

ISEM'13-Sendai, Technical Program

November 3rd, 2013

15:00-17:00 Registration (Exhibition Hall)

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) =====

Chairperson:

1 MEMS Thermal Film Sensors for Flow Research

J. J. Miao, 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 A Study on Removal of Infinitesimal Particles on Wall by High Speed Air Jet

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)** =====

Chairperson: K.Nakai(Okayama Univ. of Science)

- 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)** =====

Chairperson: E.Yamamoto(Kinki Univ.)

- 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)** =====

Chairperson: Luu Xuan Loc(Ho Chi Minh City Univ. of Technology)

- 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) =====

Chairpersons: J.J.Miau(National Cheng Kung University)

- 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
Shuhe ICHIKAWA and Hideaki MONJI
- 78 Drag Force Acting on a Sphere behind an Obstacle
Shumpei NOZAKI, Shuhe 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)** =====

Chairpersons: T.Yokoyama(Okayama Univ. of Science), M.Sakamoto(Niigata Univ.)

- 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)** =====

Chairperson: S.Sudo(Akita Prefectural Univ.)

- 27 Scale Modeling of Buoyancy-induced Instability of Pool Fires
Yuji NAKAMURA, So OKUIZUMI, Kaoru WAKATSUKI, 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)** =====

Chairperson: H.Ono(Osaka Univ.), T.Miki(Tohoku Univ.)

- 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 Kunihiro 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) =====

Chairperson:

- 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)** =====

Chairperson: Y.Ono(Tottori Univ.)

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

Chairperson: M.Chiba(Tohoku Univ.)

- 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)** =====

Chairperson: H.Takahashi(Tohoku Univ.)

- 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)** =====

Chairpersons: Y.Nakamura(Hokkaido Univ.), T.Sakai(Tokyo Metropolitan Univ.)

- 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
- 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)** =====

Chairperson: Y.Tanabe(Niigata Univ.)

- 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
- 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
- 56 Effect of Sintering Temperature on the Mechanical Properties of Titanium Fiber Thin Plate Formed by the Compression Shearing Method at Room Temperature
Hiroyuki MIKI and Hiroyuku TAKEISHI

===== **Bio Engineering 3 (Room C)** =====

Chairperson: K.Kobayashi(Niigata Univ.)

- 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 Bone in Ovariectomized Rats Treated with a Novel Bisphosphonate, [4-(methylthio) phenylthio] methanebisphosphonate
Aiko TAKIZAWA, Mirei CHIBA, Takeru OTA, Mayumi YASUDA, Haruhide HAYASHI, Kaoru IGARASHI and Hisashi SHINODA*
- 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)** =====

Chairperson: T.Satomi(Tohoku Univ.)

- 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)** =====

Chairperson: E.Umezaki(Nippon Institute of Technology)

- 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)** =====

Chairperson: Y.Morita(Nagoya Univ.)

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

Chairperson: S.Okamoto(Shimane Univ.)

- 90 Evaluation Method for Sound-absorption Coefficient inside the Tire -----000
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) =====

Chairperson: K.Kageyama(Saitama Univ.)

- 20 An Attempt of Measurement of Load Acting on Hub-bearing Using Ultrasonic Technique
Akitoshi TAKEUCHI
- 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 C)

Chair: Y. Tanabe (Niigata Univ.)

Poster Session

General Presentation

- 6 Identification of Damping Ratio in a Single-Degree-of-Freedom Vibration Model
Takashi 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 KOBAYASHI 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 Polariscopes
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
- 98 Development and Optimization of a Microbubble Generator with a Hollow Cylindrical Ultrasonic Horn
Tatsuya NUMAKURA and Toshinori MAKUTA
- 99 Acoustic property and Yield Improvement of Ultrasonically Generated Cyanoacrylate Hollow Microcapsules
Taichi SUTOH, Tadanori FUKAMI and Toshinori MAKUTA
- 105 Real-Time Pseudo-3D Displacement Measurement of Four Points LED Markers with One

Camera Image

Yasushi NIITSU, Takaaki IIZUKA and Kenta YASUOKA

106 Measurement of Reduced Elastic Modulus of Organic Semiconductor Materials for Flexible Organic Light Emitting Diode

Toshiro KOBAYASHI, Hatsuki IKEDA, Yuichi UTSUMI, Hideyuki KANEMATSU, Tsuyoshi MASUDA and Motomichi YAMAMOTO

111 Proposal of a New Hydroponically Culture System for Root Vegetables

Kiyomi MORI

114 Deflection of Longitudinal Ultrasonic Waves by Stress Gradient

Masahiro SUETSUGU, Noriki INUI and Kouichi SEKINO

120 Quasi-static and Impact Compressive Properties of Foamed Polyethylene Film with Closed Cell

Hiroyuki YAMADA, Kohei TATEYAMA, Ryo OKUI, Nagahisa OGASAWARA and Kinya OGAWA

Special Presentation by Students of College of Technology

S01 Development of a rotation inverted pendulum for student experiment

Hiromu UENO and Natsuki TAKAGI

S02 Development of a transport robot using two wheel inverted pendulum

Hideki ASARI, Taichi MAEDA and Natsuki TAKAGI

S03 Mechanical Properties of Natural Jute Fiber at Elevated Temperatures

Kenji BABA, Akihiro TAKAHASHI, Naoyuki YAMAMOTO, Toshinobu TOYOHIRO and Hiroyuki SHIRAIWA

S04 Impact Deformation Behavior of Magnesium Alloy at Cryogenic Temperature

Yoshitaka BABA, Akihiro TAKAHASHI, Naoyuki YAMAMOTO, Toshinobu TOYOHIRO and Hiroyuki SHIRAIWA

S05 Loading Rate Dependency on Impact Energy Absorption of Lead-Free Solder

Motoki TANAKA, Akihiro TAKAHASHI, Naoyuki YAMAMOTO, Toshinobu TOYOHIRO and Hiroyuki SHIRAIWA

S06 Development of New Resistance Welding Process for Metallic Material

Shoyo MAEDA, Hirofumi YOTSUMOTO, Akihiro TAKAHASHI, Naoyuki YAMAMOTO, Toshinobu TOYOHIRO and Hiroyuki SHIRAIWA

S07 Study on Heat Transfer Characteristics of Falling Film Type Heat Exchanger (Effect of Tube Flow Condition on Heat Exchanger Performance)

Yutaku KITA and Hiroyuki SHIRAIWA

- S08 Cooling System in Data Center to Achieve Low Running Cost
Akinobu OKAMOTO, Keita ARISHIMA and Hiroyuki SHIRAIWA
- S09 Microstructure and magnetic properties in aged Mn-Ga-Cu alloys
Masahiro SASAKI, Kazuhiro MINAKUCHI, Ryosuke KAINUMA and Wataru ITO
- S10 Develop on Sequential Control Kit for Exchange Students
Toshiki TAKAYAMA, Youta IISHIBA, Kuniaki YAJIMA and Junichi SUGAYA
- S11 Preparation of Vanadium-doped ITO Films by Spray CVD : Effect on the Work Function and Resistivity by Annealing
Naoki YOSHIDA, Ryou ONODERA, Shigeyuki SEKI, Keunyoung PAK, Yoshiyuki SEKI, Takayuki UCHIDA, Yutaka SAWADA, Kunio YUBUTA and Toetsu SHISHIDO
- S12 Automatic Impedance Matching Circuit for WPT System
Shinji ABE and Qiao-Wei YUAN
- S13 Approach to CAD/CAM in 5-Axis Machine Tools for Purpose of Application to College of Technology Education
Takazumi ONO, Keisuke ONO, Takeshi MIYAMOTO and Yoshitaka AZUMA
- S14 Manufacture of Solar Car and Research into Utilization of Renewable Energy by Hybrid System
Shota TSUJI, Masayuki WATANABE and Kenya HIROSAWA
- S15 Akashi National College of Technology