ISEM'13-Sendai, Technical Program (Tentative)

November 3rd, 2013

15:00-17:00 **Registration**

17:00-18:30 **Reception (Exhibition Hall)**

November 4th, 2013

8:30-9:30 **Registration**

9:30-9:40

Opening Ceremony (Memorial Hall) Chair: Y. Tanabe (Niigata Univ.)

Makoto SAKAMOTO

(President of the Japanese Society for Experimental Mechanics, Niigata Univ.)

Hiroshi TAKAHASHI

(Chairperson of Organizing Committee of 8th ISEM, Tohoku Univ.)

9:40-10:40

Keynote Lecture 1 (Memorial Hall) Chair: M. Fujigaki (Wakayama Univ.)

Elastic Wave Propagation in Transversely Impacted Beams

Prof. Dulal GOLDAR (Sharda University, India)

10:40-10:50 ---------- (Break) ----------

10:50-12:05

Fluid Dynamics 1 (Room A)

1 MEMS Thermal Film Sensors for Flow Research
J. J. Miau, T. S. Leu, R. M. Yu, J. Y. Dai, J. K. Tu, C. T. Wang, V. Lebiga, D. Mironov, A. Pak, V. Zinovyev and K. M. Chung

28 Measurements of Wall Shear Stress Fluctuation with the Micro-Fabricated Hot-Film Sensor in a Boundary Layer of Wall Jet
Takuya SAWADA, Osamu TERASHIMA, Yasuhiko SAKAI, Kouji NAGATA, Mitsuhiro SHIKIDA, Hirotaka HIDA and Yasumasa ITO

93 Removal of Fine Particles on a Wall by High Speed Impinging Air Jet (Estimation of Removal Force)
Sanghyeon SONG, Kazuhiko SOEMOTO, Tatsuro WAKIMOTO and Kenji KATOH

94 Adhesive Force due to a Thin Liquid Film between Two Smooth Surfaces (Wringing Mechanism of Gage Blocks)
Kenji KATOH and Tatsuro WAKIMOTO

40 Study on Separation Characteristics of Fallen Leaves from Water Flow at Intake of Micro Hydroelectric Generator
Hefeng LIANG, Masatoshi YOSHIDA and Kenji AMAGAI

Solid Mechanics 1 (Room B)

2 Static Bending Characteristics of Bamboo-Fiber Laminated Plates
Kazufumi UDA

3 Trial Production of Ultra-Lightweight and Small EV: pico-EV using Bamboo-Fiber Laminated Plates
Kazufumi UDA and Yoshihiko TAKAHASHI

83 Mechanical Properties of South America Curaua Fiber at Testing Temperature of up to 473K
Taichi SAKAMOTO, Akihiro TAKAHASHI and Mayu MIYAGAWA

84 Mechanical Properties and Fracture Behavior of Ramie Fiber at Testing Temperature of up to 473K
Mayu MIYAGAWA, Akihiro TAKAHASHI and Taichi SAKAMOTO

85 Research for Examination on Optimum Shape of Stamping Punch for Metal Sheet
Hirofumi YOTSUMOTO and Akihiro TAKAHASHI

Bio Engineering 1 (Room C)

95 Eye-Tracking Analysis of Nurses for Development of Nursing Skills in Patient Care
Hiromu SASAKI, Ko KAWAI, Yuji TANABE, Makoto SAKAMOTO and Mieko SADAKATA

125 Relationship Electrical Muscle Activity and Muscle Strength of the Biceps Muscle using EMG Bluetooth
H. Ali Jawad Abed

4 Walking Motion Analysis with the Aid of Walker Using Acceleration Sensors
Satoru OKAMOTO and Hiroshi KUROYABU

19 An Aspect in Free Flight of a Butterfly Colias erate Esper
Seiichi SUDO and Kohei KITADERA

48 Shrinkage Stress Evaluation of Light-Cured Composite Resin in Cavities
Kazuo ARAKAWA, Sane-Jae YOON and Mariko NISHIMURA

Civil Engineering 1 (Room D)

129 Influence of Silicon Content on Strength of Geopolymer Material with Fly Ash
Duc Hung PHAN, Thanh Tai TRAN, Linh Phuong VO and Anh Tuan LE

36 The Full Scale Rainfall Experimental Study of Fusion Technology with Monitoring and Reinforcement Method on Slope
Toru DANJO, Kazunari SAKO, Masamitsu FUJIMOTO, Naoto IWASA and Ryoichi FUKAGAWA

24 A Piezoelectric Film Type Scour Monitoring System for Bridge Pier
Chien-Hsiang Wang, Hao-Lin Wang and Chung-Yue Wang

17 Study on New Estimation Method of Shear Strength Parameters of Subsurface Layers
Tomoaki SATOMI, Yuki SATO and Hiroshi TAKAHASHI

8 Analysis on Movement of Wheel-Typed Vehicle with Crawlers in between Front and Rear Wheels on Soft Ground
Ryosuke ETO, Tomoaki SATOMI and Hiroshi TAKAHASHI

12:05-13:00 ---------- (Lunch) ----------

13:00-15:00

Poster Session (Exhibition Hall)

1. General Presentation
2. Special Presentation by Students of College of Technology, Awarding Ceremony

15:00-15:15 ---------- (Break) ----------

15:15-17:00

Fluid Dynamics 2 (Room A)

123 Modeling of Tsunami Waves in an Open Hydrodynamic Channel
Boris BOSHENYATOV and Dmitry LISIN

102 Small Model Experiment on the Gradient of Pressure Wave by Entering the Tunnel of a Conventional Limited Express
Hirokazu ENDO, Fumiya MEGURO, Masanori OTA and Kazuo MAENO

64 Distribution Control of Solid Particles-Liquid Two-Phase Flow by Using Swirl Flow at a Manifold
Shohei YOSHIKAWA and Hideaki MONJI

49 Thermal Fluid Flow Transport Phenomenon over Protrusion Cylinders in Free Stream
Zijie LIN and Shuichi TORII

74 Drag Force Acting on Each Sphere in a Lattice Arrangement of Sphere
Shuhei ICHIKAWA and Hideaki MONJI

78 Drag Force Acting on a Sphere behind an Obstacle
Shumpei NOZAKI, Shuhei ICIKAWA and Hideaki MONJI

77 Experimental Study of Wake Flow Interaction in Tandem Arrangement at Critical Reynolds Numbers
Hung-Yen, Yi-Chung Liu and Fei-Bin Hsiao

Solid Mechanics 2 (Room B)

23 Investigation of Metal Material Parameters Identification by Dynamic Hysteretic Behavior of the Indentation Tests and FEM Analysis
Junji SAKAMOTO and Masauki NAKAMURA

31 Prediction Method of Fracture Strain for Non-Standardized Specimen Based on Local Absorbed Strain Energy Distribution
Masato TSUTSUI, Takuto HARA, Tadao FUKUTA, Kiyotaka OBUNAI and Koichi OZAKI

124 Effects of Filled Cell Pattern and Position on Dynamic In-plane Compression Properties of Aluminum Honeycombs
Masahiro NISHIDA, Koji TERANISHI and Shinya OTANI

91 Relationship between Change of Elastic Modulus Caused by Plastic Deformation and Development of Dislocation
Ryohei TOMIZAWA, Shuichi ARIKAWA and Satoru YONEYAMA

61 Cyclic Stress Measurement Using Electrodeposited Copper Foil (Effect of Ambient Temperature on the Grain Growth)
Yuichi ONO, Yasuyuki YAGI and Kouitsu MIYACHIKA

62 Investigation of Deformation Mechanism under Indentation Testing of Metastable Beta-type Ti-Mo Alloys
Ichiro SHIMIZU, Noriaki KIMURA, Naoya TADA and Yoshito TAKEMOTO

65 Dynamic Tensile Stress-Strain Behavior of Nuclear-Grade Graphite IG-11
Kenji NAKAI and Takashi YOKOYAMA

Scale Modeling (Room C)

27 Scale Modeling of Buoyancy-induced Instability of Pool Fires
Yuji NAKAMURA, Sou OKUIZUMI, Hiroyuki TORIKAI and Akihiko ITO

30 Discussion of Surface Flash Mechanism for Large Nap Density
Shintarou YOSHIKAWA and Kazunori KUWANA

47 Flame Propagation and Fractal Dimension in a Concentric Double Cylinders Apparatus
Yoshiki NOGUCHI, Keizo NAKAMURA, Yosuke HAGIWARA, Seiya HITOMI and Kazunori KUWANA

59 Exhaust Gas Characteristics of Micro Cluster Combustion of Methane
Taro HIRASAWA, Naoki SATO, Yuji NAKAMURA and Takamasa, ENDO

69 Scale Effect on Flame Spread Rate in Narrow Cylindrical Gap
Tsuneyoshi MATSUOKA, Yuji NAKAMURA, Harunori NAGATA and Takuya YAMAZAKI

104 Scale Modeling on Smoldering of Thin Rod Combustibles
Shinya GOITSUKA, Yuji NAKAMURA and Tsuneyoshi MATSUOKA

Material Processing (Room D)

25 Liquid and Powder Motion in Packed Bed
Tatsuya KON, Shin KIKUCHI, Shigeru UEDA and RyoINOUE

32 Reductive Removal of Solutes in Molten Iron by Using Immiscibility of Iron and Ca-Alloy
Hideki ONO, Minoru MURAKAMI, Jingo ABOSHI and Eiichi TAKEUCHI

35 Fabrication of Metal Particle with Porous CaO and Molten Metal Sulfide using Spontaneous Wettability Conversion
Masashi NAKAMOTO, Toshihiro TANAKA and Takaiku YAMAMOTO

50 Improvement of Ductility of Organic Semiconductor Materials for Flexible Organic Light Emitting Diode
Toshiro KOBAYASHI, Takashi YOKOYAMA, Yuichi UTSUMI, Hideyuki KANEMATSU, Tsuyoshi MASUDA and Motomichi YAMAMOTO

73 Zn Addition into Molten Steel by ZnO Reduction
Takahiro MIKI, Kanna IWADATE and Tetsuya NAGASAKA

75 Comparison of Metal Emulsions in Molten Slat under the Gas Bubbling Condition

Nobuhiro MARUOKA, Duk-Yong SONG, Hiroyuki SHIBATA and Shin-ya KITAMURA

43 Viscosity Evaluation of Slag Foam
Noritaka SAITO, Kenta YAMASHITA, Sohei SUKENAGA and Kunihiko NAKASHIMA

November 5th, 2013

10:00-11:00

Keynote Lecture 2 (Memorial Hall) Chair: H. Takahashi (Tohoku Univ.)

Significance of Experimental Mechanics in the Development of Nanocomposites and Energy Devices

Prof. Toshiyuki HASHIDA (Tohoku University, Japan)

11:00-12:00

Keynote Lecture 3 (Memorial Hall) Chair: H. Takahashi (Tohoku Univ.)

Experimental Study on Sediment Sorting in Open Channel

Assoc. Prof. Luu Xuan LOC (Ho Chi Minh City University of Technology, Vietnam)

12:00-13:30 ---------- (Lunch) ----------

13:30-21:00

Excursion and Banquet

November 6h, 2013

9:00-10:15

Fluid Dynamics 3 (Room A)

7 Preventing Pipe Blockage Caused by Freezing of Water Flowing Down on Inner Wall of a Vertical Pipe
Yoshimi KOMATSU, Yuki KANEYA, Makoto TAGO and Yoshihiro YOSHIDA

103 3D Laser Interferometric CT Measurement of Unsteady Shock-Vortex Flow Discharged from Three Cylindrical Holes
Yoshihiro MIWA, Tomomi ARATANI, Tatsuro INAGE, Masanori OTA and Kazuo MAENO

39 Simultaneous Measurement of Liquid Surface and Wave Velocities for Falling Liquid Films
Nurrina ROSLI and Kenji AMAGAI

71 Study on the Concentration Measurement in the Fine Scale Region in a Liquid Jet by the Optical Fiber LIF Method
Toshiki TAKEICHI, Yasuhiko SAKAI, Osamu TERASHIMA, Kouji NAGATA, Yasumasa ITO and Tomoaki WATANABE

79 Study on Supersonic Nozzle Flow with Micro Bubbles
Kentaro NAKAMURA and Hideaki MONJI

Solid Mechanics 3 (Room B)

82 Residual Stress Measurement on Laser Shock Peening Superalloy by using FIB Ring-core Milling Method
Ronghua Zhu-SENDAI, Huimin Xie, Zhenxing Hu and Jianguo Zhu

107 Development of a Cross-type Grazing SH-wave Sensor for High Precision Stress Measurement of Rolled Steel Plate
Hideshi MIYAZAKI, Yoshihiko HASHIMOTO, Yorinobu MURATA and Motoharu FUJIGAKI

116 An Approach to Wide Range Strain Measurement by Bi-sensitive Speckle Interferometry and Digital Image Correlation
Shuichi ARIKAWA, Yoichi SENSO and Satoru YONEYAMA

115 J-integral Evaluation for an Interface Crack Using Digital Image Correlation
Hiroto YAMANE, Shuichi ARIKAWA, Satoru YONEYAMA, Yasuaki WATANABE, Tatsuhiko ASAI, Kunio SHIOKAWA and Mitsuo YAMASHITA

Bio Engineering 2 (Room C)

66 Measurement of Loading Induced Acoustic Emissions at Stem of Miniature Tomato for Estimation of Embolism Risk
Kensuke KAGEYAMA and Kansuke TAJIMA

96 Biomechanical Study on Internal Fixation Devices for Distal Humerus Fracture
Yuji TANABE, Jonas Aditya PRAMUDITA and Takahiro YAMAMOTO

76 Anisotropic Tensile Properties of Porcine Skin in Dorsal and Ventral Regions
Jonas Aditya PRAMUDITA, Yusuke SHIMIZU, Yuji TANABE, Masato ITO and Ryoji WATANABE

122 Alternations in the Structure and Mechanical Properties of Bone Tissues Obtained from Experimental Animal Models of Lifestyle-Related Diseases
Ei YAMAMOTO, Ippei TAKEDA, Yuji MIYAZAKI and Yasuaki HANDA

87 Study on Attitude Stabilization of a Flapping Wing Robot by Dihedral Angle Effect
Hiromu YOSHIDA and Yoshiyuki HIGASHI

Civil Engineering 2 (Room D)

13 Experimental Consideration on Relationship between Failure Strength Property and Permeability of Fiber-Cement-Stabilized Soil Made of Tsunami Sludge
Tomoaki SATOMI, Hiroki KURIBARA and Hiroshi TAKAHASHI

11 Study on Durability for Drying and Wetting of Cover Soil for Radiation-Contaminated Soil Made of Tsunami Sludge
Hiroshi TAKAHASHI, Hiroki KURIBARA and Tomoaki SATOMI

10 Study on Durability for Erosion of Fiber-Cement-Stabilized Soils Using Tsunami Sludge
Hiroshi TAKAHASHI, Shota KUMAGAI and Tomoaki SATOMI

38 Permeability Test in Single Borehole Using Ultrasonic Wave
Nobutaka HIRAOKA, Takehiro KUROHARA, Shunya NAKANO, Katsuhiko TANAKA, Masamitsu FUJIMOTO, Ryoichi FUKAGAWA and Asako TOGARI

18 Study on Durability for Erosion by Rainfall of Cover Soil for Radiation-Contaminated Soil Made of Tsunami Sludge
Tomoaki SATOMI, Ryoichiro YAMAZAKI and Hiroshi TAKAHASHI

10:15-10:30 ---------- (Break) ----------

10:30-12:00

Materials Science and Combustion (Room A)

68 Grating Projection Method with Small Pitch Using Linear LED Device
Motoharu FUJIGAKI, Tsutomu YOKOYAMA and Yorinobu MURATA

118 Development of Test Methods for Mechanical Property Evaluation of Balloon-Expandable CoCr Alloy Stent
Takuya YOKOO, Ichiro SHIMIZU, Akira WADA, Aya TAKAKI, Shinichi OKADA, Mamoru HATAKEYAMA and Shuzo YAMASHITA

89 The Effect of Sample Aspect Ratio on Limiting Oxygen Index (LOI)
Aki HOSOGAI, Yuji NAKAMURA, Kaoru WAKATSUKI and Yugo KIMOTO

101 Behavior of Copper Dissolution in Ammonia Solutions Containing Ammonium Chloride or Sulfate
Hirokazu KONISHI, Takashi BITOH, Hideki ONO, Tetsuo OISHI, Kazuya KOYAMA and Mikiya TANAKA

21 Characteristics of Thermo-Fluid phenomena of Torrefied Wood Chips and Optimum Molding Condition of Torrefied Wood-Briquette
Toru SAWAI, Noriyasu HIROKAWA, Takeshi KAJIMOTO and Yoshimitsu ICHINO

Materials Science and Instrumentation (Room B)

119 Study and Improving Fatigue Life of Bolt Adapter of Prosthetic SACH Foot
Kadhim Kamil RESAN, Muhsin J. JWEEG and Ali Abdulameer NAJIM

55 Development of Flexible Contact Sensor for Load Measurement Using Hemispherical Elastic Model
Shohei KASUGA, Noboru NAKAYAMA, Sung-Moo SONG and Hiroyuku TAKEISHI

41 A Study on the Relationship between Primary Dendrite Arm Spacing of Low Carbon Steel and Solidification Cooling Rate up to 10^3 K/s
Yoshinao KOBAYASHI, Naotsugu YOSHIDA and Kotobu NAGAI

56 Effect of Sintering Temperature on the Mechanical Properties of Titanium Fiber Thin Plate Formed by the Compression Shearing Method at Room Temperature
Hiroto TAMAI, Noboru NAKAYAMA, Masaomi HORITA, Hiroyuki MIKI and Hiroyuku TAKEISHI

Bio Engineering 3 (Room C)

58 Experimental Study for the Relationship between Cell Differentiation and Mechanical Strain using a Non-uniform Deformation Field
Yasuyuki MORITA, Toshihiro SATO and Yang JU

63 Micro CT Analysis of Ovariectmized Rats Treated
Aiko TAKIZAWA and Mirei CHIBA

42 Biofuel Research by Low Cost Method

Cheng Chen

44 Usability of Flick Input with Fit-key on Smartphone
Noriyasu HIROKAWA, Tadashi SHIBUE, Takashi HAYAMI, Toru SAWAI and Mitsushi OHMASA

100 Pyrolytic Thermomechanical Analysis of Bio-coke from Japanese Cypress
Edmundo SANCHEZ, Jr., Satoru MIZUNO and Tamio IDA

109 Improvement of an Azimuth Sensor Using Polarized Light and Position of the Sun
Yoshiyuki HIGASHI

Civil Engineering 3 (Room D)

5 A study on Relationship between Soil Strength Properties and Resistive Forces Acting on Excavating Construction Machine
Min CHEN, Tomoaki SATOMI and Hiroshi TAKAHASHI

14 Investigation on Effect of Soil Strength Characteristics on Excavating by Narrow Blade
Tomoaki SATOMI, Kosuke ASAI and Hiroshi TAKAHASHI

16 A Consideration on Characteristics of Soil Adhesion to Metal Surface under Various Compression Strength
Tomoaki SATOMI, Haruya NIHEI and Hiroshi TAKAHASHI

15 Study on Characteristics of Soil Adhesion to Cuticles of Insects
Tomoaki SATOMI, Chiaki KUJI and Hiroshi TAKAHASHI

12 Detection of Obstacle in Disaster Relief Work of Slope Failure by Natural Hazard
Hiroshi TAKAHASHI, Takuma NAKAMURA and Tomoaki SATOMI

9 Experimental Investigation and Numerical Simulation using Smoothed Particle Hydrodynamics for Water Absorption into Soil
Kousuke NAKAMURA, Tomoaki SATOMI and Hiroshi TAKAHASHI

12:00-13:00 ---------- (Lunch) ----------

13:00-14:00

Optical Method (Room A)

113 Determination Method of Directions of Two-dimensional Grating Using Sampling Moire Method
Takaaki YOSHIKAWA, Motoharu FUJIGAKI and Yorinobu MURATA

112 Thickness Measurement of Transparent Object with Multiple Line Imaging Using Whole-space Tabulation Method
Riku MINAMOTO, Motoharu Fujigaki and Yorinobu MURATA

108 Measurement Accuracy of Light Marker Position on Camera Image
Takaaki IIZUKA and Yasushi NIITSU

110 Evaluation of Multiple CMOS Head for Digital Holographic Interferometry
Hiroki MINAMINO, Motoharu FUJIGAKI and Yorinobu MURATA

Solid Mechanics 4 (Room B)

34 Photoelastic Stress Analysis of Fiber/Matrix Interface on Single Fiber Composite
Takenobu SAKAI, Yasunori IIHARA and Satoru YONEYAMA

60 Application of the Digital Image Correlation Method to Elastic Modulus Measurement of Metal Thin Films
Yuichi ONO and Satoshi SHIRAHASE

81 Two New Methods for 3D Shape Reconstruction in an SEM
Chuanwei Li, Zhanwei Liu and Huimin Xie

92 Identification of Elasto-plastic Material Properties with Full-field Surface Displacement Measurements
Keita JINNO, Shuichi ARIKAWA, Satoru YONEYAMA, Yasuaki WATANABE, Tatsuhiko ASAI, Kunio SHIOKAWA and Mitsuo YAMASHITA

Visual, Sound and Vibration (Room C)

90 Evaluation Method for Sound-absorption Coefficient inside the Tire
Masaki NAKAMURA, Yohsuke TANAKA and Shigeru MURATA

88 Predictive Maintenance Using Diagnostic System for Work Vessel Equipment
Taku SAITOH, Taichi NAGASAWA, Seiji MATSUDA, Masakazu TOMURA, Katsuki SHIBATA and Yoshio TAKEUCHI

127 An Adaptive Active Shape Model for Eye Shape Detection
Mohammad ALDIBAJA and Sinichi SUZUKI

128 Eye Shape Detection Based on Properties of Eigeneye Image in Log-Polar Domain
Mohammad ALDIBAJA and Sinichi SUZUKI

Solid and Non-Destructive Testing (Room D)

20 An Attempt of Measurement of Load Acting on Hub-bearing Using Ultrasonic Technique
Mohammad ALDIBAJA and Sinichi SUZUKI

29 Micro-hole Inspection System Using Low-frequency Sound
Yoshinori NAGASU, Kazunori ITOH, Makoto OTANI, Noboru NAKAYAMA and Kakumasa EGUCHI

126 Efficient Measurement of Three-Dimensional Displacement Using DIC with LUE Method
Akira KATO

117 Development of Portable 3-D Shape Measurement Device using Light Source Stepping Method
Toshimasa SAKAGUCHI, Motoharu FUJIGAKI and Yorinobu MURATA

14:00-14:15

Closing Address (Room A)

Chair: Y. Tanabe (Niigata Univ.)

Poster Session

General Presentation