

The 16th International Symposium on
Advanced Science and Technology in Experimental Mechanics
[16th ISEM'21-Ha Noi, Vietnam]

TECHNICAL PROGRAM

Time zone of the program is in Vietnam time (Japan's time will be 2 hours later than Vietnam time)

November 3rd, 2021 (<https://bit.ly/3E6Pb6M>)

14:00 - 16:00 Registration (2nd Floor Lobby) and technical checking (in Hanoi)

15:00 - 16:00 Reception (meet the participating members)

November 4th, 2021 (<https://bit.ly/3E6Pb6M>)

08:30 - 08:45 Opening Ceremony: Chairperson: Prof. Hiroshi TAKAHASHI (Tohoku Univ.)

Opening Address Mr. Toshio ISHI, President of Japan Society for Experimental Mechanics (Japan)

Opening Address Prof. Duong Ngoc Hai, Vietnam Academy of Science and Technology (Vietnam)

08:45 - 09:45 Solid Mechanics (<https://bit.ly/3E6Pb6M>)

Chairperson: Hiroshi TAKAHASHI (Tohoku Univ.)

08:45 - 09:00 (A11) Effect of Tensile strain rate on Mechanical Response of Polyamide with Different Molecular Chain Structures.

M.Sc. Toyoshi YOSHIDA, Tomoya NAKANE, Makoto UCHIDA and Yoshihisa KANEKO

Graduate School of Engineering, Osaka City University, Japan

09:00 - 09:15 (A12) Effects of Grain and Specimen Sizes on Micro- and Macroscopic Non-uniform Deformation of Polycrystalline Copper.

M.Sc. Kensho TSUTSUMI, Makoto UCHIDA, Masashi SAKAMOTO and Yoshihisa KANEKO

Graduate school of Engineering, Osaka City University, Japan

09:15 - 09:30 (A25) Effects of Friction Coefficient on the Plastic Behavior of Granule.

Dr. Thanh-Trung VO, Dinh Minh TRAN

Danang Architecture University, Vietnam

09:30 - 09:45 (A45) Effect of Local Buckling in Autofrettage Process on the Fatigue Behavior of the Liner in Al/CFRP Composite Pressure Vessels.

Mr. Xuan Cuong NGUYEN, Yoshio ARAI, Wakako ARAKI and Noriyasu YAMADA

Graduate School of Science and Engineering, Saitama University, Japan

09:45 - 10:00 ----- Coffee Break -----

10:00 - 11:30 Fluid Dynamics 1 (<https://bit.ly/3E6Pb6M>)

Chairperson: Hideaki MONJI (University of Tsukuba)

10:00 - 10:15 (A28) Effect of Fine Content to Internal Erosion Susceptibility and Statistical Analysis for Gap-graded Soils.

Dr. Dinh Minh TRAN, Thanh-Trung VO, Van Thao LE, Hoang Tri VU
The University of Danang - University of Science and Technology, Viet Nam

10:15 - 10:30 (A33) The Mechanism of the Separation Control by a Wing with Leading Edge Protuberance and Tandemly Arranged Wings with Linear Leading Edge.

B.Sc. Ayami UEKI, Takahiro YASUDA, Hisato MINAGAWA
The University of Shiga Prefecture, Japan

10:30 - 10:45 (A34) Study of Fluid Drag Acting on Tandem Car Models.

Mr. Syouta SONOKI, Hideaki MONJI, Sungchan HONG and Takeshi ASAI
University of Tsukuba, Japan

10:45 - 11:00 (A43) Experimental investigation of laminar separation bubbles on a series of teardrop cylinders with increasing thickness.

Ms. Diane SCOBORIA, Louis WU, Sam LI and Jiun-Jih MIAU
National Cheng Kung University, Taiwan

11:00 - 11:15 (A44) Visualization of Flow around Turrets of Cup Labeling Machine

B.Sc. Naoki MATSUMOTO, Takahiro YASUDA, Hisato MINAGAWA, Ogawa TAKASHI, Yoshinobu TAKAYAMA, Takanori MIURA
The University of Shiga Prefecture, Japan

11:15 - 11:30 (A46) Periodic droplets splashing from water jet accompanied with air suction.

Tsutomu ISHIDO, Mr. Yuta ISHII, and Hiroaki HASEGAWA
Graduate School of Engineering, Utsunomiya University, Japan

11:30 - 13:00 ----- **Lunch (90')** -----

13:00 - 14:00 Civil Engineering 1 (<https://bit.ly/3E6Pb6M>)

Chairperson: Dr. Thanh-Trung VO, Danang Architecture University

13:00 - 13:15 (A03) Study on Estimation of Optimum Mixing Conditions for Fiber-Cement-Stabilized Soil by Multilayer Neural Network.

Ms. Moeka KUSE, Tomoaki SATOMI and Hiroshi TAKAHASHI
Graduate School of Environmental Studies, Tohoku University, Japan

13:15 - 13:30 (A04) Performance Evaluation of Soil Sampling Mechanism with Screw Auger.

Mr. Masahide ISHIDA, Tomoaki SATOMI and Hiroshi TAKAHASHI
Graduate School of Environmental Studies, Tohoku University, Japan

13:30 - 13:45 (A05) Experimental Investigation on Effect of Bucket Angle on Excavating Resistive Forces for Crushed Rocks under Bucket Excavation.

Ms. Kanna KAJI, Tomoaki SATOMI and Hiroshi TAKAHASHI
Graduate School of Environmental Studies, Tohoku University, Japan

13:45 - 14:00 (A06) Study on Recycling of Reservoir Bottom Sludge as Banking Materials.

Ms. Rina KASAI, Tomoaki SATOMI and Hiroshi TAKAHASHI
Graduate School of Environmental Studies, Tohoku University, Japan

14:00 - 15:00 Civil Engineering 2 (<https://bit.ly/3E6Pb6M>)

Chairperson: Dr. Xiaodong LIU, Tohoku University

14:00 - 14:15 (A07) Effect of the Additive Amount of Perlite By-products on the Strength Characteristic of Fiber-Cement-Stabilized Soil.

Ms. Hina OMURO, Tomoaki SATOMI and Hiroshi TAKAHASHI
Graduate School of Environmental Studies, Tohoku University, Japan

14:15 - 14:30 (A13) The Experimental Study on Influences in Load Carrying Capacity and Deformation Performance of RC Beam Due to Artificial Deterioration.

Mr. Yilong CAO, Akihiko NISHIMURA, Xiu LUO, Masao OKOSHI, Wendong TANG, Hidekazu NISHIMURA
Keio University, Japan

14:30 - 14:45 (A26) Failure dynamics of a plate intruder in granular materials.

Dr. Thanh-Trung VO
Danang Architecture University, Vietnam

14:45 - 15:00 (A69) Effect of the Slope on the Failure Characteristics of Retaining Wall..

M.Sc. Huyen T.T. TRAN, Cuong T. NGUYEN, Huong T.T DUONG and Truong V. VU
Institute of Mechanics, Vietnam Academy of Science and Technology, Vietnam

15:00 - 15:15 ----- Coffee Break -----

15:15 - 16:00 Sound and Vibration (<https://bit.ly/3E6Pb6M>)

Chairperson: Prof. Yasushi IDO (Nagoya Institute of Technology)

15:15 - 15:30 (A37) Rotary Elastomer Particle Damper: Does Particle Type and Shape Matters?

M.Sc. Allah RAKHIO, Yasushi IDO, Yuhiro IWAMOTO and Atsushi TOYOUCHI
Nagoya Institute of Technology, Japan

15:30 - 15:45 (A38) Research on Aerodynamic Noise Reduction Technologies Focusing on Sound Transmission Loss of Object Surface.

B.Sc. Koki SHIGE, Miyu OKUNO, Reon NISHIKAWA and Osamu TERASIMA
Toyama Prefectural University, Japan

15:45 - 16:00 (A66) Absorption of the longitudinal and vertical vibration by the dynamic absorber using elliptical magneto rheological elastomer.

Eng. Takumi NAITO and Osamu TERASHIMA
Toyama Prefectural University, Japan

16:00 - 16:30 Instrumentation and Testing (<https://bit.ly/3E6Pb6M>)

Chairperson: Prof. Osamu TERASHIMA (Toyama Prefectural Uni.)

16:00 - 16:15 (A24) Time-series Out-of-plane Displacement Measurement of Vibration Object Using Laser Parallel Fringes Generated in Camera with Diffraction Grating.

Mr. Wei JIANG, Takuya HARA, and Motoharu FUJIGAKI.
Graduate School of Engineering, University of Fukui, Japan

16:15 - 16:30 (A41) Prototype of a reflective photoelastic experimental apparatus for evaluating residual stress in DLC films.

M.Sc. Keita TANUMA and Kenji GOMI
Tokyo Denki University, Japan

16:30 - 17:30 Poster Session (<https://bit.ly/3b2Eu8T>)

1. (A14): Study of Development of Underfloor Material that Reduces Risk of Femur Fractures Due to Falls – Investigation of Relationship Between Load on Femur and Hardness and Thickness of Underfloor Materials.

Mr. Takuya YAMASHITA, Yasumi ITO, Ryuichi YAMADA, Sonoka OKURA, Yoshiyuki KAGIYAMA, Tetsuya NEMOTO
University of Yamanashi, Japan

2. (A15): Study for the Effects of Material and Tip Shape on Straight-Line Stability of Needle Tips -Development of Minimally Invasive Needles for Gold Marker Implantation in Radiotherapy.

Mr. Kohei OBATA, Yasumi ITO, Ryuichi YAMADA, Yoshiyuki KAGIYAMA, Masahide SAITO, Hiroshi ONISHI
University of Yamanashi, Japan

3. (A20) Effect of Convolution Shape on Strength for Flexible Metal Bellows Subjected to Internal Pressure.

Mr. Katsuya FUJIMOTO, Hiroyuki FUJIKI, Masashi DAIMARUYA and Hiroyuki YAMADA
TOFLE Co., Inc., Japan

4. (A23) Impact Indentation Test of Pure Ice by Direct Impact Hopkinson Bar Method Using Conical Indenters.

Ms. Yuki NAKAO, Hiroyuki YAMADA and Nagahisa OGASAWARA
Graduate School of Science and Engineering, National Defense Academy, Japan

5. (A27): Visualization of Shear Stress Distribution Based on Flow Birefringence of Rheoscopic Fluid

M.Sc. Shuntaro TANAKA, Koichi MURASE, Katsuaki SHIRAI
Shibaura Institute of Technology, Japan

6. (A30): Effect of submergence depth of water tank on the motion of a sphere launched vertically upward in water.

Dr. Kotaro TAKAMURE, Tomomi UCHIYAMA
Nagoya University, Japan

7. (A31): Thermal Effect on Sound Emission Due to Water Entry of a Hydrophobic Sphere.

Yoshiaki UEDA, B.Sc. Hiroaki OHASHI, Tomoya NAKAJIMA and Manabu IGUCHI
Graduate School of Setsunan University, Japan

8. (A32): Wake of a sphere having a uniaxial through-hole in a uniform flow.

Mr. Hayato KATO, Kotaro TAKAMURE and Tomomi UCHIYAMA
Graduate School of Informatics, Nagoya University, Japan

9. (A40) Establishment of in Vivo Method for Quantitative Evaluation of Whole-body Skin Viscoelasticity.

Dr. Ryuichi YAMADA, Yasumi ITO, Yuto SATO, Kohei OBATA, Kazuki KAMIUNTEN, Yoshiyuki KAGIYAMA and Tetsuya NEMOTO
University of Yamanashi, National Center for Geriatrics and Gerontology, Japan

10. (A55) Measurement of Stress Waves Passing Through Glass Beads Using SHB the Test Equipment.

Mr. Yosuke ARAI, Kohei TATEYAMA, and Keiko WATANABE

Major in Advanced Mechanical Engineering and Robotics, Ritsumeikan University, Japan

11. (A56) 3-D Identification Method of Moving Object Using Sub Coil.

Mr. Naoki KOHAMA, Kohei TATEYAMA, and Keiko WATANABE

Major in Advanced Mechanical Engineering and Robotics, Ritsumeikan University, Japan

12. (A60) Investigation of Pressure Wave Propagation Behavior in Magnetorheological Fluids Using an Experimental Equipment that Incidents Plane Waves.

Mr. Daiki TANAKA, Yuma MATSUOKA, Kohei TATEYAMA, and Keiko WATANABE

Major in Advanced Mechanical Engineering and Robotics, Ritsumeikan University, Japan

13. (A70) Failure Characteristics of the Granular Column Considering the Properties of the Material.

M.Sc. Phuong T.T PHAN and Cuong T. NGUYEN

National University of Civil Engineering, Vietnam

14. (A76): Research on solutions to improve the combustion efficiency of biofuel in Diesel engine by Simulation and Experiment.

Mai Duc Nghia, Dr. Nguyen Manh Cuong

Ho Chi Minh City University of Technology and Education, Vietnam

15. (A77): Experimental investigation on Visualized Combustion Phenomena to evaluate the maximum blend when using Biodiesel fuel derived from rubber seed oil for Diesel engine.

Dr. Manh-Cuong NGUYEN

Ho Chi Minh City University of Technology and Education, Vietnam

November 5th, 2021

08:30 - 09:45 Fluid Dynamics 2 (<https://bit.ly/3E6Pb6M>)

Chairperson: Prof. DUONG Ngoc Hai (Vietnam Academy of Science and Technology)

- 08:30 - 08:45 (A48) Comparison of Flows Around UCAV Models of Blunt Apex.

B.Sc. Yu Hsin CHEN, L. Y. Chen, I. Madan, J. J. Miao and S. Mat

National Cheng Kung University, Taiwan

- 08:45 - 09:00 (A49) Experimental and Numerical Observation on Sputtering Behavior Induced by Cavitation Bubble Collapsing Nearby Gas-liquid Interface.

B.Sc. Hiroyuki KAWASHIMA, Takuma KUROSAWA, Takashi NAOE,

Makoto TESHIGAWARA, Nobuatsu TANAKA and Masatoshi FUTAKAWA

Ibaraki University, Japan

- 09:00 - 09:15 (A51) Using the Diagonal-swap Technique to P2P1 Grid for Simulating of FSI Problem with Large Deformation of Solid.

Dr. Sang Truong HA, NGUYEN Van Que, VU Van Chien, VU Manh Hieu,

TA Xuan Tung

Le Quy Don Technical University, Vietnam

- 09:15 - 09:30 (A67) Boundary Layer Control Using Synthetic Jets in a Two-dimensional Diffuser.

Naoto KATO, Mr. Takuma NAGASAKI and Hiroaki HASEGAWA

Utsunomiya University, Japan

09:30 - 09:45 (A68) Vortex Structure in the Wake of a Three-Dimensional Airfoil during Impulsive Incidence Variation.

Naoto KATO, Mr. Kazuki UEDA and Hiroaki HASEGAWA
Utsunomiya University, Japan

09:45 - 10:00 ----- Coffee Break -----

10:00 - 11:30 Material Engineering 1 (<https://bit.ly/3E6Pb6M>)

Chairperson: Prof. Ichiro SHIMIZU (Okayama University of Science)

10:00 - 10:15 (A09) Change in Uniaxial and Biaxial Compressive Behavior with Alloy Composition of Metastable β -Type Titanium 10-18 mass% Molybdenum Alloys.

Prof. Ichiro SHIMIZU and Yoshito TAKEMOT
Okayama University of Science, Japan

10:15 - 10:30 (A10) Evaluation of cyclic deformation behavior of hydrogel with different swelling ratios.

M.Sc. Syunpei MORITA, Makoto UCHIDA, Yoshihisa KANEKO, Dai OKUMURA, Hiro TANAKA and Shohei IDA
Osaka City University, Japan

10:30 - 10:45 (A16) Mechanical Properties in Maraging Steel at Over-Aged Treatment.

Mr. Ryohei ICHIMIYA, Akihiro TAKAHASHI, Naoyuki YAMAMOTO, Toshinobu TOYOHIRO, Hiromi MIURA and Masakazu KOBAYASHI
National Institute of Technology (KOSEN), Miyakonojo College, Japan

10:45 - 11:00 (A17) Microstructure and Tensile Fracture Behavior in Growth Direction of Japanese Cedar.

Mr. Ryota KAWANO, Akihiro TAKAHASHI, Shuma YUKI, Hyoma YAMAMOTO, Naoyuki YAMAMOTO, Toshinobu TOYOHIRO, and Lisa NAKAJIMA
National Institute of Technology (KOSEN), Miyakonojo College, Japan

11:00 - 11:15 (A18) Microstructure and Mechanical Properties of Multi-Directional Forged Magnesium Alloy.

Mr. Kaito NONAKA, Leon NAKANISHI, Akihiro TAKAHASHI, Naoyuki YAMAMOTO, Toshinobu TOYOHIRO, Masakazu KOBAYASHI and Hiromi MIURA
National Institute of Technology (KOSEN), Miyakonojo College, Japan

11:15 - 11:30 (A19) Ductile Fracture Behavior and Stress Triaxiality in AZ31 Magnesium Alloy.

Mr. Keita HIROIKE, Ryota KAWANO, Akihiro TAKAHASHI, Naoyuki YAMAMOTO, Toshinobu TOYOHIRO, Masakazu KOBAYASHI and Hiromi MIURA
National Institute of Technology (KOSEN), Miyakonojo College, Japan

11:30 - 13:00 ----- Lunch (90') -----

13:00 - 13:45 Visualization and Image Processing (<https://bit.ly/3E6Pb6M>)

Chairperson: Prof. Hisanobu KAWASHIMA (Gunma University)

13:00 - 13:15 (A22) Study on Decontamination Effect of Shot Blasting and Barrel Polishing System.

Mr. Seigo KAI, Ryo IKEDA, Hideharu TAKAHASHI, Hayato TANIGUCHI,
Akihiko KAWASHIMA, Hiroshi TAKAHASHI, Keisuke JINZA, Hiroshige KIKURA
Tokyo Institute of Technology, Japan

13:15 - 13:30 (A36) Measurement of Air Flow Formed by Air Duster Nozzle.

Mr. Tomoya KOSEKI, Ryuki MINAMI, Hisanobu KAWASHIMA and
Tsuneaki ISHIMA
Graduate School of Science and Technology, Gunma University, Japan

13:30 - 13:45 (A47) Peeling Off of Coating Film at Constriction Model Surface by Cavitation.

B.Sc. Daisuke KOBAYASHI, Hisanobu KAWASHIMA, Toshio
WATANABE, Takuya SATO and Tsuneaki ISHIMA
Graduate School of Science and Technology, Gunma University, Japan

13:45 - 14:15 Heat and Mass Transfer (<https://bit.ly/3E6Pb6M>)

Chairperson: Assoc. Prof. Quang-Vinh TRAN, Phenikaa University

13:45 - 14:00 (A74) Study on the selection of operating parameters of Yanmar diesel engines on cruise ships for remote monitoring to ensure safety in operation at Khanh Hoa sea.

Dr. Duc-Tuan HO
Nha Trang University, Vietnam

14:00 - 14:15 (A75) Study on establishing a technical state's diagnostic model of the main diesel engine for the small fishing vessels.

Dr. Duc-Tuan HO, Duc-Nghia MAI
Nha Trang University, Vietnam

14:15 - 14:45 Bioengineering (<https://bit.ly/3E6Pb6M>)

Chairperson: Prof. Yoshiyuki KAGIYAMA (University of Yamanashi)

14:15 - 14:30 (A42) Relationship between the Dislocation Moments and the Inset Heights of the Acetabular Cup of an Artificial Hip Joint with the Structure to Prevent Dislocation.

Dr. Yuki KAWAMURA, Mitushi OHMASA and Ei YAMAMOTO
Kindai University, Japan

14:30 - 14:45 (A57) Mechanical Evaluation of Biological Soft Tissues Focusing on Elastin Ingredients.

Prof. Ei YAMAMOTO, Yuki KAWAMURA, Kumiko TAKEMORI, and
Hiroyuki ITO
Kindai University, Japan

14:45 - 15:00 ----- Coffee Break -----

15:00 - 16:00 Material Engineering 2 (<https://bit.ly/3E6Pb6M>)

Chairperson: Prof. Makoto UCHIDA (Osaka City University)

15:00 - 15:15 (A21) High Cycle Fatigue Strength and Residual Stress of Punched Fe-Si Steel Sheets.

M.Sc. Takumi NAGAO, Hiroto UNENO, Koichi AKITA, Takashi ABE
and Hiromitsu WATANABE

Tokyo City University, Japan

15:15 - 15:30 (A29) Material Properties Degradation of Radiation Shielding Lead Glasses by Laser Irradiation.

Dr. Takashi WAKUI, Kazuhiko YAMAZAKI, Makoto TESHIGAWARA and
Masatoshi FUTAKAWA

J-PARC Center, Japan Atomic Energy Agency, Japan

15:30 - 15:45 (A39) Delamination Behavior in Compression Bending Test of Organic Semiconductor Device.

Prof. Toshiro KOBAYASHI, Shigeru NAGASAWA, Hideaki
FURUMOTO, Ion GRUESCU, Akinobu YAMAGUCHI, and Yuichi
UTSUMI

National Institute of Technology, Tsuyama College, Japan

15:45 - 16:00 (A50) Evaluation of UV Degradation of High Strength Woven Fabric Material by Acoustic Emission Method.

Assoc. Prof. Takuma MATSUO and Shintaro TSUKAMOTO

Meiji University, Japan

16:00 - 16:30 Closing Address (<https://bit.ly/3E6Pb6M>)

Chairperson: Prof. Hiroshi TAKAHASHI (Tohoku Univ.)

Closing Address Assoc. Prof. Dinh Van Manh, Institute of Mechanics

- Vietnam Academy of Science and Technology

Announcement of next ISEM Prof. Motoharu FUJIGAKI, Fukui University

17:00 - 19:00 Banquet

Huong Viet Restaurant, 9/260 Doi Can, Ba Dinh, Hanoi

Zoom Meeting for Oral Presentations

<https://us06web.zoom.us/j/82779750447?pwd=WUtoM2FyRmlXSklFDSmUyQS9CeEhDZz09>

Short link: <https://bit.ly/3E6Pb6M>

Meeting ID: 827 7975 0447

Passcode: 083917

Airmeet for Poster Presentations:

<https://www.airmeet.com/e/eb588d30-33e1-11ec-b6f7-85fcda2c88af>

Short link: <https://bit.ly/3b2Eu8T>