u>Sandro Mihradi</u> <sup>1</sup> , Alvin Raditya <sup>1</sup> , Balthasar Sebastian Lumbantobing <sup>1</sup> , Tatacipta Dirgantara <sup>1</sup> , Andi Isra Mahyuddin <sup>1</sup> <sup>1</sup> Institut Teknologi Bandung, Indonesia.
14:00 - 14:15 GS2-8	<b>Effect of Dynamic Loading on the Pullout Strength of Cortical Bone Screw</b> Chih-Kun Hsiao <sup>1</sup> , Yi-Jung Tsai <sup>1</sup> , <u>Shang-Hua Yu</u> <sup>1</sup> , Chun-Wei Kang <sup>1</sup> , Yuan-Kun Tu <sup>1</sup> <sup>1</sup> E-Da Hospital, Kaohsiung, Taiwan.
14:15 - 14:30 GS2-9	<b>Finite Element Analysis of Primary Stability on Short Stem Hip Implant</b> <u>Keisuke Sasagawa</u> <sup>1</sup> , Kota Sakurai <sup>1</sup> , Masafumi Oda <sup>2</sup> , Keiko Katsuyama <sup>1</sup> , Toshiaki Hara <sup>1</sup> , Katsuya Nakata <sup>3</sup> , Shojiro Terashima <sup>1</sup> <sup>1</sup> Niigata Institute of Technology, Japan. <sup>2</sup> Niigata University, Japan. <sup>3</sup> JCHO Osaka Hospital, Japan.
14:30 - 14:45 GS2-10	<b>Focal Adhesion Assembly Regulates Phenotypic Changes and Dedifferentiation in Chondrocytes</b> <u>Hyunjun Shin</u> <sup>1</sup> , Mi Nam Lee <sup>1</sup> , Jin Seung Choung <sup>1</sup> , Sanghee Kim <sup>2</sup> , Byung Hyune Choi <sup>3</sup> , Jennifer H. Shin <sup>1</sup> <sup>1</sup> Korea Advanced Institute of Science and Technology, Korea. <sup>2</sup> Hansung University, Korea. <sup>3</sup> Inha University College of Medicine, Korea.
14:45 - 15:00 GS2-11	<b>Verification of Similarity of Drilling Properties between Developed New Artificial Bone Model and Real Bone</b> <u>Daisuke Tawara</u> <sup>1</sup> , Tetsuya Tsujikami <sup>1</sup> , Yoshio Okano <sup>2</sup> <sup>1</sup> Ryukoku University, Japan. <sup>2</sup> Wetlab Co., Ltd., Japan.

<p>15:15 - 17:00 Hall</p>	<p><b>PS1 : Poster Short Presentation I</b> Chair(s): Kazuhiro Fujisaki (Hirosaki University, Japan)</p>
<p>PS1-1</p>	<p><b>Influence of Cold Flow on the Wear of Polyethylene Liner in Hip Prosthesis</b> <u>Yuusuke Kama</u><sup>1</sup>, Yuusei Nagatomo<sup>1</sup>, Changhee Cho<sup>1</sup>, Toshiharu Mori<sup>2</sup>, Makoto Kawasaki<sup>2</sup> <sup>1</sup> The University of Kitakyushu, Japan. <sup>2</sup> University of Occupational and Environmental Health, Japan.</p>
<p>PS1-2</p>	<p><b>Influence of Component Impingement on the Failure of Polyethylene Liner in Total Hip Replacement</b> <u>Shuhei Koga</u><sup>1</sup>, Changhee Cho<sup>1</sup>, Toshiharu Mori<sup>2</sup>, Makoto Kawasaki<sup>2</sup> <sup>1</sup> The University of Kitakyushu, Japan. <sup>2</sup> University of Occupational and Environmental Health, Japan.</p>
<p>PS1-3</p>	<p><b>Prediction of Thrombus Formation on the Wall by High Shear Rate on Various Blood Flows</b> <u>Yingming Yi</u><sup>1</sup>, Masaaki Tamagawa<sup>1</sup>, Takanori Yoshikawa<sup>1</sup>, Weiwei Shi<sup>1</sup> <sup>1</sup> Kyushu Institute of Technology, Japan.</p>
<p>PS1-4</p>	<p><b>Evaluation of Frozen Vascular Grafts by Using MRE - How to Keep the Characteristics of Bioprostheses?</b> <u>Shota Watanabe</u><sup>1</sup>, Yasunori Taira<sup>1</sup>, Hayato Suzuki<sup>2</sup>, Hidekazu Miura<sup>1</sup>, Yasuyuki Shiraishi<sup>1</sup>, Tomoyuki Yambe<sup>1</sup>, Shigeru Tadano<sup>2</sup> <sup>1</sup> Tohoku University, Japan. <sup>2</sup> Hokkaido University, Japan.</p>
<p>PS1-5</p>	<p><b>The in Vivo Influence of Exogenous Collagen Crosslink Augmentation on the Disc Integrity Following a Stabbing Injury – a Swine Model</b> Hsiu-Jen Lin<sup>1</sup>, Shih-Youeng Chuang<sup>2</sup>, Leou-Chyr Lin<sup>2</sup>, <u>Weng-Pin Chen</u><sup>1</sup> <sup>1</sup> National Taipei University of Technology, Taiwan. <sup>2</sup> National Defense Medical Center, Taiwan.</p>
<p>PS1-6</p>	<p><b>Viscoelastic Property of Porcine Liver by MRE using Micro-MRI</b> <u>Hayato Suzuki</u><sup>1</sup>, Satoshi Yamada<sup>1</sup>, Masahiro Todoh<sup>1</sup>, Shigeru Tadano<sup>1</sup> <sup>1</sup> Hokkaido University, Japan.</p>
<p>PS1-7</p>	<p><b>The Effect of the Density of Anti-SSEA-1 Antibody Immobilized on Microfluidic Channel on iPS Cell Rolling</b> <u>Akihisa Otake</u><sup>1</sup>, Atsushi Mahara<sup>1</sup>, Tetsuji Yamaoka<sup>1</sup> <sup>1</sup> National Cerebral and Cardiovascular Center Research Institute, Japan.</p>
<p>PS1-8</p>	<p><b>A Biomimetic Sealing System for a Rotating Shaft (Part 1: Development and Performance Tests)</b> <u>Takuro Honda</u><sup>1</sup>, Yoshitaka Nakanishi<sup>1</sup>, Yuta Nakashima<sup>1</sup>, Hidehiko Higaki<sup>2</sup> <sup>1</sup> Kumamoto University, Japan. <sup>2</sup> Kyushu Sangyo University, Japan.</p>
<p>PS1-9</p>	<p><b>Noninvasive Measurement of Drug Permeation in the Skin</b> <u>Shunsuke Shigeta</u><sup>1</sup>, Kenji Kikuchi<sup>1</sup>, Keiko Numayama<sup>1</sup>, Takuji Ishikawa<sup>1</sup> <sup>1</sup> Tohoku University, Japan.</p>
<p>PS1-10</p>	<p><b>Swimming Behavior of a Model Ciliate near a Fluid-Air or a Fluid-Solid Interface</b> <u>Junichi Manabe</u><sup>1</sup>, Toshihiro Omori<sup>1</sup>, Yohsuke Imo<sup>1</sup>, Takuji Ishikawa<sup>1</sup> <sup>1</sup> Tohoku University, Japan.</p>

PS1-11	<p><b>Experimental Measurements of Thrombus Formation under Fluid Flow in Micro Channel</b>  <u>Kazuki Koike</u><sup>1</sup>, Ken-ichi Tsubota<sup>1</sup>, Hao Liu<sup>1</sup>  <sup>1</sup> Chiba University, Japan.</p>
PS1-12	<p><b>Acoustic Source Detection of Realistic Airway Model Using Microphone Array System and Aeroacoustic Analysis</b>  <u>Saputra Gabriel Pramudita</u><sup>1</sup>, Nozaki Kazunori<sup>2</sup>, Ii Satoshi<sup>1</sup>, Habukawa Chizu<sup>3</sup>, Wada Shigeo<sup>1</sup>  <sup>1</sup> Osaka University, Japan. <sup>2</sup> Osaka University Dental Hospital, Japan. <sup>3</sup> Minami Wakayama Medical Center, Japan.</p>
PS1-13	<p><b>Regional Specific Adaptation of the Vascular Cell Glycocalyx in Tail-Suspended Rats</b>  Hongyan Kang<sup>1</sup>, <u>Xiaoyan Deng</u><sup>1</sup>  <sup>1</sup> Beihang University, China.</p>
PS1-14	<p><b>Reconstruction of a 3D Whole Dynamic Heart Model Based on the 3D Echo Data</b>  <u>Hikaru Yoshizawa</u><sup>1</sup>, Akio Goda<sup>1</sup>, Hitoshi Kimura<sup>1</sup>, Norio Inou<sup>1</sup>, Yasuhiro Nakajima<sup>2</sup>, Konomi Sakata<sup>3</sup>  <sup>1</sup> Tokyo Institute of Technology, Japan. <sup>2</sup> YD, LTD., Japan. <sup>3</sup> Kyorin University, Japan.</p>
PS1-15	<p><b>Micro-CT-Based Morphological Measurement of Mouse Acinar Cluster and the Oxygen Diffusion Analysis</b>  <u>Luosha Xiao</u><sup>1</sup>, Toshihiro Sera<sup>2</sup>, Kenichiro Koshiyama<sup>1</sup>, Shigeo Wada<sup>1</sup>  <sup>1</sup> Osaka University, Japan. <sup>2</sup> Kyushu University, Japan.</p>
PS1-16	<p><b>Clinical Application of Speckle-Tracking for Measuring Diameter Changes of the Carotid Artery</b>  <u>Shiori Yauchi</u><sup>1</sup>, Yusuke Akama<sup>1</sup>, Kiyomi Niki<sup>1</sup>, Jouji Hayabuchi<sup>1</sup>, Motoaki Sugawara<sup>2</sup>  <sup>1</sup> Tokyo City University, Japan. <sup>2</sup> Himeji Dokkyo University, Japan.</p>
PS1-17	<p><b>Quantifying the Interplay between Bicuspid Aortic Valve and Aortic Hemodynamics: an Integrative Computational Study</b>  <u>Takashi Fujiwara</u><sup>1</sup>, Fuyou Liang<sup>2</sup>, Ken-ichi Tsubota<sup>1</sup>, Koichi Sugimoto<sup>3</sup>, Hao Liu<sup>1,2</sup>  <sup>1</sup> Chiba University, Japan. <sup>2</sup> Shanghai Jiao Tong University, China. <sup>3</sup> The Royal Children's Hospital Melbourne, Australia.</p>
PS1-18	<p><b>Simulation of the Cardiovascular Autonomic Functions: Integrating the Cardiovascular System and the Autonomic Nervous System</b>  <u>Weiwei Jin</u><sup>1</sup>, Fuyou Liang<sup>2</sup>, Liu Hao<sup>1,2</sup>  <sup>1</sup> Chiba University, Japan. <sup>2</sup> Shanghai Jiao Tong University, China.</p>
PS1-19	<p><b>Lesion Size Comparison of Catheter Ablation between Open Irrigation and Vibration under No Flow Condition</b>  <u>Kaihong Yu</u><sup>1</sup>, Tetsui Yamashita<sup>2</sup>, Shigeaki Shingyochi<sup>3</sup>, Kazuo Matsumoto<sup>4</sup>, Makoto Ohta<sup>1</sup>  <sup>1</sup> Tohoku University, Japan. <sup>2</sup> JMS Co. Ltd., Japan. <sup>3</sup> NIDEC Copal Electronics Corp., Japan. <sup>4</sup> Saitama Medical University, Japan.</p>
PS1-20	<p><b>Numerical Simulation in a Coronary Artery Stenosis before and after Stenting</b>  <u>Feng Gao</u><sup>1</sup>  <sup>1</sup> Materialise Japan K.K, Japan.</p>



PS1-21	<p><b>Control of Grand Jet? Landing and Ankle-Foot Kinematics in Young Ballet Dancers with Chronic Ankle Instability</b>  <u>Tzu-Han Lee</u><sup>1</sup>, Hsiu-Chen Lin<sup>2</sup>, Yi-Fen Shih<sup>1</sup>, WC Hsu<sup>3</sup>, HL Chen<sup>4</sup>  <sup>1</sup> National Yang-Ming University, Taiwan. <sup>2</sup> China Medical University, Taiwan. <sup>3</sup> National Taiwan University of Science and Technology, Taiwan. <sup>4</sup> National Taiwan University, Taiwan.</p>
<p><b>15:15 - 17:00</b>  <b>Room A</b></p>	<p><b>PS2 : Poster Short Presentation II</b>  <b>Chair(s): Masahiro Todoh (Hokkaido University, Japan)</b></p>
PS2-1	<p><b>Numerical Investigation of the Effects of Gravity on Human Cardiovascular System</b>  <u>Xiancheng Zhang</u><sup>1</sup>, Hao Liu<sup>1,2</sup>  <sup>1</sup> Chiba University, Japan. <sup>2</sup> Shanghai Jiao Tong University, China.</p>
PS2-2	<p><b>The Effect of Heterogeneous Ventilation on the Airway Flow and Particle Deposition in Human Lung</b>  <u>Hiroaki Kuninaga</u><sup>1</sup>, Toshihiro Sera<sup>2</sup>, Kazuaki Fukasaku<sup>3</sup>, Hideo Yokota<sup>3</sup>, Masao Tanaka<sup>1</sup>  <sup>1</sup> Osaka University, Japan. <sup>2</sup> Kyushu University, Japan. <sup>3</sup> RIKEN, Japan.</p>
PS2-3	<p><b>Label Free Imaging of Atherosclerotic Lesions Using Stimulated Raman Scattering, Second Harmonic Generation, and Two-Photon Fluorescence Microscopy</b>  <u>Takuya Aoki</u><sup>1</sup>, Tomoyo Tao<sup>1</sup>, Syuichiro Fukushima<sup>1</sup>, Tsutomu Araki<sup>1</sup>, Mamoru Hashimoto<sup>1</sup>  <sup>1</sup> Osaka University, Japan.</p>
PS2-4	<p><b>Construction of Skin Wound Healing Model and Effects of Cyclic Stretching on Fibroblast Infiltration</b>  <u>Keisuke Chiba</u><sup>1</sup>, Kaori Shikano<sup>1</sup>, Shogo Miyata<sup>1</sup>  <sup>1</sup> Keio University, Japan.</p>
PS2-5	<p><b>The Effect of Interstitial Flow on the Invasion Ability and Morphology of Glioma Stem Cells</b>  <u>Naoko Namba</u><sup>1</sup>, Sotaro Taki<sup>1</sup>, Ryo Suso<sup>1</sup>  <sup>1</sup> Keio University, Japan.</p>
PS2-6	<p><b>Cyclic Tensile Strain Regulates Gap Junction Intercellular Communication between Tenocytes in Vitro in a Strain Magnitude-Dependent Manner</b>  <u>Hai Cheng Pian</u><sup>1</sup>, Naoya Kurihara<sup>1</sup>, Eijiro Maeda<sup>1</sup>, Toshiro Ohashi<sup>1</sup>  <sup>1</sup> Hokkaido University, Japan.</p>
PS2-7	<p><b>Changes in Cellular Monolayer Dynamics by External Load</b>  <u>Bomi Gweon</u><sup>1</sup>, Yujin Shin<sup>1</sup>, Chan Young Park<sup>2</sup>, Jennifer Shin<sup>3</sup>, Nadar Taheri Qazvini<sup>2</sup>, James P. Butler<sup>2,4</sup>, Jeffrey J. Fredberg<sup>2</sup>  <sup>1</sup> Hanyang University, Korea. <sup>2</sup> Harvard University, USA. <sup>3</sup> KAIST, Korea. <sup>4</sup> Harvard Medical School, USA.</p>
PS2-8	<p><b>Investigating of Skin Behavior under Compression Using a Pendulum Test</b>  <u>Moon Jeong Kang</u><sup>1</sup>, Young Nam Jo<sup>1</sup>, Hong Hee Yoo<sup>1</sup>  <sup>1</sup> Hanyang University, Korea.</p>

PS2-9	<p><b>Integration of Microfluidic Chips with Cellular Traction Measuring Systems for Studying Differential Collective Cell Migration</b>  <u>Hwanseok Jang</u><sup>1</sup>, Chan Young Park<sup>2</sup>, Jennifer H. Shin<sup>3</sup>, Jeffrey J. Fredberg<sup>2</sup>, Yongdoo Park<sup>1</sup>  <sup>1</sup> Korea University, Korea. <sup>2</sup> Harvard University, USA. <sup>3</sup> KAIST, Korea.</p>
PS2-10	<p><b>Three-Dimensional Directional Control of Dendrites of Cultured Neuronal Cells by Using Microshapes</b>  <u>Masashi Koizumi</u><sup>1</sup>, Akira Kakuta<sup>1</sup>, Shigeru Aomura<sup>2</sup>, Hiromichi Nakadate<sup>2</sup>  <sup>1</sup> Tokyo National College of Technology. <sup>2</sup> Tokyo Metropolitan University.</p>
PS2-11	<p><b>Observation of Diacylglycerol Distribution induced by Mechanical Stimulus in Vascular Endothelial Cells</b>  <u>Masataka Arai</u><sup>1</sup>, Shota Hori<sup>1</sup>, Satoshi Miyamoto<sup>1</sup>, Kazuhiro Nakashima<sup>1</sup>, Toshihiro Sera<sup>1</sup>, Susumu Kudo<sup>1</sup>  <sup>1</sup> Kyushu University, Japan.</p>
PS2-12	<p><b>Development of FRET Mechanical Sensor to Visualize Cell–Material Interactions</b>  <u>Yusuke Kambe</u><sup>1</sup>, Katsura Kojima<sup>2</sup>, Naohide Tomita<sup>3</sup>, Yasushi Tamada<sup>4</sup>, Tetsuji Yamaoka<sup>1</sup>  <sup>1</sup> National Cerebral and Cardiovascular Center Research Institute, Japan. <sup>2</sup> National Institute of Agrobiological Sciences, Japan.  <sup>3</sup> Kyoto University, Japan. <sup>4</sup> Shinshu University, Japan.</p>
PS2-13	<p><b>Dynamics of Actin Filaments during Adhesion Process of MC3T3-E1 Cells to Substrate</b>  <u>Junfeng Wang</u><sup>1</sup>, Shukei Sugita<sup>1</sup>, Kazuaki Nagayama<sup>1,2</sup>, Takeo Matsumoto<sup>1</sup>  <sup>1</sup> Nagoya Institute of Technology, Japan. <sup>2</sup> Ibaraki University, Japan.</p>
PS2-14	<p><b>Observation of Cellular Response to Oxygen Tension Using Microfluidic Devices</b>  <u>Naoya Fujitaka</u><sup>1</sup>, Shuichiro Fukushima<sup>1</sup>, Mamoru Hashimoto<sup>1</sup>, Kenichi Funamoto<sup>2</sup>, Tsutomu Araki<sup>1</sup>  <sup>1</sup> Osaka University, Japan. <sup>2</sup> Tohoku University, Japan.</p>
PS2-15	<p><b>Momentum Transfer from Propagating Shock Waves to Single Cells</b>  <u>Toru Takahashi</u><sup>1</sup>, Akira Tsukamoto<sup>1</sup>, Keiichi Nakagawa<sup>2</sup>, Takashi Ushida<sup>2</sup>, Shigeru Tada<sup>1</sup>  <sup>1</sup> National Defense Academy, Japan. <sup>2</sup> The University of Tokyo, Japan.</p>
PS2-16	<p><b>Mitochondria Dynamics in Human Aortic Endothelial Cells under Supra-Physiologic Level Cyclic Stretches</b>  <u>Megumi Baba</u><sup>1</sup>, Akira Tsukamoto<sup>1</sup>, Aya Shinmura<sup>1</sup>, Koki Takemura<sup>1</sup>, Taku Amou<sup>1</sup>, Takashi Ushida<sup>2</sup>, Shigeru Tada<sup>1</sup>  <sup>1</sup> National Defense Academy, Japan. <sup>2</sup> The University of Tokyo, Japan.</p>
PS2-17	<p><b>Development of Sensing System for Three-Dimensional Shape and Local Mechanical Properties on Living Tissues</b>  <u>Ken-ichi Konno</u><sup>1</sup>, Tadashi Kosawada<sup>2</sup>  <sup>1</sup> National Institute of Technology, Tsuruoka College, Japan. <sup>2</sup> Yamagata University, Japan.</p>
PS2-18	<p><b>Regulation of Microglial Phenotype by Flow Induced Cytoskeletal Alterations</b>  <u>Eun Young Park</u><sup>1</sup>, Ung Hyun Ko<sup>1</sup>, Song Ih Ahn<sup>1</sup>, Jin-Sung Park<sup>1</sup>, Jennifer H. Shin<sup>1</sup>  <sup>1</sup> Korea Advanced Institute of Science and Technology, Korea.</p>

PS2-19	<p><b>Control of Fibrosis by Atmospheric Pressure Plasma</b>  <u>Kijung Kim</u><sup>1</sup>, Bomi Gweon<sup>1</sup>, Mina Kim<sup>1</sup>, Minam Lee<sup>1</sup>, Jinseung Choung<sup>1</sup>, Wonho Choe<sup>1</sup>, Jennifer H. Shin<sup>1</sup>  <sup>1</sup> Korea Advanced Institute of Science and Technology, Korea.</p>
PS2-20	<p><b>Fracture Behaviors of Biological Soft Tissue Observed by Indentation Tests</b>  <u>Katsuya Igarashi</u><sup>1</sup>, Atsushi Sakuma<sup>1</sup>, Naoki Torii<sup>1</sup>, Ippei Tanaka<sup>1</sup>  <sup>1</sup> Tokyo University of Agriculture and Technology, Japan.</p>
<b>15:15 - 17:00 Room B</b>	<p><b>PS3 : Poster Short Presentation III</b>  <b>Chair(s): Eijiro Maeda (Hokkaido University, Japan)</b></p>
PS3-1	<p><b>Hydrodynamic Interaction between the Small Microparticles and Red Blood Cells in Microchannel</b>  <u>Noaki Takeishi</u><sup>1</sup>, Yohsuke Imai<sup>1</sup>, Takami Yamaguchi<sup>1</sup>, Takuji Ishikawa<sup>1</sup>  <sup>1</sup> Tohoku University, Japan.</p>
PS3-2	<p><b>Orientation Angle of a Single Red Blood Cell during Sedimentation</b>  <u>Daiki Matsunaga</u><sup>1</sup>, Yohsuke Imai<sup>1</sup>, Christian Wagner<sup>2</sup>, Takuji Ishikawa<sup>1</sup>  <sup>1</sup> Tohoku University, Japan. <sup>2</sup> Saarland University.</p>
PS3-3	<p><b>Estimating Mattress Deformation with a Person in the Supine Position Using Biomechanical Simulation</b>  <u>Takashi Funai</u><sup>1,2</sup>, Taka-aki Suzuki<sup>1</sup>, Sakiko Nakamura<sup>2</sup>, Hideo Yokota<sup>2</sup>, Yasumasa Hakamata<sup>3</sup>, Fumiaki Maejima<sup>3</sup>  <sup>1</sup> Industrial Research Institute of Shizuoka Prefecture, Japan. <sup>2</sup> RIKEN Center for Advanced Photonics, Japan. <sup>3</sup> Softpren Industry Corporation, Japan.</p>
PS3-4	<p><b>Development of Asymmetric Stent for Treatment of Eccentric Plaque</b>  <u>Achmad Syaifudin</u><sup>1,2</sup>, Katsuhiko Sasaki<sup>2</sup>, Ryo Takeda<sup>2</sup>  <sup>1</sup> Institut Teknologi Sepuluh Nopember, Indonesia. <sup>2</sup> Hokkaido University, Japan.</p>
PS3-5	<p><b>Molecular Perspective of Water Permeability Changes in Phospholipid/Cholesterol Bilayer under Mechanical Stresses</b>  <u>Taiki Shigematsu</u><sup>1</sup>, Kenichiro Koshiyama<sup>1</sup>, Ryotaro Kurumatani<sup>1</sup>, Shigeo Wada<sup>1</sup>  <sup>1</sup> Osaka University, Japan.</p>
PS3-6	<p><b>Clarification of Relationship between Gastric Mixing and Movement of Wall</b>  <u>Taimei Miyagawa</u><sup>1</sup>, Yohsuke Imai<sup>1</sup>, Shunichi Ishida<sup>1</sup>, Takami Yamaguchi<sup>1</sup>, Takuji Ishikawa<sup>1</sup>  <sup>1</sup> Tohoku University, Japan.</p>
PS3-7	<p><b>Development of a Numerical Model of Cytoskeleton Dynamics</b>  <u>Fumiyasu Saito</u><sup>1</sup>, Yohsuke Imai<sup>1</sup>, Shunichi Ishida<sup>1</sup>, Toshihiro Omori<sup>1</sup>, Takuji Ishikawa<sup>1</sup>  <sup>1</sup> Tohoku University, Japan.</p>
PS3-8	<p><b>Computer Simulation of Medicinal Effect on Thrombus Formation Using Particle Method</b>  <u>Yutaka Endo</u><sup>1</sup>, Ken-ichi Tsubota<sup>1</sup>, Kouichi Sugimoto<sup>2</sup>, Hao Liu<sup>1</sup>  <sup>1</sup> Chiba University, Japan. <sup>2</sup> Royal Children's Hospital Melbourne, Australia.</p>

PS3-9	<p><b>Principal Features of Ankle Joint Angle during Gait in Typically Developing Children Revealed by PCA with Phase and Amplitude Separation</b>  <u>Yoko Nakamura</u><sup>1</sup>, Akira Sawatome<sup>1</sup>, Mitsunori Tada<sup>2</sup>, Hiroshi Takemura<sup>1</sup>  <sup>1</sup> Tokyo University of Science, Japan. <sup>2</sup> National Institute of Advanced Industrial Science and Technology, Japan.</p>
PS3-10	<p><b>Comparative Study of Gait Stability in Children and Adults by Using Inclination</b>  <u>Akira Sawatome</u><sup>1</sup>, Mitsunori Tada<sup>2</sup>, Hiroshi Takemura<sup>1</sup>, Makiko Kouchi<sup>2</sup>, Masaaki Mochimaru<sup>2</sup>  <sup>1</sup> Tokyo University of Science, Japan. <sup>2</sup> National Institute of Advanced Industrial Science and Technology, Japan.</p>
PS3-11	<p><b>Mechanical Influence of Advanced Shape-Memory Alloy Stents during Deployment</b>  <u>Yukiko Tomooka</u><sup>1</sup>, Katsuhiko Sasaki<sup>1</sup>, Ryo Takeda<sup>1</sup>  <sup>1</sup> Hokkaido University, Japan.</p>
PS3-12	<p><b>Finite Element Analysis of Lumbar Nerve Root Compression by Intervertebral Disc Degeneration</b>  <u>Masni Azian Binti Akiah</u><sup>1,2</sup>, Masao Tanaka<sup>2</sup>  <sup>1</sup> Universiti Teknikal Malaysia Melaka, Malaysia. <sup>2</sup> Osaka University, Japan.</p>
PS3-13	<p><b>Development of an Efficient Upper Body Finite Element Model with Active Continuum Neck Muscle</b>  <u>In Seok Han</u><sup>1</sup>, Young Eun Kim<sup>1</sup>  <sup>1</sup> Dankook University, Korea.</p>
PS3-14	<p><b>Remodeling Simulation for Cancellous Bone Structure Analysis of Proximal Femur under Disuse Conditions</b>  <u>Makoto Shimizu</u><sup>1</sup>, Ji Yean Kwon<sup>2</sup>, Masao Tanaka<sup>1</sup>  <sup>1</sup> Osaka University, Japan. <sup>2</sup> Dongguk University, Korea.</p>
PS3-15	<p><b>Motion-Capture-Based Walking Simulation Adapted to Laser-Scanned Large-Scale Complex as-Built Environments for Accessibility Evaluation</b>  <u>Tsubasa Maruyama</u><sup>1</sup>, Satoshi Kanai<sup>1</sup>, Hiroaki Date<sup>1</sup>, Mitsunori Tada<sup>2</sup>  <sup>1</sup> Hokkaido University, JAPAN. <sup>2</sup> National Institute of Advanced Industrial Science and Technology, JAPAN.</p>
PS3-16	<p><b>Missing Value Estimation for Reconstructing Individual Hand Model from a Small Number of Known Dimensions</b>  <u>Ryuki Nohara</u><sup>1</sup>, Yui Endo<sup>2</sup>, Mitsunori Tada<sup>2</sup>, Hiroshi Takemura<sup>1</sup>  <sup>1</sup> Tokyo University of Science, Japan. <sup>2</sup> National Institute of Advanced Industrial Science and Technology, Japan.</p>
PS3-17	<p><b>Experimental Study on Drilling Force for Jawbone in Oral Implant Surgery using Polymeric Model</b>  <u>Mohammad Aimaduddin Atiq Bin Kamisan</u><sup>1</sup>, Naoki Takano<sup>1</sup>, Shinichi Abe<sup>2</sup>  <sup>1</sup> Keio University, Japan. <sup>2</sup> Tokyo Dental College, Japan.</p>
PS3-18	<p><b>The Influences of Bilateral Sagittal Split Ramus Osteotomy on Temporomandibular Joint</b>  Zhan Liu<sup>1</sup>, Yingli Qian<sup>2</sup>, <u>Yuanli Zhang</u><sup>1</sup>, Yubo Fan<sup>3</sup>  <sup>1</sup> Sichuan University, China. <sup>2</sup> AVIC, China. <sup>3</sup> Beihang University, China.</p>
PS3-19	<p><b>Development of a Multipoint Orthodontic Six Axis Forces Measuring Device for Dentist's Training</b>  <u>Yoshiyuki Midorikawa</u><sup>1</sup>, Hiroshi Takemura<sup>1</sup>, Hiroshi Mizoguchi<sup>1</sup>, Kohei Soga<sup>1</sup>, Masao Kamimura<sup>1</sup>, Kazuhiro Suga<sup>1</sup>, Wei-jen Lai<sup>2</sup>, Zusei Kanno<sup>2</sup>, Motohiro Uo<sup>2</sup>  <sup>1</sup> Tokyo University of Science, Japan. <sup>2</sup> Tokyo Medical and Dental University, Japan.</p>

PS3-20	<p><b>Revealing the Dynamics and Molecular Regulation of Actin Stress Fibers</b>  <u>Tsubasa S. Matsui</u><sup>1</sup>, Shinji Deguchi<sup>1</sup>  <sup>1</sup> Nagoya Institute of Technology, Japan.</p>
15:15 - 17:00 Room C	<p><b>PS4 : Poster Short Presentation IV</b>  <b>Chair(s): Satoshi Yamada (Hokkaido University, Japan)</b></p>
PS4-1	<p><b>A Preliminary Observation of Variability in Dynamic Ankle Joint Stiffness during the Propulsive Phase of Gait</b>  <u>Nooranida Arifin</u><sup>1</sup>, Noor Azuan Abu Osman<sup>1</sup>  <sup>1</sup> University of Malaya, Malaysia.</p>
PS4-2	<p><b>Musculoskeletal Simulation for Design of Supportive underwear for Pelvic Floor Disorder</b>  <u>Tomohiro Nishiki</u><sup>1</sup>, Daisuke Tawara<sup>1</sup>, Tetsuya Tsujikami<sup>1</sup>, Sanae Ninomiya<sup>2</sup>, Hisayo Okayama<sup>3</sup>, Shigehiro Morikawa<sup>3</sup>, Jiro Sakamoto<sup>4</sup>  <sup>1</sup> Ryukoku University, Japan. <sup>2</sup> Graduate School of Medicine Kyoto University, Japan. <sup>3</sup> Shiga University, Japan. <sup>4</sup> Kanazawa University, Japan.</p>
PS4-3	<p><b>Effects of Forearm Position on the Wrist Flexion and Extension Torques</b>          Yuichi Yoshii<sup>1</sup>, <u>Hiroshi Yuine</u><sup>1</sup>, Kazuki Ohashi<sup>1</sup>, Wen-lin Tung<sup>2</sup>, Tomoo Ishii<sup>1</sup>  <sup>1</sup> Tokyo Medical University Ibaraki Medical Center, Japan. <sup>2</sup> Ibaraki Prefectural University of Health Sciences, Japan.</p>
PS4-4	<p><b>Step Height on Biomechanical Characteristics in Pinnacle Trainer Exercise</b>  <u>Min-Chieh Chuang</u><sup>1</sup>, Yu-Lin You<sup>1</sup>, Chen-Kai Chien<sup>1</sup>, Yi-Jung Tsai<sup>1</sup>, Li-Chieh Kuo<sup>1</sup>, Fong-Chin Su<sup>1</sup>  <sup>1</sup> National Cheng Kung University, Taiwan.</p>
PS4-5	<p><b>Musculoskeletal Hand Model with Individual Differences</b>  <u>Masaya Kondo</u><sup>1</sup>, Mitsunori Tada<sup>2</sup>, Yuichi Kurita<sup>3</sup>, Tsukasa Ogasawara<sup>1</sup>  <sup>1</sup> Nara Institute of Science and Technology, Japan. <sup>2</sup> National Institute of Advanced Industrial Science and Technology, Japan.  <sup>3</sup> Hiroshima University, Japan.</p>
PS4-6	<p><b>A Preliminary Study of Finger Applied Force on Hand-Held Communicating Devices</b>  <u>Ying-Ming Liu</u><sup>1</sup>, Hsiao-Feng Chieh<sup>2</sup>, Li-Chieh Kuo<sup>2</sup>  <sup>1</sup> The Presbyterian Church of Taiwan, Taiwan. <sup>2</sup> National Cheng Kung University, Taiwan.</p>
PS4-7	<p><b>Effects of Stroke Patterns on Kinematics of the Upper Extremity and Propulsion Forces: a Preliminary Study</b>  <u>Chien-Ju Lin</u><sup>1</sup>, Hsiao-Feng Chieh<sup>1</sup>, Li-Chieh Kuo<sup>1</sup>, Fong-Chin Su<sup>1</sup>  <sup>1</sup> National Cheng Kung University, Taiwan.</p>
PS4-8	<p><b>Detection of Microdamage in Rabbit Patellar Tendon under Impact Tensile Load by Acoustic Emission</b>  <u>Fumito Matsuoka</u><sup>1</sup>, Shuichi Wakayama<sup>2</sup>, Takenobu Sakai<sup>3</sup>, Ei Yamamoto<sup>4</sup>  <sup>1</sup> Graduate School of Tokyo Metropolitan University, Japan. <sup>2</sup> Tokyo Metropolitan University, Japan. <sup>3</sup> Saitama University, Japan. <sup>4</sup> Kinki University, Japan.</p>

PS4-9	<p><b>Analysis of the Change of Paraspinal Muscle Forces According to the Fixation Level of the Lumbar Spine</b>  <u>H. W. Choi</u><sup>1</sup>, <u>Y. E. Kim</u><sup>1</sup>  <sup>1</sup> Dankook University, Korea.</p>
PS4-10	<p><b>Micro-Tomographic Study on Viscoelastic Behavior of articular cartilage using Dynamic Optical Coherence Straingraphy</b>  <u>Hiroki Nakayama</u><sup>1</sup>, Souichi Saeki<sup>1</sup>, Kiichi Hasegawa<sup>1</sup>, Mitsuhiko Ikebuchi<sup>2</sup>, Nobuo Niimi<sup>3</sup>, Yoshito Tsukahara<sup>3</sup>  <sup>1</sup> Osaka City University, Japan. <sup>2</sup> Osaka City University Hospital, Japan. <sup>3</sup> Nippon SIGMAX Co.Ltd.</p>
PS4-11	<p><b>External Mechanical Stimulation Supports Ex Vivo Maturation of Neonatal Articular Cartilage</b>  <u>Andy TH Wu</u><sup>1</sup>, Xinyu Guo<sup>2</sup>, Takashi Ushida<sup>1</sup>, Katsuko S Furukawa<sup>1</sup>  <sup>1</sup> The University of Tokyo, Japan. <sup>2</sup> Dalian University of Technology, China.</p>
PS4-12	<p><b>Time-Varying Non-Linear Feedback Gain of the Joints of Stance Leg Based on the Compliant Legged Walking Model</b>  <u>Hyerim Lim</u><sup>1</sup>, Sukyung Park<sup>1</sup>  <sup>1</sup> KAIST, Korea.</p>
PS4-13	<p><b>Stress Distributions in Temporomandibular Joint Before and After Bilateral Sagittal Split Ramus Osteotomy</b>  <u>Yuanli Zhang</u><sup>1</sup>, Xianchao Xu<sup>1</sup>, Yubo Fan<sup>2</sup>, Zhan Liu<sup>1</sup>  <sup>1</sup> Sichuan University, China. <sup>2</sup> Beihang University, China.</p>
PS4-14	<p><b>Evaluation of a Method for Identifying Knee Joint CoR Using IMUs</b>  <u>Lu Yu</u><sup>1</sup>, Keisuke Okuzumi<sup>1</sup>, Ryo Takeda<sup>2</sup>, Katsuhiko Sasaki<sup>2</sup>  <sup>1</sup> Hokkaido University, Japan.</p>
PS4-15	<p><b>Analysis of Regional Bone Quality in Cervical Vertebra for Pedicle Screw Fixation</b>  <u>Ho-Jung Cho</u><sup>1</sup>, Dai-Soon Kwak<sup>1</sup>, Moon-Kyu Kim<sup>2</sup>  <sup>1</sup> The Catholic University of Korea, Korea. <sup>2</sup> University of Ulsan, Korea.</p>
PS4-16	<p><b>Analysis of Movement Axes of the Ankle and Subtalar Joints: Relationship with the Articular Surfaces of the Talus</b>  <u>Ho-Jung Cho</u><sup>1</sup>, Dai-Soon Kwak<sup>1</sup>, Ji-Young Jung<sup>1</sup>, In-Beom Kim<sup>1</sup>  <sup>1</sup> The Catholic University of Korea, Korea.</p>
PS4-17	<p><b>Fabrication of the Combination Treatment System of Cryosurgery and Hyperthermia Treatment Using Peltier Device with Ethanol Circulation as a Coolant</b>  <u>Daishi Takahashi</u><sup>1</sup>, Yousuke Taguchi<sup>1</sup>, Takenori Aida<sup>1</sup>  <sup>1</sup> Kitasato Juniou College of Health and Hygienic Sciences, Japan.</p>
PS4-18	<p><b>In Vivo Three-Dimensional Motion Analysis of Forearm during Pronation/Supination</b>  <u>Kiyoko Kazama</u><sup>1,2</sup>, Koichi Kobayashi<sup>1,3</sup>, Makoto Sakamoto<sup>1,3</sup>  <sup>1</sup> Niigata University, Japan. <sup>2</sup> Niigata Hand Surgery Foundation Hospital, Japan. <sup>3</sup> Niigata University School of Medicine, Japan.</p>

PS4-19	<p><b>Kinematic Analysis of Hip Joints in Twisting by the 2D-3D Registration Technique.</b> <u>Satoru Ikebe</u><sup>1</sup>, Yifeng Wang<sup>1</sup>, Hidehiko Higaki<sup>1</sup>, Yoshitaka Shiraishi<sup>2</sup>, Takeshi Shimoto<sup>3</sup>, Yoshitaka Nakanishi<sup>4</sup>, Daisuke Hara<sup>5</sup>, Satoshi Hamai<sup>5</sup>, Yasuharu Nakashima<sup>5</sup>, Yukihide Iwamoto<sup>5</sup> <sup>1</sup> Kyushu Sangyo University, Japan. <sup>2</sup> Ehime University, Japan. <sup>3</sup> Fukuoka Institute of Technology, Japan. <sup>4</sup> Kumamoto University, Japan. <sup>5</sup> Kyushu University, Japan.</p>
PS4-20	<p><b>Motion Analysis of Symmetry and Asymmetry Artificial Knee Joints during Stair-Climbing</b> <u>Yifeng Wang</u><sup>1</sup>, Satoru Ikebe<sup>1</sup>, Yoshitaka Shiraishi<sup>2</sup>, Takeshi Shimoto<sup>3</sup>, Yoshitaka Nakanishi<sup>4</sup>, Daisuke Hara<sup>5</sup>, Satoshi Hamai<sup>5</sup>, Yasuharu Nakashima<sup>5</sup>, Yukihide Iwamoto<sup>5</sup>, Hidehiko Higaki<sup>1</sup> <sup>1</sup> Kyushu Sangyo University, Japan. <sup>2</sup> Ehime University, Japan. <sup>3</sup> Fukuoka Institute of Technology, Japan. <sup>4</sup> Kumamoto University, Japan. <sup>5</sup> Kyushu University, Japan.</p>

## Friday, 18 September 2015

8:30 - 9:30 Hall	<p><b>OS3 : Rehabilitation Devices I</b></p> <p><b>Organizer(s): Prof. Fong-Chin Su (National Cheng Kung University, Taiwan)</b>  <b>Chair(s): Chikamune Wada (Kyushu Institute of Technology, Japan)</b>  <b>Tung-Wu Lu (National Taiwan University, Taiwan)</b></p>
8:30 - 8:45 OS3-1	<p><b>A Study of New Alert System Using Multi-Sensory Stimuli to Assist Patients with Cognitive Impairment in Wheelchair Operation.</b></p> <p><u>Toshiaki Tanaka</u><sup>1</sup>, Yasuhiro Nakajima<sup>2</sup>, Hidefumi Matsushita<sup>3</sup>, Shunichi Sugihara<sup>3</sup>, Takashi Izumi<sup>4</sup>, Norio Kato<sup>5</sup>, Tomoya Miyasaka<sup>5</sup></p> <p><sup>1</sup> The University of Tokyo, Japan. <sup>2</sup> Hokkaido Research Organization, Japan. <sup>3</sup> Sapporo Shuyukai Hospital, Japan. <sup>4</sup> Tokai University, Japan. <sup>5</sup> Hokkaido University of Science, Japan.</p>
8:45 - 9:00 OS3-2	<p><b>Commercialization of the Multi Functional Electro-Larynx YOURTONEII and It's Further Development for Hands-Free Operation</b></p> <p><u>Mitsuo Hashiba</u><sup>1</sup>, Yasunori Sugai<sup>2</sup>, Tohru Ifukube<sup>3</sup></p> <p><sup>1</sup>Hokkaido Research Organization, Japan. <sup>2</sup> Densai Communication Inc., Japan. <sup>3</sup>The University of Tokyo, Japan.</p>
9:00 - 9:15 OS3-3	<p><b>Development of New Tele-Rehabilitation System Using Virtual Reality Technology for the Elderly and the Disabled Person</b></p> <p><u>Yasuhiro Nakajima</u><sup>1</sup>, Chikamune Wada<sup>2</sup>, Akira Kudo<sup>3</sup>, Shunichi Sugihara<sup>3</sup>, Takashi Izumi<sup>4</sup>, Tomoya Miyasaka<sup>5</sup>, Kohki Kuwano<sup>1</sup>, Daisuke Maeda<sup>1</sup>, Toshiaki Tanaka<sup>6</sup></p> <p><sup>1</sup> Hokkaido Research Organization, Japan. <sup>2</sup> Kyushu Institute of Technology, Japan. <sup>3</sup> Sapporo Shuyukai Hospital, Japan. <sup>4</sup> Tokai University, Japan. <sup>5</sup> Hokkaido University of Science, Japan. <sup>6</sup> The University of Tokyo, Japan.</p>
9:15 - 9:30 OS3-4	<p><b>Motion Analysis of a Wearable Lower-Limb Robotic Exoskeleton in Assisting Sit-to-Stand Maneuver in Individuals with Spinal Cord Injuries</b></p> <p><u>Tung-Wu Lu</u><sup>1</sup>, Ting-Ming Wang<sup>1</sup>, Ming-I Lin<sup>1</sup>, Hsing-Po Huang<sup>1</sup>, Hui-Fen Mao<sup>1</sup>, Cheng-Hua Wu<sup>2</sup>, Jia-Da Li<sup>1</sup>, Jwu-Sheng Hu<sup>2</sup></p> <p><sup>1</sup> National Taiwan University, Taiwan. <sup>2</sup> National Chiao Tung University, Taiwan.</p>
8:30 - 9:45 Room A	<p><b>OS4 : Advanced Clinical Joint Biomechanics</b></p> <p><b>Organizer(s): Prof. Norimasa Iwasaki (Hokkaido University, Japan)</b>  <b>Chair(s): Hiromichi Fujie (Tokyo Metropolitan University, Japan)</b>  <b>Eiji Kondo (Hokkaido University, Japan)</b></p>
8:30 - 8:45 OS4-1	<p><b>Application of Advanced Sensing Technologies to Biomechanical Evaluation of the Knee Ligament Injury</b></p> <p><u>Yuichi Hoshino</u><sup>1,2</sup>, Ryosuke Kuroda<sup>2</sup>, Kouki Nagamune<sup>3</sup></p> <p><sup>1</sup> Kobe Kaisei Hospital, Japan. <sup>2</sup> Kobe University, Japan. <sup>3</sup> Fukui University, Japan.</p>
8:45 - 9:00 OS4-2	<p><b>In Vivo Kinematics of TKA with Various Design Prostheses in Deep Knee Bending</b></p> <p><u>Tetsuya Tomita</u><sup>1</sup>, Takaharu Yamazaki<sup>1</sup>, Kazuma Futai<sup>1</sup>, Keishi Iwamoto<sup>1</sup>, Hideki Yoshikawa<sup>1</sup>, Kazuomi Sugamoto<sup>1</sup></p> <p><sup>1</sup> Osaka University Graduate School of Medicine, Japan.</p>



9:00 - 9:15 OS4-3	<p><b>Analysis of Stress Distribution across the Elbow Joint in Baseball Players Using Computed Tomography Osteoabsorptiometry</b>  <u>Norimasa Iwasaki</u><sup>1</sup>, Daisuke Momma<sup>1</sup>, Tadanao Funakoshi<sup>1</sup>, Kazuhiro Fujisaki<sup>2</sup>, Shigeru Tadano<sup>3</sup>  <sup>1</sup> Hokkaido University Graduate School of Medicine, Japan. <sup>2</sup> Hirosaki University, Japan. <sup>3</sup> Hokkaido University Graduate School of Engineering, Japan.</p>
9:15 - 9:30 OS4-4	<p><b>Three-Dimensional Strain Distribution in the Attachment Area of the Anterior Cruciate Ligament during Anterior Translation to the Knee</b>  <u>Satoshi Yamakawa</u><sup>1</sup>, Richard E. Debski<sup>2</sup>, Hiromichi Fujie<sup>1</sup>  <sup>1</sup> Tokyo Metropolitan University, Japan. <sup>2</sup> University of Pittsburgh, USA.</p>
9:30 - 9:45 OS4-5	<p><b>Mechanical and Structural Changes in the Cartilage-Bone System as a Function of Degeneration - New Insight into the Mechanobiology of Osteoarthritis</b>  <u>Ashvin Thambyah</u><sup>1</sup>, Emily Hargrave-Thomas<sup>1</sup>, Mieke Nickien<sup>1</sup>, Rebekah Kim<sup>1</sup>, Neil D Broom<sup>1</sup>  <sup>1</sup> The University of Auckland, New Zealand.</p>

8:30 - 9:45 Room B	<p><b>GS1 : Cell and Tissue Biomechanics III</b>  <b>Chair(s): Hyungsuk Lee (Yonsei University, Korea)</b>  <b>Souichi Saeki (Osaka City University, Japan)</b></p>
8:30 - 8:45 GS1-12	<p><b>Theoretical Investigation of the Effects of Bone Lamellar Structure on the Interstitial Fluid Flow in Poroelastic Trabeculae</b>  <u>Yoshitaka Kameo</u><sup>1</sup>, Yoshihiro Ootao<sup>1</sup>, Masayuki Ishihara<sup>1</sup>  <sup>1</sup> Osaka Prefecture University, Japan.</p>
8:45 - 9:00 GS1-13	<p><b>Atomic Force Microscopy Study of Morphology and Mechanical Properties of Perineurium of Sciatic Nerve of Diabetic Rat</b>  <u>Cheng-Tao Chang</u><sup>1</sup>, Chou-Ching K. Lin<sup>2</sup>, Ming-Shaung Ju<sup>1</sup>  <sup>1</sup> National Cheng Kung University, Taiwan. <sup>2</sup> National Cheng Kung University Hospital, Taiwan.</p>
9:00 - 9:15 GS1-14	<p><b>In-Situ Real-Time Imaging of Intracellular Ca<sup>2+</sup> Increase in Cells under Uniaxial Mechanical Stretch</b>  <u>Akira Tsukamoto</u><sup>1</sup>, Takashi Ushida<sup>2</sup>, Shigeru Tada<sup>1</sup>  <sup>1</sup> National Defense Academy, Japan. <sup>2</sup> The University of Tokyo, Japan.</p>
9:15 - 9:30 GS1-15	<p><b>Difference in Mechanical Properties of Collagen Fibers in the Media and the Adventitia of the Porcine Thoracic Aorta</b>  <u>Shukei Sugita</u><sup>1</sup>, Hirooki Narita<sup>1</sup>, Takeo Matsumoto<sup>1</sup>  <sup>1</sup> Nagoya Institute of Technology, Japan.</p>
9:30 - 9:45 GS1-16	<p><b>Origin of the Strain-Dependent Mechanical Response in Extracellular Matrix</b>  <u>Jeonggyu Lee</u><sup>1</sup>, Yonghyuk Jeon<sup>1</sup>, Seunghan Jo<sup>1</sup>, Hyungsuk Lee<sup>1</sup>  <sup>1</sup> Yonsei University, Korea.</p>

10:00 - 11:15 Hall	<b>OS3 : Rehabilitation Devices II</b> <b>Organizer(s): Prof. Fong-Chin Su (National Cheng Kung University, Taiwan)</b> <b>Chair(s): Toshiaki Tanaka (The University of Tokyo, Japan)</b> <b>Lan-Yuen Guo (Kaohsiung Medical University, Taiwan)</b>
10:00 – 10:15 OS3-6	<b>Improvement of a Standing-up Motion Guidance System using an Inertial Sensor</b> <u>Chikamune Wada</u> <sup>1</sup> , Kiyotaka Eguchi <sup>1</sup> , Fang Jin <sup>1</sup> <sup>1</sup> Kyushu Institute of Technology, Japan.
10:15 - 10:30 OS3-7	<b>Clinical Measurement of a Load on the Foot Support to Confirm the Reference Value of the Wheelchair Standard in People with Cerebral Palsy</b> <u>Satoshi Shirogane</u> <sup>1</sup> , Takashi Handa <sup>2</sup> , Yoshihiko Kozai <sup>2</sup> , Yusuke Maeda <sup>3</sup> <sup>1</sup> Research Institute National Rehabilitation Center for Persons with Disabilities, Japan. <sup>2</sup> Saitama Industrial Technology Center, Japan. <sup>3</sup> Mejiro University, Japan.
10:30 - 10:45 OS3-8	<b>Postural Balance Control for Lower-Limb Exoskeleton Devices</b> <u>Kin Huat Low</u> <sup>1</sup> <sup>1</sup> Nanyang Technological University, Singapore.
10:45 - 11:00 OS3-9	<b>A Novel Pinnacle Trainer for Rehabilitation</b> <u>Cheng-Feng Lin</u> <sup>1</sup> <sup>1</sup> National Cheng Kung University, Taiwan.
11:00 - 11:15 OS3-10	<b>Reliability and Validity of a Novel 3-Dimensional Body Posture Evaluation System</b> <u>Lan-Yuen Guo</u> <sup>1</sup> , Shih-Ting Wang <sup>1</sup> , Yu-Chi Hsu <sup>1</sup> , Yi-Hsuan Yeh <sup>1</sup> , Yu-Lin Yu <sup>1</sup> , Chich-Haung Yang <sup>2</sup> <sup>1</sup> Kaohsiung Medical University, Taiwan. <sup>2</sup> Tzu-Chi University, Taiwan.

10:00 - 11:00 Room A	<b>OS5 : Mechanobiology and Tissue Engineering for Disease and Regeneration I</b> <b>Organizer(s): Prof. Josh Wu (National Cheng Kung University, Taiwan)</b> <b>Prof. Taiji Adachi (Kyoto University, Japan)</b> <b>Chair(s): Josh Wu (National Cheng Kung University, Taiwan)</b> <b>Taiji Adachi (Kyoto University, Japan)</b>
10:00 - 10:15 OS5-1	<b>Mechanobiology Studies of the Tissue Dynamics for Engineering Long Bile Canaliculi</b> <u>Qiushi Li</u> <sup>1</sup> , Ziwei Song <sup>1</sup> , Junjun Fan <sup>2</sup> , Shupeei Mo <sup>3</sup> , Virgile Viasnoff <sup>1</sup> , Peter So <sup>2,3</sup> , <u>Henry Yu</u> <sup>1,2</sup> <sup>1</sup> National University of Singapore, Singapore. <sup>2</sup> Singapore-MIT Alliance for Research and Technology. <sup>3</sup> Institute of Bioengineering and Nanotechnology, A*STAR. <sup>4</sup> Massachusetts Institute of Technology, USA.
10:15 - 10:30 OS5-2	<b>Harnessing Adipose Derived Stem Cells for Aging-Related Diseases - Combining Tissue and Genetic Engineering Approaches</b> <u>Tsung-Hsien Chen</u> <sup>1</sup> , <u>Tzu-Ying Chen</u> <sup>1</sup> , <u>Mei-Ru Chen</u> <sup>1</sup> , <u>Shan-Wen Liu</u> <sup>1</sup> , <u>Kurt MC Lin</u> <sup>1*#</sup> <sup>1</sup> National Health Research Institutes, Taiwan.
10:30 - 10:45 OS5-3	<b>Construction Method of Giant Engineered Tissues with Complex Hierarchical Structures</b> <u>Kazuuya Furusawa</u> <sup>1</sup> , Akimasa Fukui <sup>1</sup> , Naoki Sasaki <sup>1</sup> <sup>1</sup> Hokkaido University, Japan.

10:45 - 11:00 OS5-4	<b>Microenvironmental Stimuli to Differentiate Adipose-Derived Stem Cells for Injury Prevention in Nervous System</b> <u>Chia-Ching (Josh) Wu</u> <sup>1</sup> <sup>1</sup> National Cheng Kung University, Taiwan.
<b>10:00 - 11:00 Room B</b>	<b>GS1 : Cell and Tissue Biomechanics IV</b> <b>Chair(s): Katsuko Furukawa (The University of Tokyo, Japan)</b>
10:00 - 10:15 GS1-17	<b>Cellular Chirality Arising from the Self-Organization of the Actin Cytoskeleton</b> <u>Yee Han Tee</u> <sup>1</sup> , Tom Shemesh <sup>2</sup> , Visalatchi Thiagarajan <sup>1</sup> , Rizal Fajar Hariadi <sup>3</sup> , Karen L. Anderson <sup>4</sup> , Christopher Page <sup>4</sup> , Niels Volkmann <sup>4</sup> , Dorit Hanein <sup>4</sup> , Sivaraj Sivaramakrishnan <sup>3</sup> , Michael M. Kozlov <sup>5</sup> , Alexander D. Bershadsky <sup>1,6</sup> <sup>1</sup> National University of Singapore, Singapore. <sup>2</sup> Israel Institute of Technology, Israel. <sup>3</sup> University of Michigan, USA. <sup>4</sup> Sanford Burnham Medical Research Institute, USA. <sup>5</sup> Tel Aviv University, Israel. <sup>6</sup> Weizmann Institute of Science, Israel.
10:15 - 10:30 GS1-18	<b>Hydrostatic Pressure Activates Heterotrimeric G Proteins in Chondrocyte Progenitor Cells</b> <u>Kevin Montagne</u> <sup>1</sup> , Mutsuo Ogasawara <sup>1</sup> , Jeonghyun Kim <sup>1</sup> , Katsuko Furukawa <sup>1</sup> , Takashi Ushida <sup>1</sup> <sup>1</sup> University of Tokyo, Japan.
10:30 - 10:45 GS1-19	<b>Characterization of Kinematics and Forces within the Scattering Monolayer</b> <u>Youngbin Cho</u> <sup>1</sup> , Bomi Gweon <sup>2</sup> , Jacob Notbohm <sup>2</sup> , Ung Hyun Koh <sup>1</sup> , Hwanseok Jang <sup>3</sup> , Yongdoo Park <sup>3</sup> , Jennifer H. Shin <sup>1</sup> <sup>1</sup> KAIST, Korea. <sup>2</sup> Harvard University, USA. <sup>3</sup> Korea University, Korea.
10:45 - 11:00 GS1-20	<b>Cell Shape and Velocity during Migration in Swiss 3T3 Fibroblast</b> <u>Michiko Sugawara</u> <sup>1</sup> , Hiroshi Shimotsumagari <sup>1</sup> , Hao Liu <sup>1</sup> <sup>1</sup> Chiba University, Japan.
<b>10:00 - 11:00 Room C</b>	<b>GS4 : Molecular Biomechanics</b> <b>Chair(s): Naoki Sasaki (Hokkaido University, Japan) Shinji Deguchi (Nagoya Institute of Technology, Japan)</b>
10:00 - 10:15 GS4-1	<b>Roles of Nonmuscle Myosin II in Contractile Force Generation</b> <u>Shinji Deguchi</u> <sup>1</sup> , Sho Yokoyama <sup>1</sup> , Tsubasa S. Matsui <sup>1</sup> , Kagayaki Kato <sup>2</sup> <sup>1</sup> Nagoya Institute of Technology, Japan. <sup>2</sup> National Institutes of Natural Sciences, Japan.
10:15 - 10:30 GS4-2	<b>A Novel Method for Determining Elastic Constants of Biological Materials: the Debye-Waller Factor Measurement</b> <u>Naoki Sasaki</u> <sup>1</sup> , Hideki Shirakawa <sup>1</sup> , Tsutomu Nozoe <sup>1</sup> , Yuna Saitoh <sup>1</sup> , Kazuya Furusawa <sup>1</sup> <sup>1</sup> Hokkaido University, Japan.
10:30 - 10:45 GS4-3	<b>Mechanical Roles of Beta-Catenin for AJ-Mediated Force Transmission</b> <u>Koichiro Maki</u> <sup>1</sup> , Sung-Woong Han <sup>1</sup> , Taiji Adachi <sup>1</sup> <sup>1</sup> Kyoto University, Japan.

10:45 - 11:00 GS4-4	<b>Distinct MicroRNA Expression Profiles in Degenerated Human Cartilage Endplates after Cyclic Stretch</b> <u>Xin Fan</u> <sup>1</sup> , Huan Liu <sup>1</sup> <sup>1</sup> Third Military Medical University, China.
<b>11:30 - 12:30</b> <b>Hall</b>	<b>Plenary Lecture 2</b> <b>Chair(s): Toshiro Ohashi (Hokkaido University, Japan)</b>
11:30 - 12:30	<b>Biomechanics of Upper Extremities</b> Prof. Kai-Nan An, PhD Professor of Bioengineering, Mayo Medical School, Director of Biomechanics Laboratory Department of Orthopaedic Surgery, Mayo Clinic, USA
<b>13:30 - 15:00</b> <b>Hall</b>	<b>OS6 : Australian and New Zealand Society for Biomechanics (ANZSB)</b> <b>Organizer(s): Prof. Rod Barrett (Griffith University, Australia)</b> <b>Chair(s): Elizabeth Clarke (University of Sydney, Australia)</b> <b>Rod Barrett (Griffith University, Australia)</b>
13:30 - 13:45 OS6-1	<b>MicroCT-Based Assessment of the Spatial Heterogeneity of Bone Mineralization during Ageing</b> Annette Le Masurier <sup>1</sup> , Romane Blanchard <sup>1</sup> , Yasmin Carter <sup>2</sup> , David M. L. Cooper <sup>2</sup> , C. David Thomas <sup>1</sup> , John G. Clement <sup>1</sup> , <u>Peter Pivonka</u> <sup>1</sup> <sup>1</sup> University of Melbourne, Australia. <sup>2</sup> University of Saskatchewan, Canada.
13:45 - 14:00 OS6-2	<b>Sequential MRI Reveals Individual Level Deformities in the Growing Scoliotic Spine that are not Seen Clinically by the Cobb Angle</b> Bethany Keenan <sup>1</sup> , Maree Izatt <sup>1</sup> , Geoffrey Askin <sup>1</sup> , Robert Labrom <sup>1</sup> , Damon Bennett <sup>2</sup> , <u>Mark Percy</u> <sup>1</sup> , Clayton Adam <sup>1</sup> <sup>1</sup> Queensland University of Technology and Mater Health Services, Australia. <sup>2</sup> Mater Health Services, Australia.
14:00 - 14:15 OS6-3	<b>Relationship between Biomechanics and Pathology in a Mouse Knee Injury Model</b> Carina Blaker <sup>1</sup> , Christopher Little <sup>1</sup> , <u>Elizabeth Clarke</u> <sup>1</sup> <sup>1</sup> University of Sydney, Australia.
14:15 - 14:30 OS6-4	<b>Use of Freehand 3D Ultrasound to Investigate Achilles Tendon Morphology and Mechanics</b> <u>Rod Barrett</u> <sup>1</sup> , Steven Obst <sup>1</sup> , Wencke Hansen <sup>1</sup> , Richard-Newsham-West <sup>1</sup> , Vicki Shim <sup>1,2</sup> <sup>1</sup> Griffith University, Australia. <sup>2</sup> University of Auckland, New Zealand.
14:30 - 14:45 OS6-5	<b>Creating High-Fidelity Subject-Specific Neuromusculoskeletal Computational Models</b> <u>David Lloyd</u> <sup>1</sup> <sup>1</sup> Griffith University, Australia.
14:45 - 15:00 OS6-6	<b>Effect of Leg or Back Pain on Muscle Synergies during Walking</b> <u>Paul Hodges</u> <sup>1</sup> , Wolbert Van Den Hoorn <sup>1</sup> , Jaap Van Dieën <sup>2</sup> , François Hug <sup>1</sup> <sup>1</sup> University of Queensland, Australia. <sup>2</sup> VU University Amsterdam, The Netherlands.

13:30 - 14:30 Room A	<p><b>OS5 : Mechanobiology and Tissue Engineering for Disease and Regeneration II</b></p> <p>Organizer(s): Prof. Josh Wu (National Cheng Kung University, Taiwan) Prof. Taiji Adachi (Kyoto University, Japan)</p> <p>Chair(s): Josh Wu (National Cheng Kung University, Taiwan) Taiji Adachi (Kyoto University, Japan)</p>
13:30 - 13:45 OS5-5	<p><b>Cell Adhesion and Mechanical Stimulation in the Regulation of Cellular Behavior</b></p> <p><u>Yang-Kao Wang</u><sup>1</sup></p> <p><sup>1</sup> National Cheng Kung University, Taiwan.</p>
13:45 - 14:00 OS5-6	<p><b>Hybrid 3D Scaffolds of Hydrogel and Electrospun Fibers for Differentiation of Skeletal Myoblasts</b></p> <p><u>Ung Hyun Ko</u><sup>1</sup>, Thai Le Phuong Anh<sup>1</sup>, Junho Lee<sup>1</sup>, Suk-Hee Park<sup>2</sup>, Jennifer Hyunjong Shin<sup>1*</sup></p> <p><sup>1</sup> Korea Advanced Institute of Science and Technology, Korea. <sup>2</sup> Korea Institute of Industrial Technology, Korea.</p>
14:00 - 14:15 OS5-7	<p><b>Biomechanical Forces Modulate Epithelial Competence and Patterning during WIHN</b></p> <p><u>Hans I-Chen Harn</u><sup>1</sup>, Po-Yuan Chiu<sup>1</sup>, Chien-Hong Lin<sup>1</sup>, Chia-Ching Wu<sup>1</sup>, Ming-Jer Tang<sup>1</sup>, Cheng-Min Chuong<sup>1,2</sup>, Michael W. Hughes<sup>1</sup></p> <p><sup>1</sup> National Cheng Kung University, Taiwan. <sup>2</sup> University of Southern California, USA.</p>
14:15 - 14:30 OS5-8	<p><b>AFM Interaction Measurement between Wnt Signaling Molecules and Their Receptor</b></p> <p><u>Taiji Adachi</u><sup>1</sup>, Takahito Tamaki<sup>1</sup>, Sung-Woong Han<sup>2</sup></p> <p><sup>1</sup> Kyoto University, Japan. <sup>2</sup> Pohang University of Science and Technology, Korea.</p>
13:30 - 14:45 Room B	<p><b>GS1 : Cell and Tissue Biomechanics V</b></p> <p>Chair(s): Tomonobu Goto (Tottori University, Japan) Ken-ichi Tsubota (Chiba University, Japan)</p>
13:30 - 13:45 GS1-22	<p><b>Novel Pillar-Pipette Assay to Quantify Intercellular Adhesion</b></p> <p><u>Darwesh MK Aladin</u><sup>1</sup>, Virgile Viasnoff<sup>1,2</sup>, Jean Paul Thiery<sup>1,3</sup></p> <p><sup>1</sup> National University of Singapore, Singapore. <sup>2</sup> CNRS/ESPCI Paristech, France. <sup>3</sup> A*STAR, Singapore.</p>
13:45 - 14:00 GS1-23	<p><b>Observation and Numerical Simulation of the Spatio-Temporal Structure in the Collective Motion of Bacteria</b></p> <p><u>Tonau Nakai</u><sup>1</sup>, Yoshihiro Mouri<sup>1</sup>, Tomonobu Goto<sup>1</sup></p> <p><sup>1</sup> Tottori University, Japan.</p>
14:00 - 14:15 GS1-24	<p><b>Steady Distribution of Cells in One-Dimensional Biased Random Walk Model Relating to Bacterial Chemo-Taxis</b></p> <p><u>Tomonobu Goto</u><sup>1</sup>, Tonau Nakai<sup>1</sup></p> <p><sup>1</sup> Tottori University, Japan</p>
14:15 - 14:30 GS1-25	<p><b>Numerical Simulation of Red Blood Cell Mechanics Considering Viscoelasticity of the Membrane</b></p> <p><u>Ken-ichi Tsubota</u><sup>1</sup></p> <p><sup>1</sup> Chiba University, Japan.</p>

14:30 - 14:45 GS1-26	<b>Initial Force Delivery Characteristics of Ligation on Nanostucture and Mechanical Properties of NiTi Shape Memory Alloys</b> Yong-Jin Ahn <sup>1</sup> , <u>Hun-Kuk Park</u> <sup>1</sup> , Samjin Choi <sup>1</sup> <sup>1</sup> Kyung Hee University, Korea.
<b>13:30 - 15:00 Room C</b>	<b>GS5 : Tissue Engineering</b> <b>Chair(s): Shigeo M. Tanaka (Kanazawa University, Japan)</b> <b>Kaori Kuribayashi-Shigetomi (Hokkaido University, Japan)</b>
13:30 - 13:45 GS5-1	<b>Effect of Electromagnetic Field Stimulation on the Mechanical Properties of Tissue-Engineered Bone Constructed with a Calcined Bovine Trabecular Bone Scaffold</b> <u>Shigeo M. Tanaka</u> <sup>1</sup> , Yuki Yamashita <sup>1</sup> <sup>1</sup> Kanazawa University, Japan.
13:45 - 14:00 GS5-2	<b>A Novel in Vitro Model for Evaluating the Triple Play of Vascular Cell-Stent-Blood Flow</b> Lili Tan <sup>1</sup> , Meiling Fu <sup>1</sup> , Tingzhang Hu <sup>1</sup> , Tieying Yin <sup>1</sup> , Junli Huang <sup>1</sup> , Wanqian Liu <sup>1</sup> , <u>Guixue Wang</u> <sup>1</sup> <sup>1</sup> Bioengineering College of Chongqing University, China.
14:00 - 14:15 GS5-3	<b>The Role of Fibroblast Growth Factor 9 for Neurosphere Formation in Adipose-derived Stem Cells</b> <u>Shih-Yu Lu</u> <sup>1</sup> , Ya-Ju Chang <sup>1</sup> , Yuan-Yu Hsueh <sup>1</sup> , Chia-Ching Wu <sup>1</sup> <sup>1</sup> National Cheng Kung University, Taiwan.
14:15 - 14:30 GS5-4	<b>Construction of Tissue-Engineered Vascular Media Using Plastically Compressed Smooth Muscle Cell-Seeded Collagen Gels</b> Ho-Yi Tuan-Mu <sup>1</sup> , <u>Jin-Jia Hu</u> <sup>1</sup> <sup>1</sup> National Cheng Kung University, Taiwan.
14:30 - 14:45 GS5-5	<b>Development of PVA/Silk Cryogels for Intervertebral Disc Tissue Engineering from a Biomechanics Perspective</b> <u>Puay Yong Neo</u> <sup>1</sup> , Xiao Juan Chen <sup>1</sup> , Alex Sheng Ru Tay <sup>1</sup> , James Cho-Hong Goh <sup>1</sup> , Siew Lok Toh <sup>1</sup>
14:45 - 15:00 GS5-6	<b>3D Co-Culture System Using Cell Origami Technique</b> <u>Kaori Kuribayashi-Shigetomi</u> <sup>1</sup> , He Qian <sup>1</sup> <sup>1</sup> Hokkaido University, Japan.

<p>15:15 - 17:00 Hall</p>	<p><b>PS5 : Poster Short Presentation V</b> Chair(s): Ryo Takeda (Hokkaido University, Japan)</p>
<p>PS5-1</p>	<p><b>Biomechanical Evaluation on the Pull-Out Strength of an Improved Cement-Augmented Dynamic Hip Screw</b> Chih-Kun Hsiao<sup>1</sup>, Tien-Ying Lin<sup>1</sup>, <u>Teng-Yao Yang</u><sup>1</sup>, Yi-Jung Tsai<sup>1</sup>, Yuan-Kun Tu<sup>1</sup> <sup>1</sup> E-Da Hospital, Taiwan.</p>
<p>PS5-2</p>	<p><b>Structural Strength of Bovine Cancellous Cubic Specimens under Cyclic Compression</b> <u>Kaori Endo</u><sup>1</sup>, Satoshi Yamada<sup>1</sup>, Masahiro Todoh<sup>1</sup>, Masahiko Takahata<sup>1</sup>, Norimasa Iwasaki<sup>1</sup>, Shigeru Tadano<sup>1</sup> <sup>1</sup> Hokkaido University, Japan.</p>
<p>PS5-3</p>	<p><b>Length Patterns in the Posterior Cruciate Ligament of the Natural Knee Joints Using Image Matching Method</b> <u>Yoshitaka Shiraishi</u><sup>1</sup>, Kazunori Hino<sup>2</sup>, Kazuho Nishimatsu<sup>2</sup>, Yoshio Onishi<sup>2</sup>, Tatsuhiko Kutsuna<sup>2</sup>, Kunihiro Watamori<sup>2</sup>, Hiromasa Miura<sup>2</sup>, Satoru Ikebe<sup>3</sup>, Hidehiko Higaki<sup>3</sup>, Yoshitaka Nakanishi<sup>4</sup> <sup>1</sup> Ehime University Hospital, Japan. <sup>2</sup> Ehime University Graduate School of Medicine, Japan. <sup>3</sup> Kyushu Sangyo University, Japan. <sup>4</sup> Kumamoto University, Japan.</p>
<p>PS5-4</p>	<p><b>CFD Analyses for the Flow in Cancellous Bone with LBM</b> <u>Wataru Sakuma</u><sup>1</sup>, Toshio Nakayama<sup>2</sup>, Hitomi Anzai<sup>1</sup>, Makoto Ohta<sup>1</sup>, Shuji Nakamura<sup>3</sup>, Katsuyuki Sado<sup>3</sup>, Manfred Krafczyk<sup>4</sup>, Maik Stiebler<sup>4</sup>, Kostyantyn Kucher<sup>4</sup> <sup>1</sup> Tohoku University, Japan. <sup>2</sup> National Institute of Technology, Tsuruoka College, Japan. <sup>3</sup> JIMRO Co., Ltd., Japan. <sup>4</sup> Technische Universität Braunschweig, Germany.</p>
<p>PS5-5</p>	<p><b>Improvement of Impact Toughness of Cortical Bone by Means of Local Demineralization of Defect Area on Structure</b> <u>Ayumi Hasegawa</u><sup>1</sup>, Kazuhiro Fujisaki<sup>1</sup>, Kazuhiko Sasagawa<sup>1</sup> <sup>1</sup> Hirosaki University, Japan.</p>
<p>PS5-6</p>	<p><b>Finite Element Analysis of Multiple Pelvic Fractures with Plate Fixation</b> <u>Aiko Noguchi</u><sup>1</sup>, Keiko Katsuyama<sup>1</sup>, Keisuke Sasagawa<sup>1</sup>, Masafumi Oda<sup>2</sup>, Naofumi Shiota<sup>3</sup>, Shojiro George Terashima<sup>1</sup>, Toshiaki Hara<sup>1</sup> <sup>1</sup> Niigata Institute of Technology, Japan. <sup>2</sup> Niigata University, Japan. <sup>3</sup> Okayama Medical Center, Japan.</p>
<p>PS5-7</p>	<p><b>Evaluation of Reachable Workspace in Patients with C5-C6 Brachial Plexus Injuries</b> <u>Yi-Jung Tsai</u><sup>1,2</sup>, Chih-Kun Hsiao<sup>2</sup>, Yuan-Kun Tu<sup>2</sup>, Fong-Chin Su<sup>1</sup> <sup>1</sup> National Cheng Kung University, Taiwan. <sup>2</sup> E-Da Hospital, Taiwan.</p>
<p>PS5-8</p>	<p><b>Micro Cantilever Bending for Elastic Modulus of Single Trabecula</b> <u>Satoshi Yamada</u><sup>1</sup>, Koichi Fukasawa<sup>1</sup>, Masahiro Todoh<sup>1</sup>, Shigeru Tadano<sup>1</sup> <sup>1</sup> Hokkaido University, Japan.</p>
<p>PS5-9</p>	<p><b>Investigations of the Load Contributions of the PM and the AL Bundles of the PCL</b> <u>Ryo Takeda</u><sup>1</sup>, Keisuke Okuzumi<sup>1</sup>, Yasuyuki Kawaguchi<sup>1</sup>, Katsuhiko Sasaki<sup>1</sup> <sup>1</sup> Hokkaido University, Japan.</p>

PS5-10	<p><b>Factorial Analysis of External Locking Plate for Proximal Tibia Fracture</b>                  Yi-Zhe Chen<sup>1</sup>, Kun-Hsiang Hsu<sup>1</sup>, Ching-Hou Ma<sup>2</sup>, Chin-Hsien Wu<sup>2</sup>, Yuan-Kun Tu<sup>2</sup>, <u>Ting-Sheng Lin</u><sup>1</sup>  <sup>1</sup>I-Shou University, Taiwan. <sup>2</sup>E-Da Hospital, Taiwan.</p>
PS5-11	<p><b>In Vivo Contact Characteristics of the Metacarpophalangeal Joint</b>  <u>Yusuke Morise</u><sup>1</sup>, Makoto Sakamoto<sup>1,2</sup>, Kiyoko Kazama<sup>1</sup>, Koichi Kobayashi<sup>1,2</sup>, Yuji Tanabe<sup>1</sup>  <sup>1</sup>Niigata University, Japan. <sup>2</sup>Niigata University School of Medicine, Japan.</p>
PS5-12	<p><b>Effect of Pedicle Screw Diameter on the Fatigue and Pullout Failure: A Cadaveric Biomechanical Test</b>  <u>Yu-Tang Shih</u><sup>1</sup>, Dar-Ming Lai<sup>2</sup>, Po-Liang Lai<sup>3</sup>, Jaw-Lin Wang<sup>1</sup>  <sup>1</sup>National Taiwan University, Taiwan. <sup>2</sup>National Taiwan University Hospital and National Taiwan University College of Medicine, Taiwan. <sup>3</sup>Chang Gung Memorial Hospital, Taiwan.</p>
PS5-13	<p><b>Effect of LIPUS Stimulation on Nutrition Diffusion in Intervertebral Disc</b>  <u>Ching-Ting Lin</u><sup>1</sup>, Jaw-Lin Wang<sup>1</sup>  <sup>1</sup>National Taiwan University, Taiwan.</p>
PS5-14	<p><b>The Characterization of Ultrasound Attenuation in Intervertebral Disc</b>  <u>Tzu-Chiao Yang</u><sup>1</sup>, Jaw-Lin Wang<sup>1</sup>  <sup>1</sup>National Taiwan University, Taiwan.</p>
PS5-15	<p><b>Comparison of Lying and Standing Posture about Changing Muscle Properties in Thoracic SCI (Spinal Cord Injury) Patients</b>  <u>Hyuk-Jae Choi</u><sup>1</sup>, Gyoo-Suk Kim<sup>1</sup>, Chang-Yong Ko<sup>1</sup>  <sup>1</sup>Korea Orthopedics &amp; Rehabilitation Engineering Center, Korea.</p>
PS5-16	<p><b>Relevant Factors of Handwriting Legibility in Elementary School Children</b>  <u>Tien-Ni Wang</u><sup>1</sup>, Tzu-I Lee<sup>1</sup>, Tsu-Hsin Howe<sup>2</sup>, Hao-Ling Chen<sup>1</sup>  <sup>1</sup>National Taiwan University, Taiwan. <sup>2</sup>New York University, USA.</p>
PS5-17	<p><b>Comparison of Gait Pattern with the 4 Linked Gait Trainer (GTR) and Treadmill Gait</b>  <u>Dohoon Koo</u><sup>1</sup>, Won-Kyung Song<sup>1</sup>, Sungpil Kim<sup>1</sup>, Hyeongsic Kim<sup>1</sup>, Seondeok Eun<sup>1</sup>  <sup>1</sup>National Rehabilitation Research Institute, Korea.</p>
PS5-18	<p><b>Influence of Cadence on Basic Gait Parameters in Gait Initiation, Constant-Speed Walking and Gait Termination</b>  <u>Sunwoo Park</u><sup>1</sup>, Soonjae Ahn<sup>1</sup>, Isu Sin<sup>1</sup>, Youngho Kim<sup>1</sup>  <sup>1</sup>Yonsei University, Republic of Korea</p>
PS5-19	<p><b>Basic Spatiotemporal Gait Parameters with Different Cognitive Performances during Turning</b>  <u>Jongman Kim</u><sup>1</sup>, Baekdong Cha<sup>1</sup>, Isu Shin<sup>1</sup>, Soonjae Ahn<sup>1</sup>, Youngho Kim<sup>1</sup>  <sup>1</sup>Yonsei University, Korea.</p>
PS5-20	<p><b>Pushing and Pulling Strengths of Labor Population in Taiwan</b>  <u>Hsin-Hung Tu</u><sup>1</sup>, Chi-Yuang Yu<sup>2</sup>  <sup>1</sup>Hsiuping University of Science and Technology, Taiwan. <sup>2</sup>National Tsing Hua University, Taiwan.</p>



PS5-21	<p><b>Difference in the Effectiveness of Pedaling by Cadence</b>  <u>Jeongwoo Seo</u><sup>1</sup>, Dongwon Kang<sup>1</sup>, Daehyeok Kim<sup>1</sup>, Jinseung Choi<sup>1</sup>, Gyerai Tack<sup>1</sup>  <sup>1</sup> Konkuk University, Korea.</p>
15:15 - 17:00 Room A	<p><b>PS6 : Poster Short Presentation VI</b>  <b>Chair(s): Yokota Hideo (Riken, Japan)</b></p>
PS6-1	<p><b>Development of a Gait Training Device Based on Normal Gait Trajectory for People with Stroke</b>  <u>Hyeongsic Kim</u><sup>1</sup>, Sungpil Kim<sup>1</sup>, Myungjoon Lim<sup>1</sup>, Seondeok Eun<sup>1</sup>  <sup>1</sup> National Rehabilitation Research Institute, Korea.</p>
PS6-2	<p><b>Measurements of Contact Pressure and Shear Stress on the Sole of Foot by Using Thin and Flexible Sensor</b>  <u>Satoshi Ogawa</u><sup>1</sup>, Noritugu Kikuhara<sup>1</sup>, Kazuhiro Fujisaki<sup>1</sup>, Kazuhiko Sasagawa<sup>1</sup>  <sup>1</sup> Hirosaki University, Japan.</p>
PS6-3	<p><b>Three-Dimensional Posture Estimation of Talus and Calcaneus from Posture of Planter Plate</b>  <u>Teru Yonezawa</u><sup>1</sup>, Kenta Nomura<sup>1</sup>, Shinichi Kosugi<sup>2</sup>, Atsutoshi Ikeda<sup>3</sup>, Hiroshi Mizoguchi<sup>1</sup>, Hiroshi Takemura<sup>1</sup>  <sup>1</sup> Tokyo University of Science, Japan. <sup>2</sup> Nara Prefecture Western Medical Center, Japan. <sup>3</sup> Nara Institute of Science and Technology, Japan.</p>
PS6-4	<p><b>Spatio-Temporal Gait Parameters for Dual Task during Normal Walking</b>  <u>Baekdong Cha</u><sup>1</sup>, Jongman Kim<sup>1</sup>, Soonjae Ahn<sup>1</sup>, Isu Shin<sup>1</sup>, Jaesung Ryu<sup>1</sup>, Youngho Kim<sup>1</sup>  <sup>1</sup> Yonsei University, Korea.</p>
PS6-5	<p><b>Development of a Hip Impact Simulator and a Preliminary Evaluation of Hip Protectors</b>  <u>Jeseong Ryu</u><sup>1</sup>, Eunkyeong Choi<sup>1</sup>, Baekdong Cha<sup>1</sup>, Jongman Kim<sup>1</sup>, Youngho Kim<sup>1</sup>  <sup>1</sup> Yonsei University, Korea.</p>
PS6-6	<p><b>Effects of an Intensive Active-Resistive Training on Antagonist Muscle Co-Contraction in the Elderly People</b>  <u>Jongsang Son</u><sup>1</sup>, Jeseong Ryu<sup>1</sup>, Eunkyoung Choi<sup>1</sup>, Baekdong Cha<sup>1</sup>, Youngho Kim<sup>1</sup>  <sup>1</sup> Yonsei University, Korea.</p>
PS6-7	<p><b>Development of Stewart Platform Type Ankle-Foot Orthosis for Perturbation Gait Training</b>  <u>Kenta Nomura</u><sup>1</sup>, Teru Yonezawa<sup>1</sup>, Hiroshi Takemura<sup>1</sup>, Hiroshi Mizoguchi<sup>1</sup>  <sup>1</sup> Tokyo University of Science, Japan.</p>
PS6-8	<p><b>Effect of Isokinetic Eccentric Training on Patients with Lateral Epicondylar Tendinopathy</b>  <u>Wei-Yang Tsai</u><sup>1</sup>, Chien-Ju Lin<sup>1</sup>, Hsiao-Feng Chieh<sup>1</sup>, Li-Chieh Kuo<sup>1</sup>, Fong-Chin Su<sup>1</sup>  <sup>1</sup> National Cheng Kung University, Taiwan.</p>

PS6-9	<p><b>Acoustic Emission Characteristics of the Healthy and Patients with Anterior Cruciate Ligament Reconstruction</b>  <u>Eunyoung Choi</u><sup>1</sup>, Jaesung Ryu<sup>1</sup>, Soonjae Ahn<sup>1</sup>, Isu Shin<sup>1</sup>, Jongman Kim<sup>1</sup>, Baekdong Cha<sup>1</sup>, Jaeho Park<sup>1</sup>, Jongsang Son<sup>1</sup>, Mitsuo Nagao<sup>2</sup>, Youngho Kim<sup>1</sup>  <sup>1</sup>Yonsei University, Korea. <sup>2</sup>Nihon University, Japan.</p>
PS6-10	<p><b>Verification of the Most Suitable Muscular Arrangement during Standing Motion Viewed from Force and Stiffness Characteristics</b>  <u>Tomokazu Abe</u><sup>1</sup>, Mai Tomatsu<sup>1</sup>, Toru Oshima<sup>1</sup>, Hiroshi Ohko<sup>2</sup>, Akira Ochi<sup>2</sup>, Kiminobu Furukawa<sup>2</sup>, Ken'ichi Koyanagi<sup>1</sup>, Hiroyuki Masuta<sup>1</sup>, Tatsuo Motoyoshi<sup>1</sup>, Tomohiko Fujikawa<sup>3</sup>  <sup>1</sup>Toyama Prefectural University, Japan. <sup>2</sup>Seijoh University, Japan. <sup>3</sup>Osaka Electro-Communication University, Japan.</p>
PS6-11	<p><b>Posture Control and Cortex Activity Changed under a Continues Dynamic Perturbation Task</b>  <u>Chun-Ju Chang</u><sup>1</sup>, Sai-Wei Yang<sup>1</sup>, Tsui-Fen Yang<sup>2</sup>  <sup>1</sup> National Yang-Ming University, Taiwan. <sup>2</sup>Taipei Veterans General Hospital, Taiwan.</p>
PS6-12	<p><b>The Effect of Knee Taping on Muscle Co-Activation around the Knee during Side-Hop</b>  <u>Kuang-Wei Lin</u><sup>1</sup>, Yu-Lun Huang<sup>2</sup>, Ying-Fang Liu<sup>3</sup>, Sai-Wei Yang<sup>1</sup>  <sup>1</sup> National Yang-Ming University, Taiwan. <sup>2</sup> University of Texas at Arlington, USA. <sup>3</sup> Hsin Sheng College of Medical Care and Management, Taiwan.</p>
PS6-13	<p><b>Study on Joint Speed and Impact Loads on Joints during Falling</b>  <u>J. S. Hong</u><sup>1</sup>, H. I. Choi<sup>1</sup>, K. J. Chun<sup>1</sup>, Jung Hwa Hong<sup>2</sup>  <sup>1</sup> KITECH, Korea. <sup>2</sup> Korea University, Korea.</p>
PS6-14	<p><b>A Feasibility Study of a Self-Developed Program with Wii Balance Board for Clinical Balance Assessment in Children</b>  <u>Jiun-You Chen</u><sup>1</sup>, Ling-Yi Lin<sup>1</sup>, Yi-Chun Du<sup>2</sup>, Yung-Jong Chen<sup>1</sup>, <u>Rong-Ju Cherng</u><sup>1</sup>  <sup>1</sup> National Cheng Kung University, Taiwan. <sup>2</sup> Southern Taiwan University of Science and Technology, Taiwan.</p>
PS6-15	<p><b>Evaluation of Transcutaneous Signal Transmission System Used for Implantable Bone Conduction Hearing Aid</b>  <u>Naoki Hayashi</u><sup>1</sup>, Eri Tanaka<sup>1</sup>, Atsushi Kaneko<sup>1</sup>, Takuya Hashimoto<sup>1</sup>, Sho Kanzaki<sup>2</sup>, Naohito Hato<sup>3</sup>, Takuji Koike<sup>1</sup>  <sup>1</sup> The University of Electro-Communications, Japan. <sup>2</sup> Keio University, Japan. <sup>3</sup> Ehime University, Japan.</p>
PS6-16	<p><b>Study of Fetus Hearing Screening Based on Change in Heart Rate and Auditory Revoked Response</b>  <u>Sinyoung Lee</u><sup>1</sup>, Rina Matsuoka<sup>2</sup>, Katsuhisa Ikeda<sup>2</sup>, Takuya Hashimoto<sup>1</sup>, Takuji Koike<sup>1</sup>  <sup>1</sup> The University of Electro-Communications, Japan. <sup>2</sup> Juntendo University Faculty of Medicine, Japan.</p>
PS6-17	<p><b>Multi-Body System Simulation of a Sit-Ski on Ski Slopes</b>  <u>Dae-Jin Jang</u><sup>1</sup>, Gyoo-Suk Kim<sup>1</sup>, Shin-Ki Kim<sup>1</sup>, Moo-Sung Mun<sup>1</sup>  <sup>1</sup> Korea Orthopedics and Rehabilitation Engineering Center, Korea.</p>
PS6-18	<p><b>Kinematic Analysis of the Lower Extremity in Skilled and Unskilled Snowboarders during Simulator Exercise</b>  <u>Sunwoo Park</u><sup>1</sup>, Soonjae Ahn<sup>1</sup>, Beakdong Cha<sup>1</sup>, Youngho Kim<sup>1</sup>  <sup>1</sup>Yonsei University, Korea.</p>

PS6-19	<p><b>Estimation of Whole Body Motion Using Wireless Inertial Sensors for Proficiency Evaluation in Nordic Walking</b>  <u>Amir Mukhriz</u><sup>1</sup>, Naoki Ogasawara<sup>1</sup>, Koichi Sagawa<sup>1</sup>  <sup>1</sup> Hirosaki University, Japan.</p>
PS6-20	<p><b>Muscle Activation of Different Skating Techniques in Elite In-Line Speed Skaters</b>  <u>Jing-Min Liang</u><sup>1</sup>, Shou-Tou Sheu<sup>2</sup>, Szu-Hsien Wu<sup>1</sup>, Wen-Lan Wu<sup>1</sup>  <sup>1</sup> Kaohsiung Medical University, Taiwan. <sup>2</sup> National Sun Yat-sen University, Taiwan.</p>
15:15 - 17:00 Room B	<p><b>PS7 : Poster Short Presentation VII</b>  <b>Chair(s): Kaori Kuribayashi-Shigetomi (Hokkaido University, Japan)</b></p>
PS7-1	<p><b>Effect of Aquatic Exercise on Obstacle Crossing in Older Adults</b>  <u>Yi-Wen Chang</u><sup>1</sup>, Li-Jung Chen<sup>1</sup>, Ming-Kuei Lo<sup>2</sup>, Wei-Rung Chen<sup>1</sup>, Hong-Wen Wu<sup>1</sup>  <sup>1</sup> National Taiwan University of Sport, Taiwan. <sup>2</sup> Nan Kai University of Technology, Taiwan.</p>
PS7-2	<p><b>Analysis of Spinal Alignment Pattern of Car Occupants Obtained Using an Upright Open MRI System</b>  <u>Mamiko Odani</u><sup>1</sup>, Fusako Sato<sup>2</sup>, Yusuke Miyazaki<sup>1</sup>  <sup>1</sup> Tokyo Institute of Technology, Japan. <sup>2</sup> Japan Automobile Research Institute, Japan.</p>
PS7-3	<p><b>Different Pitching Mechanics between Sidearm and Overhand Baseball Pitchers</b>  <u>Yu-Shiuan Cheng</u><sup>1</sup>, Lin-Hwa Wang<sup>1</sup>, Fong-Chin Su<sup>1</sup>  <sup>1</sup> National Cheng Kung University, Taiwan.</p>
PS7-4	<p><b>Effect of Prosthetic Feet Stiffness on Loading Rate during Running: A Case Study</b>  <u>Hiroaki Hobara</u><sup>1</sup>, Yoko Sano<sup>1</sup>, Atsushi Makimoto<sup>1</sup>, Yoshiyuki Kobayashi<sup>1</sup>, Thijs A Helldoorn<sup>1</sup>, Masaaki Mochimaru<sup>1</sup>  <sup>1</sup> National Institute of Advanced Industrial Science and Technology, Japan.</p>
PS7-5	<p><b>Variation of Compressive Mechanical Property of Engineered Cartilage Tissue Constructed Using Mesenchymal Stem Cells with Collagen Two-Phase Scaffold</b>  <u>Yusuke Nakamuta</u><sup>1</sup>, Takaaki Arahira<sup>2</sup>, Mitsugu Todo<sup>1</sup>  <sup>1</sup> Kyushu University, Japan. <sup>2</sup> Fukuoka Dental College, Japan.</p>
PS7-6	<p><b>Experimental Verification of Cell Adhesion Effect to Cellular Function Expression</b>  <u>Yuta Nakashima</u><sup>1</sup>, Yuki Hikichi<sup>1</sup>, Kouichi Tsusu<sup>2</sup>, Kazuyuki Minami<sup>2</sup>, Yoshitaka Nakanishi<sup>1</sup>  <sup>1</sup> Kumamoto University, Japan. <sup>2</sup> Yamaguchi University, Japan.</p>
PS7-7	<p><b>Using Functionalized Renal Epithelial Cell and Microfluidic System for Kidney Disease</b>  <u>Ling-Yu Chen</u><sup>1</sup>, Hui-Chun Huang<sup>1</sup>, Fong-Chin Su<sup>1</sup>, Chia-Ching Wu<sup>1</sup>  <sup>1</sup> National Cheng Kung University, Taiwan.</p>

<p>PS7-8</p>	<p><b>Bio Rapid Prototyping Project: Influence of Passage Culture of Spheroids for Cells Construct</b>  <u>Marie Fujikawa</u><sup>1</sup>, Takeshi Shimoto<sup>1</sup>, Atsushi Ishikawa<sup>2</sup>, Hidehiko Higaki<sup>2</sup>, Shizuka Akieda<sup>3</sup>, Koichi Nakayama<sup>4</sup>, Shuichi Matsuda<sup>5</sup>, Hiromasa Miura<sup>6</sup>, Yukihide Iwamoto<sup>7</sup>  <sup>1</sup> Fukuoka Institute of Technology, Japan. <sup>2</sup> Kyushu Sangyo University, Japan. <sup>3</sup> Cyfuse Biomedical K.K, Japan. <sup>4</sup> Saga University, Japan. <sup>5</sup> Kyoto University, Japan. <sup>6</sup> Ehime University, Japan. <sup>7</sup> Kyushu University, Japan.</p>
<p>PS7-9</p>	<p><b>Cyclic Stretching of Human Endometrial Stromal Cells Promotes Their Differentiation into Smooth Muscle Cells</b>  <u>Jeonghyun Kim</u><sup>1</sup>, Yasushi Hirota<sup>1</sup>, Takehiro Hiraoka<sup>1</sup>, Osamu Yoshino<sup>2</sup>, Kevin Montagne<sup>1</sup>, Masayo Yokota<sup>1</sup>, Shigeru Saito<sup>2</sup>, Yutaka Osuga<sup>1</sup>, Takashi Ushida<sup>1</sup>, Katsuko S Furukawa<sup>1</sup>  <sup>1</sup> University of Tokyo, Japan. <sup>2</sup> University of Toyama, Japan.</p>
<p>PS7-10</p>	<p><b>ECM Production in Chondrocyte-Agarose Construct Cultured under Traction Loading</b>  <u>Keisuke Fukuda</u><sup>1</sup>, Seiji Omata<sup>1</sup>, Yoshinori Sawae<sup>1</sup>  <sup>1</sup> Kyushu University, Japan.</p>
<p>PS7-11</p>	<p><b>A Study on a Novel Safety Verification Method for Generating Experimental Friction Blisters</b>  <u>Xuewei Mao</u><sup>1</sup>, Yoji Yamada<sup>1</sup>, Yasuhiro Akiyama<sup>1</sup>, Shogo Okamoto<sup>1</sup>, Kengo Yoshida<sup>1</sup>  <sup>1</sup> Nagoya University, Japan.</p>
<p>PS7-12</p>	<p><b>Responses of Cell-Seeded Collagen Gels to Biaxial Mechanical Stretching</b>  <u>Miao-Er Chien</u><sup>1</sup>, Mei-Xuan Wang<sup>1</sup>, Pei-Yuan Lee<sup>1,2</sup>, Jin-Jia Hu<sup>1</sup>  <sup>1</sup> National Cheng Kung University, Taiwan. <sup>2</sup> Show-Chwan Memorial Hospital, Taiwan.</p>
<p>PS7-13</p>	<p><b>Effects of In Situ Mechanical Stimuli on the Maturation of Tubular Tissue – Implications for Tissue-Engineered Blood Vessels</b>  <u>Chao-Lin Chen</u><sup>1</sup>, How-Ran Guo<sup>1,2</sup>, Jin-Jia Hu<sup>2</sup>  <sup>1</sup> National Cheng Kung University Hospital, Taiwan. <sup>2</sup> National Cheng Kung University, Taiwan.</p>
<p>PS7-14</p>	<p><b>Responses of Cell-Seeded Collagen Gels to Biaxial Mechanical Stretching</b>  <u>Miao-Er Chien</u><sup>1</sup>, Mei-Xuan Wang<sup>1</sup>, Pei-Yuan Lee<sup>1,2</sup>, Jin-Jia Hu<sup>1</sup>  <sup>1</sup> National Cheng Kung University, Taiwan. <sup>2</sup> Show-Chwan Memorial Hospital, Taiwan.</p>
<p>PS7-15</p>	<p><b>Biaxial Mechanical Properties of Keloid Fibroblast-Seeded Collagen Gels Cultured under Mechanomimetic Conditions</b>  <u>Bo-Han Wei</u><sup>1</sup>, Miao-Er Cien<sup>1</sup>, Chao-Kai Hsu<sup>2</sup>, Jin-Jia Hu<sup>1</sup>  <sup>1</sup> National Cheng Kung University, Taiwan. <sup>2</sup> National Cheng-Kung University College of Medicine and Hospital, Taiwan.</p>
<p>PS7-16</p>	<p><b>Study on Detachable Drive-assisting Wheel System for Manual Wheelchair Used for the Elderly and the Disabled</b>  <u>Cheolwoong Ko</u><sup>1</sup>, Jaesoo Hong<sup>1</sup>, Hyeunseok Choi<sup>1</sup>, Hyungtae Kim<sup>1</sup>, Junhmm Lee<sup>2</sup>  <sup>1</sup> Korea Institute of Industrial Technology, Korea. <sup>2</sup> OX Korea Co., Korea.</p>
<p>PS7-17</p>	<p><b>Study on Development of Lift System with Swiveling Function used in Elderly Care Facilities</b>  <u>Keyoungjin Chun</u><sup>1</sup>, <u>Cheolwoong Ko</u><sup>1</sup>  <sup>1</sup> Korea Institute of Industrial Technology, Korea.</p>

PS7-18	<p><b>Development of Cutting Performance Test Equipment of Medical Handpiece used for Orthopaedic Surgery</b>  Mincheol Shin<sup>1</sup>, Sangwook Lee<sup>1</sup>, Kanguk Lee<sup>2</sup>, Jungtaek Ko<sup>2</sup>, Jinho Kim<sup>2</sup>, Inhoon Jang<sup>3</sup>, <u>Cheolwoong Ko</u><sup>3</sup>  <sup>1</sup> SoonChunHyang University, Korea. <sup>2</sup> Allotech Co., Korea. <sup>3</sup> Korea Institute of Industrial Technology, Korea.</p>
PS7-19	<p><b>Morphometric Evaluation of Korean Femurs by Geometric Computation: Comparisons of the Sex and the Population</b>  <u>Ho-Jung Cho</u><sup>1</sup>, Dai-Soon Kwak<sup>1</sup>, Ji-Young Jung<sup>1</sup>, In-Beom Kim<sup>1</sup>  <sup>1</sup> The Catholic University of Korea, Korea.</p>
PS7-20	<p><b>Portable Tactile Sensor System for Evaluating Uneven Surfaces</b>  <u>Makoto Takenaka</u><sup>1,2</sup>, Kazuto Takashima<sup>2</sup>  <sup>1</sup> Kagawa Prefectural Industrial Technology Center, Japan. <sup>2</sup> Kyushu Institute of Technology, Japan.</p>
PS7-21	<p><b>F-Actin Probes Induce Nuclear Actin Assembly</b>  <u>Jing Du</u><sup>1</sup>, Yan-Lei Fan<sup>1</sup>, Xi-Qiao Feng<sup>1</sup>  <sup>1</sup> Tsinghua University, China.</p>
15:15 - 17:00 Room C	<p><b>PS8 : Poster Short Presentation VIII</b>  Chair(s): Yasuhiro Nakajima (Hokkaido Research Organization, Japan)</p>
PS8-1	<p><b>Measurement of Plantar Pressure Distribution Based on Grayscale Plantar Images</b>  <u>Yuka Iijima</u><sup>1</sup>, Takayuki Shiina<sup>1</sup>, Hiroshi Tsubo<sup>1</sup>, Takumi Ishikawa<sup>1</sup>, Takeshi Yamakoshi<sup>1</sup>, Hiroshi Mizoguchi<sup>1</sup>, Hiroshi Takemuea<sup>1</sup>  <sup>1</sup> Tokyo University of Science, Japan.</p>
PS8-2	<p><b>Tenocyte Response to IL-1 Beta Stimulation is Enhanced with a Low Level of Intracellular Tension</b>  <u>Eiji Maeda</u><sup>1</sup>, Tomomi Muramatsu<sup>1</sup>, Toshiro Ohashi<sup>1</sup>  <sup>1</sup> Hokkaido University, Japan.</p>
PS8-3	<p><b>Significance of Identifying Infection Sources of Medical Handpieces through Bloodstain Reaction Experiment using Bluestar Solution</b>  Eungjoo Lee<sup>1</sup>, Kanguk Lee<sup>2</sup>, Jungtaek Ko<sup>2</sup>, Jinho Kim<sup>2</sup>, Inhoon Jang<sup>3</sup>, <u>Cheolwoong Ko</u><sup>3</sup>  <sup>1</sup> Clinic of Lee's Orthopaedic Surgery, Korea. <sup>2</sup> Allotech Co., Korea. <sup>3</sup> Korea Institute of Industrial Technology, Korea.</p>
PS8-4	<p><b>Concept Design of Drug Delivery Device based on Anthropometrical Measurement and Analysis on Human Joints Using Korean Cadaver CT Images</b>  Taemin Byun<sup>1</sup>, Sangkuy Han<sup>1</sup>, Keyoungjin Chun<sup>1</sup>, Inhoon Jang<sup>1</sup>, <u>Cheolwoong Ko</u><sup>1</sup>  <sup>1</sup> Korea Institute of Industrial Technology, Korea.</p>
PS8-5	<p><b>Prediction of Deformation Damages of Tree Branches Based on Bending Analysis and Bioelectric Response Measurements</b>  <u>Kuniaki Sato</u><sup>1</sup>, Yukihiko Yamada<sup>1</sup>, Kazuhiro Fujisaki<sup>1</sup>, Kazuhiko Sasagawa<sup>1</sup>  <sup>1</sup> Hirosaki University, Japan.</p>

PS8-6	<p><b>Investigation of Correlation between Crop-Top BRA and BREAST Movement</b>  <u>Lin-Hwa Wang</u><sup>1</sup>, Ching-Sui Wang<sup>2</sup>, Li-Chieh Kuo<sup>3</sup>, Fong-Chin Su<sup>2</sup>  <sup>1</sup> National Cheng Kung University, Taiwan. <sup>2</sup> National Cheng Kung University, Taiwan. <sup>3</sup> National Cheng Kung University, Taiwan.</p>
PS8-7	<p><b>Effect of Brake Force on Human Response during Low Speed Rear-End Collision</b>  Lee Yong Song<sup>1</sup>, <u>Ji Hye Han</u><sup>1</sup>, Jae Young Lee<sup>1</sup>, Hyung Joo Kim<sup>2</sup>, Inju Lee<sup>2</sup>, Dohyung Lim<sup>1</sup>  <sup>1</sup> Sejong University, Korea. <sup>2</sup> Hyundai Motor Group, Korea.</p>
PS8-8	<p><b>Detection of Gait Events during Treadmill Walking Using Kinect Sensor</b>  <u>Seungtae Yang</u><sup>1</sup>, Dongwon Kang<sup>1</sup>, Jeongwoo Seo<sup>1</sup>, Jinseung Choi<sup>1,2</sup>, Gyerai Tack<sup>1,2</sup>  <sup>1</sup> Konkuk University, Korea. <sup>2</sup> Konkuk University, Korea.</p>
PS8-9	<p><b>Classification of Splanchnic Tissue Using Near-Infrared Hyperspectral Imaging Data</b>  <u>Mai Kasai</u><sup>1</sup>, Takumi Ishikawa<sup>1</sup>, Yuya Yasuda<sup>2</sup>, Hiroshi Takemura<sup>1</sup>, Hiroshi Mizoguchi<sup>1</sup>, Kohei Soga<sup>2</sup>, Kazuhiro Kaneko<sup>3</sup>  <sup>1</sup> Tokyo University of Science, Japan. <sup>2</sup> Tokyo University of Science, Japan. <sup>3</sup> National Cancer Center Hospital East, Japan.</p>
PS8-10	<p><b>Changes in Balance Evaluation Variables between the Elderly and the Young</b>  <u>Dongwon Kang</u><sup>1</sup>, Jeongwoo Seo<sup>1</sup>, Jinseung Choi<sup>1,2</sup>, Gyerai Tack<sup>1,2</sup>  <sup>1</sup> Konkuk University, Korea. <sup>2</sup> Konkuk University, Korea.</p>
PS8-11	<p><b>The Effect of Rotator Cuff Imbalance during Glenohumeral Abduction</b>  <u>Tomoya Matsushashi</u><sup>1</sup>, John W. Sperling<sup>2</sup>, Scott P. Steinmann<sup>2</sup>, Kai-Nan An<sup>2</sup>, Norisama Iwasaki<sup>1</sup>  <sup>1</sup> Hokkaido University Graduate School of Medicine, Japan. <sup>2</sup> Mayo Clinic, USA.</p>
PS8-12	<p><b>Conditioned Media of Adipose-derived Stem Cells Suppress Cigarette Smoke Induced Epithelial-Mesenchymal Transition in Lung Epithelial Cells</b>  Tsung-Hsien Chen<sup>1#</sup>, Chia-Hua Liu<sup>1</sup>, Tzu-Ying Chen<sup>1</sup>, Kurt MC Lin<sup>1*</sup>  <sup>1</sup> National Health Research Institutes, Taiwan.</p>
PS8-13	<p><b>Effect of Mucous Viscosity on Ciliary Beat in the Tracheal Lumen</b>  Tomofumi Haga<sup>1</sup>, Kenji Kikuchi<sup>2</sup>, Keiko Numayama-Tsuruta<sup>1</sup>, Hironori Ueno<sup>3</sup>, Takami Yamaguchi<sup>1</sup>, <u>Takuji Ishikawa</u><sup>1,2</sup>  <sup>1</sup> Tohoku University, Japan. <sup>2</sup> Tohoku University, Japan. <sup>3</sup> Aichi University of Education, Japan.</p>
PS8-14	<p><b>Digest Blood Sucked by a Female Mosquito</b>  <u>Kenji Kikuchi</u><sup>1</sup>, Yosuke Imai<sup>1</sup>, Takami Yamaguchi<sup>2</sup>, Takuji Ishikawa<sup>1</sup>  <sup>1</sup> Tohoku University, Japan. <sup>2</sup> Tohoku University, Japan.</p>
PS8-15	<p><b>Mechanics of Nodal Cilia in Early Mouse Embryo</b>  <u>Toshihiro Omori</u><sup>1</sup>, Hiroto Sugai<sup>2</sup>, Yohsuke Imai<sup>1</sup>, Takuji Ishikawa<sup>1,2</sup>  <sup>1</sup> Tohoku University, Japan. <sup>2</sup> Tohoku University, Japan.</p>
PS8-16	<p><b>Study on Tomographic Micro-Visualization of Erythrocyte Velocity Distribution Using High Frequency Modulated Low Coherence Interferometer (Optical Coherence Doppler Velocigraphy)</b>  <u>Ryohei Nishino</u><sup>1</sup>, Souichi Saeki<sup>1</sup>, Suguru Mishima<sup>1</sup>, Minoru Yoshiyama<sup>2</sup>, Atsusi Shibata<sup>2</sup>, Yudai Yamaguchi<sup>2</sup>  <sup>1</sup> Osaka City University, Japan. <sup>2</sup> Osaka City University, Japan.</p>

PS8-17	<p><b>Pre-cooling effect on Thermal Response of Subcutaneous Tissue with Three-layer Architectures to Ultra-sonic Heating: Numerical Study</b> <u>Huang-Wen Huang</u><sup>1</sup> <sup>1</sup> Tamkang University, Taiwan.</p>
PS8-18	<p><b>Athletic Vision Performance and Reaction Time in Badminton Players</b> Chih-Hsiu Cheng<sup>1</sup>, <u>Ren-Wei Chen</u><sup>1</sup>, Hsin-Yi Kathy Cheng<sup>2</sup>, Li-Ying Chen<sup>2</sup>, Yuan-Liang Wen<sup>1</sup>, I-Hsuan Sha<sup>1</sup>, Yin-Ching Lo<sup>1</sup>, Ying-Kai Chen<sup>1</sup>, Yi-Ting Yin<sup>1</sup>, Xing-Ting Liu<sup>1</sup> <sup>1</sup> Chang Gung University, Taiwan. <sup>2</sup> Chang Gung University, Taiwan.</p>

## Saturday, 19 September 2015

8:45 - 9:45 Hall	<b>GS6 : Musculoskeletal Biomechanics</b> <b>Chair(s): H. S. Kim (Yonsei University, Korea)</b> <b>Kazuhiro Fujisaki (Hiroasaki University, Japan)</b>
8:45 - 9:00 GS6-1	<b>Biomechanical Assessment of Collagenase-Induced Achilles Tendinopathy in Rats</b> <u>Hsiao-Feng Chieh</u> <sup>1</sup> , Chien-Ju Lin <sup>2</sup> , Li-Chieh Kuo <sup>3</sup> , I-Ming Jou <sup>4</sup> , Fong-Chin Su <sup>1,2</sup> <sup>1</sup> National Cheng Kung University, Taiwan. <sup>2</sup> Medical Device Innovation Center, National Cheng Kung University, Taiwan. <sup>3</sup> National Cheng Kung University, Taiwan. <sup>4</sup> Department of National Cheng Kung University, Taiwan.
9:00 - 9:15 GS6-2	<b>Force Simulation of Human Biceps Brachii Using 4-Channel Surface Electromyography</b> <u>Akira Ito</u> <sup>1</sup> , Youjiro Tamura <sup>2</sup> , Masami Saito <sup>3</sup> <sup>1</sup> Suzuka National College of Technology, Japan. <sup>2</sup> Suzuka National College of Technology, Japan. <sup>3</sup> Yonago National College of Technology, Japan.
9:15 - 9:30 GS6-3	<b>Evaluation of the Effects of Multi-Stimulation as a Treatment for Osteoporosis</b> <u>B.K. Kang</u> <sup>1</sup> , D. H. Seo <sup>1</sup> , J. H. Park <sup>1</sup> , H. S. Kim <sup>1</sup> <sup>1</sup> Yonsei University, Korea.
9:30 - 9:45 GS6-4	<b>Stress Distribution Generated in the Forearm Muscles during Gripping</b> <u>Saran Keeratihattayakorn</u> <sup>1</sup> , Satoshi Yamada <sup>2</sup> , Yasuhiro Nakajima <sup>3</sup> , Masahide Harada <sup>4</sup> , Norimasa Iwasaki <sup>5</sup> , Shigeru Tadano <sup>2</sup> <sup>1</sup> Hokkaido University, Japan. <sup>2</sup> Hokkaido University, Japan. <sup>3</sup> Hokkaido Research Organization, Japan. <sup>4</sup> Harada Electronics Industry Limited Sapporo, Japan. <sup>5</sup> Hokkaido University School of Medicine, Japan.
8:45 - 9:45 Room A	<b>OS7 : Injury Biomechanics I</b> <b>Organizer(s): Prof. Shigeru Aomura (Tokyo Metropolitan University, Japan)</b> <b>Chair(s): Shigeru Aomura (Tokyo Metropolitan University, Japan)</b> <b>Yasuhiro Matsui (National Traffic Safety and Environment Laboratory, Japan)</b>
8:45 - 9:00 OS7-1	<b>Evaluation of Effect of Impulsive Strain and Growth Direction Control of Cultured Brain Neuronal Cells</b> <u>Hidenori Furukawa</u> <sup>1</sup> , Akira Kakuta <sup>1</sup> , Hiromichi Nakadate <sup>2</sup> , Shigeru Aomura <sup>2</sup> <sup>1</sup> Tokyo National College of Technology Japan. <sup>2</sup> Tokyo Metropolitan University, Japan.
9:00 - 9:15 OS7-2	<b>Injury Threshold for Axonal Transport by Observation of <math>\beta</math>-Amyloid Precursor Protein in Cultured Rat Brain Neurons Exposed to Impulsive Strain</b> <u>Hiromichi Nakadate</u> <sup>1</sup> , Kazuhiro Kikuta <sup>1</sup> , Evrim Kurtoglu <sup>1</sup> , Shigeru Aomura <sup>1</sup> , Akira Kakuta <sup>2</sup> , Caroline Deck <sup>3</sup> , Remy Willinger <sup>3</sup> <sup>1</sup> Tokyo Metropolitan University, Japan. <sup>2</sup> Tokyo National College of Technology, Japan. <sup>3</sup> University Strasbourg, ICUBE and CNRS, France.



9:15 - 9:30 OS7-3	<b>Brain Injury Criteria Expressed in Terms of Axons Trains</b> Debasis Sahoo <sup>1</sup> , Caroline Deck <sup>1</sup> , <u>Remy Willinger</u> <sup>1</sup> <sup>1</sup> University Strasbourg, ICUBE and CNRS, France.
9:30 - 9:45 OS7-4	<b>Identification of Potential Injury Risk via Analysis of Human Responses during Low Speed Front-Head Collision</b> LeeYong Song <sup>1</sup> , <u>JaeYeong Lee</u> <sup>1</sup> , JiHye Han <sup>1</sup> , Hyung Joo Kim <sup>2</sup> , Inju Lee <sup>2</sup> , Dohyung Lim <sup>1</sup> <sup>1</sup> Sejong University, Korea. <sup>2</sup> Hyundai Motor Group, Korea.
<b>8:45 - 9:45 Room B</b>	<b>GS1 : Cell and Tissue Biomechanics VI</b> <b>Chair(s): Takuji Koike (The University of Electro-Communications, Japan) Tatacipta Dirgantara (Institut Teknologi Bandung, Indonesia)</b>
8:45 - 9:00 GS1-27	<b>Patient-Specific Display System to Assist Diagnostic Treatment of Occlusal Disease</b> <u>Norio Inou</u> <sup>1</sup> , Yoshihito Manome <sup>1</sup> , Hitoshi Kimura <sup>1</sup> , Eiichiro Minemura <sup>2</sup> , Koutaro Maki <sup>2</sup> <sup>1</sup> Tokyo Institute of Technology, Japan. <sup>2</sup> Showa University, Japan.
9:00 - 9:15 GS1-28	<b>Numerical Analysis on Stress Distribution of Teeth and Periodontal Tissues due to Bruxism</b> Anthony Sugiharta Budiaman <sup>1</sup> , <u>Tatacipta Dirgantara</u> <sup>2</sup> , Aldilla Miranda <sup>3</sup> , Sandro Mahradi <sup>1</sup> , Andi Isra Mahyuddin <sup>1</sup> <sup>1</sup> Institut Teknologi Bandung, Indonesia. <sup>2</sup> Institut Teknologi Bandung, Indonesia. <sup>3</sup> Universitas Padjadjaran, Indonesia.
9:15 - 9:30 GS1-29	<b>Effect of Insertion of Cochlear Implant Electrode on Basilar Membrane Vibration: An Analysis Using Finite-Element Cochlear Models</b> <u>Takuji Koike</u> <sup>1</sup> , Kozo Kumakawa <sup>2</sup> , Tasuku Sakashita <sup>1</sup> , Sintaro Hanawa <sup>1</sup> <sup>1</sup> The University of Electro-Communications, Tokyo, Japan. <sup>2</sup> Toranomon Hospital, Japan.
9:30 - 9:45 GS1-30	<b>Sound Amplification Mechanism by Three Rows of Outer Hair Cells in Mammals</b> <u>Michio Murakoshi</u> <sup>1,2</sup> , Hiroshi Wada <sup>3</sup> <sup>1</sup> Kagoshima University, Japan. <sup>2</sup> PRESTO, JST, Japan. <sup>3</sup> Tohoku Bunka Gakuen University, Japan.
<b>8:45 - 9:45 Room C</b>	<b>GS7 : Rehabilitation Biomechanics I</b> <b>Chair(s): Laura Gastaldi (Politecnico di Torino, Italy) Andi Isra Mahyuddin (Institut Teknologi Bandung, Indonesia)</b>
8:45 - 9:00 GS7-1	<b>The Functional Effects of Spiral Sit-to-Stand Training on Stroke Patients</b> <u>Duen-Ren Sung</u> <sup>1,2</sup> , Chiuhsiang Joe Lin <sup>1</sup> , Jan-Wei Chiu <sup>2</sup> <sup>1</sup> National Taiwan University of Science and Technology, Taiwan. <sup>2</sup> Taipei Veterans General Hospital, Taiwan.
9:00 - 9:15 GS7-2	<b>Investigation of Gait Parameters of Subjects with Idiopathic Scoliosis</b> M. Renaldi A. Laksana <sup>1</sup> , Nuha D. Anggraeni <sup>1</sup> , Sandro Mahradi <sup>1</sup> , Tatacipta Dirgantara <sup>2</sup> , <u>Andi Isra Mahyuddin</u> <sup>1</sup> <sup>1</sup> Institut Teknologi Bandung, Indonesia. <sup>2</sup> Institut Teknologi Bandung, Indonesia.

9:15 - 9:30 GS7-3	<p><b>Case Study of Biomechanics of the Handcycling Exercise</b>  <u>Stefano Pastorelli</u><sup>1</sup>, Laura Gastaldi<sup>1</sup>  <sup>1</sup> Politecnico di Torino, Italy.</p>
9:30 - 9:45 GS7-4	<p><b>A Novel Stochastic Resonance Noise-Enhanced Insole for Its Application in Improving Postural Control in People with Parkinson's Disease</b>  <u>Chich-Haung Yang</u><sup>1</sup>, Shin-Yuan Chen<sup>2</sup>, Siang-Yi Hong<sup>3</sup>, Lan-Yuen Guo<sup>4</sup>  <sup>1</sup> Tzu-Chi University, Taiwan. <sup>2</sup> Hua-Lien Tzu-Chi Hospital, Taiwan. <sup>3</sup> Hua-Lien Tzu-Chi Hospital, Taiwan. <sup>4</sup> Kaohsiung Medical University, Taiwan.</p>
10:00 - 11:15 Hall	<p><b>OS8 : Wearable Technologies for Rehabilitation</b>  <b>Organizer(s): Prof. Raye Chen-Hua Yeow (National University of Singapore)</b>  <b>Prof. James Goh (National University of Singapore)</b>  <b>Chair(s): Raye Chen-Hua Yeow (National University of Singapore)</b>  <b>Ming-Shaung Ju (National Cheng Kung University, Taiwan)</b></p>
10:00 - 10:15 OS8-1	<p><b>Wearable Soft Robotics for Rehabilitation</b>  Fanzhe Low<sup>1</sup>, Hong-Kai Yap<sup>3</sup>, Jeong-Hoon Lim<sup>4</sup>, Fatima Nasrallah<sup>5</sup>, James Cho-Hong Goh<sup>1</sup>, <u>Chen-Hua Yeow</u><sup>1,2</sup>  <sup>1</sup> National University of Singapore, Singapore. <sup>2</sup> National University of Singapore, Singapore. <sup>3</sup> National University of Singapore, Singapore. <sup>4</sup> National University Hospital, Singapore. <sup>5</sup> Clinical Imaging Research Centre, Agency for Science, Technology and Research, Singapore.</p>
10:15 - 10:30 OS8-2	<p><b>A Novel Drift Removal Method for Gait Analysis Using Wearable Sensor Systems</b>  <u>Ryo Takeda</u><sup>1</sup>, Giulia Lisco<sup>2</sup>, Tadashi Fujisawa<sup>3</sup>, Laura Gastaldi<sup>2</sup>, Stefano Pastorelli<sup>2</sup>, Harukazu Tohyama<sup>4</sup>, Shigeru Tadano<sup>1</sup>  <sup>1</sup> Hokkaido University, Japan. <sup>2</sup> Politecnico di Torino, Italy. <sup>3</sup> Hokkaido University, Japan. <sup>4</sup> Hokkaido University School of Medicine, Japan.</p>
10:30 - 10:45 OS8-3	<p><b>Integrate Transcranial Direct Current Stimulation with Brain-Computer-Interface Controlled Orthotic Hands for Rehabilitation of Stroke Patients</b>  Ko-Chieh Chao<sup>1</sup>, Yu Ching Lin<sup>1</sup>, Chou-Ching K. Lin<sup>1</sup>, <u>Ming-Shaung Ju</u><sup>1</sup>  <sup>1</sup> National Cheng Kung University, Taiwan.</p>
10:45 - 11:00 OS8-4	<p><b>Fatigue Analysis of Quadriceps Femoris Muscle Using Convex Hull Area of Mechanomyography</b>  <u>Isu Shin</u><sup>1</sup>, Jongsang Son<sup>1</sup>, Soonjae Ahn<sup>1</sup>, Eunyoung Choi<sup>1</sup>, Youngho Kim<sup>1</sup>  <sup>1</sup> Yonsei University, Korea.</p>
11:00 - 11:15 OS8-5	<p><b>Comparison between a MIMUs and Electromechanical System for Gait Analysis</b>  <u>Laura Gastaldi</u><sup>1</sup>, Valentina Agostini<sup>2</sup>, Giulia Lisco<sup>1</sup>, Marco Knaflitz<sup>2</sup>, Shigeru Tadano<sup>3</sup>  <sup>1</sup> Politecnico di Torino, Italy. <sup>2</sup> Politecnico di Torino, Italy. <sup>3</sup> Hokkaido University, Japan.</p>

10:00 - 11:15 Room A	<p><b>OS7 : Injury Biomechanics II</b></p> <p><b>Organizer(s): Prof. Shigeru Aomura (Tokyo Metropolitan University, Japan)</b>  <b>Chair(s): Hiromichi Nakadate (Tokyo Metropolitan University, Japan)</b>  <b>Yasuhiro Matsui (National Traffic Safety and Environment Laboratory, Japan)</b></p>
10:00 - 10:15 OS7-5	<p><b>Pedestrian Kinematics and Brain Injury Risk Involved in a Sideswipe Accident</b>  <u>Atsutaka Tamura</u><sup>1</sup>, Takao Koide<sup>1</sup>  <sup>1</sup>Tottori University, Japan.</p>
10:15 - 10:30 OS7-6	<p><b>Observations of Intracranial Behaviour during Occipital Collisions in Judo Using Physical Head Model</b>  <u>Takeshi Kamitani</u><sup>1,2</sup>, Yusuke Miyazaki<sup>3</sup>, Masaki Omiya<sup>1</sup>  <sup>1</sup>Keio University, Japan. <sup>2</sup>Tokyo Shinjuku Medical Center, Japan. <sup>3</sup>Tokyo Institute of Technology, Japan.</p>
10:30 - 10:45 OS7-7	<p><b>Traumatic Brain Injury Criteria in Judo Based on Reconstruction Analysis</b>  Yuelin Zhang<sup>1</sup>, Daiki Hosono<sup>2</sup>, Tadimitsu Matsuda<sup>3</sup>, Nicolas Bourdet<sup>4</sup>, Hiromichi Nakadate<sup>2</sup>, Remy Willinger<sup>4</sup>, <u>Shigeru Aomura</u><sup>2</sup>  <sup>1</sup>Aoyama Gakuin University, Japan. <sup>2</sup>Tokyo Metropolitan University, Japan. <sup>3</sup>Uekusa Gakuen University, Japan. <sup>4</sup>Strasbourg University, France.</p>
10:45 - 11:00 OS7-8	<p><b>Severity of Cyclist Head Injuries Caused by Impacts with Vehicle Structure and Road Surface</b>  <u>Shoko Oikawa</u><sup>1</sup>, Yasuhiro Matsui<sup>1</sup>, Asato Wakabayashi<sup>1</sup>, Sayaka Gomei<sup>2</sup>, Hiromichi Nakadate<sup>3</sup>, Shigeru Aomura<sup>3</sup>  <sup>1</sup>National Traffic Safety and Environment Laboratory, Japan. <sup>2</sup>Dokkyo Medical University Koshigaya Hospital, Japan <sup>3</sup>Tokyo Metropolitan University, Japan.</p>
11:00 - 11:15 OS7-9	<p><b>Next Step towards Advanced Helmet Test Methods</b>  Caroline Deck<sup>1</sup>, Nicolas Bourdet<sup>1</sup>, <u>Remy Willinger</u><sup>1</sup>  <sup>1</sup>University Strasbourg, ICUBE and CNRS, France.</p>
10:00 - 11:15 Room B	<p><b>GS8 : Artificial Organs and Biomaterials</b></p> <p><b>Chair(s): Yoshitaka Nakanishi (Kumamoto University, Japan)</b>  <b>Masahiro Nishida (National Institute of Advanced Industrial Science and Technology, Japan)</b></p>
10:00 - 10:15 GS8-1	<p><b>Effect of Impeller Tip Geometry on the Impeller Stability of a Monopivot Centrifugal Blood Pump</b>  <u>Masahiro Nishida</u><sup>1</sup>, Kento Nakayama<sup>2</sup>, Daisuke Sakota<sup>1</sup>, Ryo Kosaka<sup>1</sup>, Osamu Maruyama<sup>1</sup>, Katsuyuki Kuwana<sup>2</sup>, Yasuo Kawaguchi<sup>3</sup>, Takashi Yamane<sup>4</sup>  <sup>1</sup>National Institute of Advanced Industrial Science and Technology, Japan. <sup>2</sup>Tokyo University of Science, Japan. <sup>3</sup>Senko Medical Instrument, Mfg. Co., Ltd., Japan. <sup>4</sup>Kobe University, Japan.</p>
10:15 - 10:30 GS8-2	<p><b>A Biomimetic Sealing System for a Rotating Shaft (Part 2: Practical Application)</b>  <u>Yoshitaka Nakanishi</u><sup>1</sup>, Takuro Honda<sup>1</sup>, Yuta Nakashima<sup>1</sup>, Hidehiko Higaki<sup>2</sup>  <sup>1</sup>Kumamoto University, Japan. <sup>2</sup>Kyushu Sangyo University, Japan.</p>

10:30 - 10:45 GS8-3	<b>Sulfated Silk Fibroin Scaffolds for Vascular Regeneration</b> <u>Haifeng Liu</u> <sup>1</sup> , Yubo Fan <sup>1</sup> <sup>1</sup> Beihang University, China.
10:45 - 11:00 GS8-4	<b>Effect of Eluted Poly (Vinyl Alcohol) (PVA) Molecules in Water Lubricant on Total Wear Amount of PVA Hydrogel</b> <u>Seiji Omata</u> <sup>1</sup> , Yoshinori Sawae <sup>1</sup> , Teruo Murakami <sup>1</sup> <sup>1</sup> Kyushu University, Japan.
11:00 - 11:15 GS8-5	<b>Redox Gene Expression of Adipose-Derived Stem Cells in Response to Soft Hydrogel</b> Fahsai Kantawong <sup>1</sup> , <u>Thasaneeya Kuboki</u> <sup>2</sup> , Satoru Kidoaki <sup>2</sup> <sup>1</sup> Chiang Mai University, Thailand. <sup>2</sup> Kyushu University, Japan.
<b>10:00 - 11:15 Room C</b>	<b>GS7 : Rehabilitation Biomechanics II</b> <b>Chair(s): TJ Huang (National Cheng Kung University, Taiwan)</b>
10:00 - 10:15 GS7-5	<b>Human Walking Balance Analysis and Perturbation-based Rehabilitation Strategy Development</b> Lei Li <sup>1</sup> , K. H. Hoon <sup>1</sup> , <u>K. H. Low</u> <sup>1</sup> <sup>1</sup> Nanyang Technological University, Singapore.
10:15 - 10:30 GS7-6	<b>Kinematic Analysis of Obstacle Crossing in Children with Down Syndrome</b> <u>Hao-Ling Chen</u> <sup>1</sup> , Wan-Hui Yu <sup>1</sup> , Hsiu-Chen Yeh <sup>2</sup> <sup>1</sup> National Taiwan University, Taiwan. <sup>2</sup> Taoyuan Armed Forces General Hospital, Taiwan.
10:30 - 10:45 GS7-7	<b>Human Motion Analysis of a Single Curved Shoulder Arc for Stroke Patient</b> <u>Shu-Zon Lou</u> <sup>1</sup> , Yu-Chi Chen <sup>2</sup> , Chiung-Ling Chen <sup>1</sup> , Hsin-Hung du <sup>3</sup> <sup>1</sup> Chung Shan Medical University, Taiwan. <sup>2</sup> China Medical University, Taiwan. <sup>3</sup> Hsiuping University of Science and Technology, Taiwan.
10:45 - 11:00 GS7-8	<b>Application of a Pre-Impact Fall Detection Using an Inertial Sensor Unit</b> <u>Soonjae Ahn</u> <sup>1</sup> , Isu Shin <sup>1</sup> , Jaesung Ryu <sup>1</sup> , Jongman Kim <sup>1</sup> , Baekdong Cha <sup>1</sup> , Eunkyong Choi <sup>1</sup> , Youngho Kim <sup>1</sup> <sup>1</sup> Yonsei University, Korea.
11:00 - 11:15 GS7-9	<b>Development of a Dysphagia Rehabilitation Training Device (DRT) Device</b> <u>Hee Youn Shim</u> <sup>1</sup> , Ernest Xuan Hao Tan <sup>1</sup> , Mark Yuxuan Chng <sup>1</sup> , Fang Ming Lim <sup>1</sup> , Huai Zhi Goh <sup>2</sup> , Eng Keng Soh <sup>1</sup> , Lakhaphat Aigu Lin <sup>2</sup> , Celia Ia Choo Tan <sup>2</sup> <sup>1</sup> National University of Singapore, Singapore <sup>2</sup> Singapore General Hospital, Singapore.

<p><b>11:30 - 12:30</b> <b>Hall</b></p>	<p><b>Plenary Lecture 3</b> <b>Chair(s): Shigeru Tadano (Hokkaido University, Japan)</b></p>
<p>11:30 - 12:30</p>	<p><b>Current Issues in the Reconstruction and Description of Skeletal Movement</b> Prof. Aurelio Cappozzo, PhD Professor of Interuniversity Centre of Bioengineering of the Human Neuromusculoskeletal System Department of Movement, Human Sciences, University of Rome "Foro Italico", Italy</p>
<p><b>13:30 - 14:45</b> <b>Hall</b></p>	<p><b>GS9 : Clinical Bioengineering</b> <b>Chair(s): Bing-Shiang Yang (National Chiao Tung University, Taiwan)</b></p>
<p>13:30 - 13:45 GS9-1</p>	<p><b>Evaluation of the Effectiveness of an Aging Suit</b> <u>TJ Huang</u><sup>1</sup>, Li-Tung Chang<sup>2</sup>, Kai-Wei Huang<sup>1</sup>, Chian-Yuh Lin<sup>2</sup> <sup>1</sup> National Cheng Kung University, Taiwan. <sup>2</sup> Chia Nam Pharmacy and Science, Taiwan.</p>
<p>13:45 - 14:00 GS9-2</p>	<p><b>Classification of Fall Risks Using a Generalized Discriminant Analysis</b> <u>Yi-Horng Lai</u><sup>1,3</sup>, I-Ching Lin<sup>2</sup>, Jau-Woei Peng<sup>1</sup>, Lan-Yuen Guo<sup>3</sup> <sup>1</sup> National Sun Yat-Sen University, Taiwan. <sup>2</sup> Changhua Christian Hospital, Taiwan. <sup>3</sup> Kaohsiung Medical University, Taiwan.</p>
<p>14:00 - 14:15 GS9-3</p>	<p><b>Development of Non-Invasive System for Measuring Blood Calcium Level in Dairy Cattle Using Portable Wireless Electrocardiograph</b> <u>Megumi Itoh</u><sup>1</sup>, Yasuhiro Nakajima<sup>2</sup>, Koki Kuwano<sup>2</sup>, Daisuke Maeda<sup>2</sup>, Yoshie Sakurai<sup>2</sup>, Yoshitaka Matsui<sup>2</sup>, Satoshi Kawamoto<sup>3</sup> <sup>1</sup> Obihiro University of Agriculture and Veterinary Medicine, Japan. <sup>2</sup> Hokkaido Research Organization, Japan. <sup>3</sup> Rakuno Gakuen University, Japan.</p>
<p>14:15 - 14:30 GS9-4</p>	<p><b>On Developing an Automatic System for Evaluating Tinetti Performance Oriented Mobility Assessment Scale</b> <u>Yan-Min Huang</u><sup>1</sup>, <u>Yu-Hsiang Hao</u><sup>1</sup>, Bing-Shiang Yang<sup>1</sup> <sup>1</sup> National Chiao Tung University, Taiwan.</p>
<p>14:30 - 14:45 GS9-5</p>	<p><b>Evaluation of Phytochemical Constituents and Antimicrobial Activity of the <i>Mukia maderaspatana</i> (Linn.) M.Roem. leaves against Human Pathogens</b> <u>Arunachalam Chinnathambi</u><sup>1</sup>, Arunkumar Sathasivam<sup>2</sup> <sup>1</sup> King Saud University, Kingdom of Saudi Arabia. <sup>2</sup> Sri Pusham College, India.</p>
<p><b>13:30 - 14:30</b> <b>Room A</b></p>	<p><b>GS10 : Sports and Impact Biomechanics</b> <b>Chair(s): Hiromichi Nakadate (Tokyo Metropolitan University, Japan)</b> <b>Yusuke Miyazaki (Tokyo Institute of Technology, Japan)</b></p>
<p>13:30 - 13:45 GS10-1</p>	<p><b>Development of New Anthropometric Dummy Head Capable of Brain Injury Evaluation and Visualization</b> <u>Abhiram Railkar</u><sup>1</sup>, Yasuhito Otake<sup>1</sup>, Yusuke Miyazaki<sup>1</sup>, Akira Koikeguchi<sup>2</sup>, Ichiro Amamori<sup>2</sup>, Maika Katagiri<sup>2</sup> <sup>1</sup> Tokyo Institute of Technology, Japan. <sup>2</sup> Takata Corporation, Japan.</p>

13:45 - 14:00 GS10-2	<b>Development of Skin Laceration Injury Criterion -Numerical Study Using Skin Finite Element Model-</b> <u>Masato Ito</u> <sup>1</sup> , Jonas A. Pramudita <sup>2</sup> , Ryoji Watanabe <sup>1</sup> , Harutaka Kubota <sup>3</sup> , Yuji Tanabe <sup>2</sup> <sup>1</sup> Panasonic Corporation, Japan. <sup>2</sup> Niigata University, Japan. <sup>3</sup> Niigata University, Japan.
14:00 - 14:15 GS10-3	<b>Evaluation of Increased Endothelial Permeability by Exposure to Impulsive Pressure with In Vitro Blood Brain Barrier Model</b> <u>Eriko Otsu</u> <sup>1</sup> , Risa Kawamata <sup>1</sup> , Hiromichi Nakadate <sup>1</sup> , Shigeru Aomura <sup>1</sup> , Akira Kakuta <sup>2</sup> , Caroline Deck <sup>3</sup> , Remy Willinger <sup>3</sup> <sup>1</sup> Tokyo Metropolitan University, Japan. <sup>2</sup> Tokyo National College of Technology, Japan. <sup>3</sup> University Strasbourg, ICUBE and CNRS, France.
14:15 - 14:30 GS10-4	<b>Reconstruction Simulation of a Concussion Case of Head Injury Accidents in Playing American Football</b> <u>Ryoma Kita</u> <sup>1</sup> , Takamasa Aoki <sup>1</sup> , Hiromichi Nakadate <sup>1</sup> , Shigeru Aomura <sup>1</sup> , Takayuki Koyama <sup>2</sup> , Yuelin Zhang <sup>3</sup> , Nicolas Bourdet <sup>4</sup> , Caroline Deck <sup>4</sup> , Remy Willinger <sup>4</sup> <sup>1</sup> Tokyo Metropolitan University, Japan. <sup>2</sup> Nihon University, Japan. <sup>3</sup> Hokkaido University, Japan. <sup>4</sup> University Strasbourg, ICUBE and CNRS, France.

<b>13:30 - 15:15 Room B</b>	<b>GS11 : Computational Biomechanics</b> <b>Chair(s): Katsuhiko Sasaki (Hokkaido University, Japan)</b> <b>Daisuke Tawara (Ryukoku University, Japan)</b>
13:30 - 13:45 GS11-1	<b>Rapid Construction of Anatomically-Accurate Model of the Human Foot for Subject-Specific Finite Element Analysis</b> <u>Wen-Ming Chen</u> <sup>1</sup> , Peter Vee-Sin Lee <sup>2</sup> , Sung-Jae Lee <sup>1</sup> <sup>1</sup> Inje University, Korea. <sup>2</sup> University of Melbourne, Australia.
13:45 - 14:00 GS11-2	<b>Constitutive Modeling of an Electrospun Tubular Scaffold Used for Vascular Tissue Engineering</b> <u>Jin-Jia Hu</u> <sup>1</sup> <sup>1</sup> National Cheng Kung University, Taiwan.
14:00 - 14:15 GS11-3	<b>Infra-Obturator Tension Sling for Urinary Incontinence Treatment</b> <u>Bummo Ahn</u> <sup>1,2</sup> , Jeongyoon Yi <sup>3</sup> <sup>1</sup> Korea Institute of Industrial Technology, Korea. <sup>2</sup> University of Science and Technology, Korea. <sup>3</sup> Noeunplus Maternity Clinic, Korea.
14:15 - 14:30 GS11-4	<b>Development of a Human Clavicle Dynamical FE Model</b> <u>TJ Hunag</u> <sup>1</sup> , Li-Tung Chang <sup>2</sup> , Bei-Min Su <sup>1</sup> , Jun-Tai Wu <sup>1</sup> , Kuo-Chang Li <sup>1</sup> <sup>1</sup> National Cheng Kung University, Taiwan. <sup>2</sup> Chia Nam Pharmacy and Science, Taiwan.
14:30 - 14:45 GS11-5	<b>Mathematical Modeling of Non-Linear Osteoblastic Response to Physical Stimulation</b> <u>Tatsuro Yamamoto</u> <sup>1</sup> , Kyohei Ogawa <sup>1</sup> , Shigeo Tanaka <sup>1</sup> <sup>1</sup> Kanazawa University, Japan.
14:45 - 15:00 GS11-6	<b>The Effects of Actin Filament Structure on C2C12 Myoblasts under Compressive Stress In-Vitro: Finite Element Analysis</b> <u>Yifei Yao</u> <sup>1,2</sup> , Damien Lacroix <sup>2</sup> , Arthur FT Mak <sup>1</sup> <sup>1</sup> The Chinese University of Hong Kong, Hong Kong. <sup>2</sup> University of Sheffield, United Kingdom.

15:00 - 15:15 GS11-7	<b>Development of a Seated Human Vibration Model in which Muscle Models are Employed</b> <u>Young Nam Jo</u> <sup>1</sup> , Moon Jeong Kang <sup>1</sup> , Hong Hee Yoo <sup>1</sup> <sup>1</sup> Hanyang University, Korea.
13:30 - 15:15 Room C	<b>GS7 : Rehabilitation Biomechanics III</b> Chair(s): Kengo Ohnishi (Tokyo Denki University, Japan)
13:30 - 13:45 GS7-10	<b>Alterations of Muscle Co-Activations Responded to Multidirectional Dynamic Motions for Balance Rehabilitation Training</b> <u>Hohyun Jung</u> <sup>1</sup> , Jihye Han <sup>1</sup> , Kyeong Jin Chun <sup>2</sup> , Dohyung Lim <sup>1</sup> <sup>1</sup> Sejong University, Korea. <sup>2</sup> Korea Institute of Industrial Technology, Korea.
13:45 - 14:00 GS7-11	<b>Error Tendency of the Motion Captured Scapula Position and Orientation at Shoulder Abduction Movement when the Land Marks are Mounted on the Stretching Wear</b> <u>Hibiki Takami</u> <sup>1</sup> , Kengo Ohnishi <sup>2</sup> <sup>1</sup> Graduate School of Tokyo Denki University, Japan. <sup>2</sup> Tokyo Denki University, Japan.
14:00 - 14:15 GS7-12	<b>Implantable Functional Neuromuscular Stimulation System for Ankle Angle Control</b> <u>Kang-Il Song</u> <sup>1,2</sup> , Kuiwon Choi <sup>1</sup> , Inchan Youn <sup>1,3</sup> <sup>1</sup> Korea Institute of Science and Technology, Korea. <sup>2</sup> Yonsei University, Korea. <sup>3</sup> Korea University of Science and Technology, Korea.
14:15 - 14:30 GS7-13	<b>A Hippo-Therapy-Simulator Intervention to Improve the Posture Control Ability for Children with Attention Deficit/Hyperactivity Disorder</b> Nien-Shen Pang <sup>1</sup> , Tsui-Fen Yang <sup>2</sup> , <u>Sai-Wei Yang</u> <sup>1</sup> <sup>1</sup> National Yang-Ming University, Taiwan. <sup>2</sup> Veteran General Hospital, Taiwan.
14:30 - 14:45 GS7-14	<b>Effects of the Adjustable Cushion Shoes on Gait-Related Parameters</b> <u>Cheng-Feng Lin</u> <sup>1</sup> , Min-Chi Tsai <sup>1</sup> , Wan-Ching Lee <sup>1</sup> <sup>1</sup> National Cheng Kung University, Taiwan.
14:45 - 15:00 GS7-15	<b>Are Walking Overground and on a Treadmill Similar Enough for Individual Identification?</b> <u>Yi-Ting Yang</u> <sup>1</sup> , Bing-Shiang Yang <sup>1</sup> <sup>1</sup> National Chiao Tung University, Taiwan.
15:00 - 15:15 GS7-16	<b>Development of a Real-Time Activity Classification System for Activities of Daily Living</b> Yu-Ting Lee <sup>1</sup> , <u>Hsin-Yi Tung</u> <sup>1</sup> , Bing-Shiang Yang <sup>1</sup> <sup>1</sup> National Chiao Tung University, Taiwan.
15:30 - 16:00 Hall	<b>Closing Ceremony</b>