**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  Opening Ceremony (Memorial Hall)  Chair: Y. Tanabe (Niigata Univ.)
- 9:40  Keynote Lecture 1 (Memorial Hall)  Chair: M. Fujigaki (Wakayama Univ.)
Elastic Wave Propagation in Transversely Impacted Beams
Prof. Dulal GOLDAR (Sharda University, India)

**10:40-10:45**
- V. Zinovyev (Room A)
- J. J. Miau (Room B)
- H. Ali Jawad Abed (Room C)

**10:45-11:00**
- Adhesive Force due to a Thin Liquid Film between Two Smooth Surfaces (Wringing Mechanism of Gage Blocks)
  - Kenji KATOH and Tatsuro WAKIMOTO
- Removal of Fine Particles on a Wall by High Speed Impinging Air Jet (Estimation of Removal Force)
  - Sanghyeon SONG, Kazuhiro SOEMOTO, Tatsuo WAKIMOTO and Kenji KATOH

**11:00-11:15**
- MEMS Thermal Film Sensors for Flow Research
- Measurements of Wall Shear Stress Fluctuation with the Micro-Fabricated Hot-Film Sensor in a Boundary Layer of Wall Jet
  - Tatsuya SAWADA, Osamu TERASHIMA, Yasuhiko SAKAI, Kouji NAGATA, Mitsuhiro SHIKIDA, Hirotaka HIDA and Yasunasa ITO

**11:15-11:30**
- Study on Separation Characteristics of Fallen Leaves from Water Flow at Intake of Micro Hydroelectric Generator
  - Hefeng LIANG, Masatoshi YOSHIDA and Kenji AMAGAI
- Trial Production of Ultra-Lightweight and Small EV: pico-EV using Bamboo-Fiber Laminated Plates
  - Kazuomi UDA and Yoshihiko TAKAHASHI

**11:30-11:45**
- Mechanical Properties of South America Curaua Fiber at Testing Temperature of up to 473K
  - Taichi SAKAMOTO, Akihiro TAKAHASHI and Mayu MIYAGAWA
- Mechanical Properties and Fracture Behavior of Ramie Fiber at Testing Temperature of up to 473K
  - Mayu MIYAGAWA, Akihiro TAKAHASHI and Taichi SAKAMOTO

**11:45-12:00**
- Research for Examination on Optimum Shape of Stamping Punch for Metal Sheet
  - Hirofumi YOTSUMOTO and Akihiro TAKAHASHI
- Research on New Estimation Method of Shear Strength Parameters of Subsurface Layers
  - Ko KAWAI and Yuji KOTERI

**12:00-12:15**
- Study on Separation Characteristics of Fallen Leaves from Water Flow at Intake of Micro Hydroelectric Generator
  - Hefeng LIANG, Masatoshi YOSHIDA and Kenji AMAGAI
- 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

**12:15-12:30**
- Analysis on Movement of Wheel-Type Vehicle with Crawlers in between Front and Rear Wheels on Soft Ground
  - Ryosuke ETO, Tomoaki SATOMI and Hiroshi TAKAHASHI
- Trial Production of Ultra-Lightweight and Small EV: pico-EV using Bamboo-Fiber Laminated Plates
  - Kazuomi UDA
- 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

**12:30-12:45**
- Mechanical Properties of South America Curaua Fiber at Testing Temperature of up to 473K
  - Taichi SAKAMOTO, Akihiro TAKAHASHI and Mayu MIYAGAWA
- Method on Slope
  - Toru DANJO, Kazunari SAKO, Masamitsu FUJIMOTO, Naoto IWASA and Ryoichi FUKAGAWA
- A Piezoelectric Film Type Scour Monitoring System for Bridge Pier

**12:45-13:00**
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  - Ryosuke ETO, Tomoaki SATOMI and Hiroshi TAKAHASHI
- Study on New Estimation Method of Shear Strength Parameters of Subsurface Layers
  - Tomoaki SATOMI, Yuki SATO and Hiroshi TAKAHASHI
- Analysis on Movement of Wheel-Type Vehicle with Crawlers in between Front and Rear Wheels on Soft Ground
  - Ryosuke ETO, Tomoaki SATOMI and Hiroshi TAKAHASHI

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- Study on New Estimation Method of Shear Strength Parameters of Subsurface Layers
  - Tomoaki SATOMI, Yuki SATO and Hiroshi TAKAHASHI
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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
Ziijie LIN and Shoichi TORII
74 Drag Force Acting on Each Sphere in a Lattice Arrangement of Sphere
Shohei ICHIKAWA and Hideaki MONJI
78 Drag Force Acting on a Sphere behind an Obstacle
Shunpei NOZAKI, Shohei ICHIKAWA 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 Hysteresis Behavior of the Indentation Tests and FEM Analysis
Junji SAKAMOTO and Masasaki NAKAMURA
31 Prediction Method of Fracture Strain for Non-Standardized Specimen Based on Local Absorbed Strain Energy Distribution
Masato TSUTSUI, Talcuto HARA, Tadao PUKUTA, 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 Kousuku MIYACHIKA
62 Investigation of Deformation Mechanism under Indentation Testing of Metastable Beta-type Ti-Mo Alloys
Ichiro SHIMIZU, Noriaki KIMURA, Naoya TADA and Yoshiito 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 OKUZUMI, Hiroyuki TOBIKAI and Akihiro 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 HIGIMI 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 Red 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 Solute in Molten Iron by Using Immiscibility of Iron and Ca-Alloy
Hideki ONO, Minoru MURAKAMI, Jingo ABOISHI and Eiichi TAKEUCHI
35 Fabrication of Metal Particle with Poreous 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 Tomochiki YAMAMOTO
73 Zn Addition into Molten Steel by ZnO Reduction
Takahiro MIKI, Kanna IWADATE and Tetsuya NAGASAKA
75 Comparison of Metal Emulsions in Molten Slag under the Gas Bubbling Condition

YUJI NAKAMURA, Sou OKUZUMI, Hiroyuki TOBIKAI and Akihiro ITO
Nobuhiro MARUOKA, Duk-Yong SONG, Hiroyuki SHIBATA and Shin-ya KITAMURA

Viscosity Evaluation of Slag Foam

Noritaka SAITO, Kenta YAMASHITA, Sohei SUKENAGA and Kunihiko NAKASHIMA

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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

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November 6th, 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, Yasuhiro SAKAI, Osamu TERASHIMA, Kouji NAGATA, Yasunasa ITO and Tomoaki WATANABE

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

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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
Bio Engineering 2 (Room C)

66 Measurement of Loading Induced Acoustic Emissions at Stem of Miniature Tomato for Estimation of Embolism Risk
Hirono YOSHIDA, Yoichi SENSO and Satoru YONEYAMA

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, Masatoshi ITO and Ryoji WATANABE

Bio Engineering 2 (Room D)

13 Experimental Consideration on Relationship between Failure Strength Property and Permeability of Fiber-Cement-Stabilized Soil Made of Tsunami Sludge
Tomoki 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 Tomoki SATOMI

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

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

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

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 Integral Evaluation for an Interface Crack Using Digital Image Correlation
Hiroyuki HASHIMOTO, Ichiro SHIMIZU, Akira WADA, Aya TAKAKI, Shinichi OKADA, Mamoru HATAKEYAMA and Shuzo YAMASHITA

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

98 Development of Test Methods for Mechanical Property Evaluation of Ballloon-Expandable CoCr Alloy Stent
Takuya YOKO, 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
Torus SAWAI, Noriyasu HIROKAWA, Takeshi RAJIMOTO and Yoshimitsu ICHINO

Materials Science and Instrumentation (Room B)

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

55 Development of Flexible Contact Sensor for Load Measurement Using Hemispherical Elastic Model
Shohei KASUGA, Norohru NAKAYAMA, Sung-Moo SONG and Hiroyuki TAKESHI

41 A Study on the Relationship between Primary Dendrite Arm Spacing of Low Carbon Steel and Solidification Cooling Rate up to 10³ 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
Hirotu TAMAI, Norohru NAKAYAMA, Masuomi HORITA, Hiroyuki MIKI and Hiroyuki TAKESHI

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, Yoshihiko SATO and Yang JU

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

42 Biofuel Research by Low Cost Method
Civil Engineering 3 (Room D)

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

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

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

15 Study on Characteristics of Soil Adhesion to Cuticles of Insects
  Tomaoki 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 Tomaoki SATOMI

9 Experimental Investigation and Numerical Simulation using Smoothed Particle Hydrodynamics for Water Absorption into Soil
  Kosuke NAKAMURA, Tomaoki 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
Poster Session

General Presentation

6 Identification of Damping Ratio in a Single-Degree-of-Freedom Vibration Model
Takahashi YOKOYAMA and Yuma KOMATSUBARA

26 Fluid Flow and Heat Transfer of Natural Convection around Heated Horizontal Square Cylinder in Water
Fumiyoshi KIMURA, Masashi KUROTANI and Kenzo KITAMURA

37 Biomechanical Effects of Push Handle Heights on Upper Limbs during Attendant Propelled Wheelchair Slope Transportation
Miyako MIZUTANI, Kensaku KAWAKAMI, Mieko SADAKATA, Koichi KOBUYASHI and Makoto SAKAMOTO

45 Comparison of Gasification Characteristics by Bed Material in a Fluidized Bed Gasifier
Takahiro MURAKAMI, Minoru ASAI and Yoshizo SUZUKI

51 Drop Impact Behavior of Containers for Liquid Food with Recycled Paper Case
Naohiro TSUCHiya, Eisaku UMEZAKI, Yuma SHINODA and Katsunori FUTASE

52 Accuracy Improvement in Determination of Principal-Stress Direction from Color Photoelastic Fringes Obtained with Semicircular Polariscope
Kosuke SAITO, Wataru MURATA and Eisaku UMEZAKI

53 Digital Image Correlation Analysis of Distal Movement of Mandibular Teeth Using Anchor Screws
Yusuke KANAI, Eisaku UMEZAKI, Sigeyuki MATSUI, Daigo KOMAZAWA and Naoto SUDA

54 System for Simultaneous Measurement of Flow and Stress in UV-Curable Resin during Curing Process
Akira OKANO and Eisaku UMEZAKI

86 New Volcanic Ash Agent for Prevention of Unwanted Spatter Adhesion in Metal Arc Welding Process
Akihiro TAKAHASHI

99 Acoustic property and Yield Improvement of Ultrasonically Generated Cyanocrylate Hollow Microcapsules
Taichi SUTOH, Tadanori FUKAMI and Toshinori MAKUTA

120 Quasi-static and Impact Compressive Properties of Foamed Polyethylene Film with Closed Cell
Hiroyuki YAMADA, Kohei TATEYAMA, Ryo OKUI, Nagahisa OGASAWA and Kinya OGAWA