Welcome to ACMFMS 2018

Dear colleagues:

It is our great pleasure to welcome you to the Sixth Asian Conference on Mechanics of Functional Materials and Structures (ACMFMS 2018). ACMFMS series is an international forum for researchers and academics, particularly from East Asia and neighboring region, to interact, exchange ideas and establish relationships, with a view to future cooperation and subsequent development of research in theoretical and applied mechanics of solids. A broad spectrum of key topics including mechanics of functional materials and structures, structural health monitoring, elasticity, plasticity, fracture and damage mechanics, impact mechanics and dynamic material behavior, contact mechanics, solid-fluid interaction, bio-mechanics will be covered.

This is the first time the ACMFMS series being held in Taiwan since its inception in 2008, and it is a great honor for us to host the meeting here at the National Cheng Kung University (NCKU). Aside from participating in this conference, we would also encourage you to spend some time to experience the cultural heritage on NCKU campus. The city of Tainan, where NCKU is located, is the oldest city in Taiwan, and had over 300 years of history as the capital of Taiwan under Koxinga and later Qing dynasty rule. NCKU has preserved many of the cultural assets, including ecological zones, national and city monuments, historic buildings, and museum. Just take a leisure walk around campus, we assure you that you will find some pleasant surprises.

Again, with the tremendous contributions from all of you, we believe that the ACMFMS 2018 will be one of the most fruitful and enjoyable ever. Thank you for your participation in the ACMFMS 2018!

ACMFMS 2018 Organizing Committee
Organization

Hosting Institution
National Cheng Kung University, Taiwan

Cooperation:
Academia-Industry Consortium for Southern Taiwan Science Park

Sponsors
Ministry of Science and Technology, Taiwan
College of Engineering, National Cheng Kung University, Taiwan
Department of Mechanical Engineering, National Cheng Kung University, Taiwan

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Conference Co-Chair: F. Narita, Tohoku University, Japan

Conference Secretary: C. D. Chen, National Cheng Kung University, Taiwan

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Z. H. Qian, Nanjing University of Aeronautics and Astronautics, China
A. Saimoto, Nagasaki University, Japan
V. P. W. Shim, National University of Singapore, Singapore
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Y. Uetsuji, Osaka Institute of Technology, Japan
J. Wang, Zhejiang University, China

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*Honorary Co-Chair*
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I. L. Chang, National Cheng Kung University, Taiwan
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C. D. Chen, National Cheng Kung University, Taiwan
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T. J. C. Liu, Ming Chi University of Technology, Taiwan
S. F. Hwang, National Yunlin University of Science and Technology, Taiwan
T. S. Yang, National Cheng Kung University, Taiwan
M. K. Yeh, National Tsing Hua University, Taiwan
General Information

Conference Venue
International Conference Hall on the Kuang-Fu Campus, National Cheng Kung University (NCKU)

Registration Desk
Registration/information desk is at the Lobby of the International Conference Hall
Opening Hours:
   - Friday, October 26, 3:00 p.m. – 8:00 p.m.
   - Saturday, October 27, 8:00 a.m. – 5:00 p.m.
   - Sunday, October 28, 8:00 a.m. – 5:00 p.m.
   - Monday, October 29, 8:00 a.m. – 1:00 p.m.

Welcome Reception
To be held at 6:00 p.m. – 8:00 p.m. on Friday, October 26, at the Multifunction Room of the International Conference Hall at NCKU.

Conference Banquet
To be held at 6:00 p.m. – 8:00 p.m. on Sunday, October 28 at the Cheng Kung Hall in 3F of the Shangri-La’s Far Eastern Plaza Hotel. The hotel is adjacent to the Kuang-Fu Campus of the NCKU.

Oral Presentation Information
1. All session rooms will be equipped with laptop and projector as well as the table microphones.
2. Presentation files in Powerpoint or Acrobat format should be uploaded 10 minutes prior to his/her session starts.
## Program

### Friday, October 26

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<tr>
<th>Time</th>
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<th>Location</th>
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<td>3:00 p.m. – 6:00 p.m.</td>
<td>Registration</td>
<td>Lobby</td>
</tr>
<tr>
<td>6:00 p.m. – 8:00 p.m.</td>
<td>Welcome Reception</td>
<td>Multifunction Room</td>
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### Saturday, October 27

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<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>9:00 a.m. - 9:20 a.m.</td>
<td>Opening Ceremony</td>
<td>1st Lecture Room</td>
</tr>
<tr>
<td>9:20 a.m. - 10:20 a.m.</td>
<td>Keynote Lecture 1</td>
<td>1st Lecture Room</td>
</tr>
<tr>
<td>10:20 a.m. - 11:00 a.m.</td>
<td>Group Photo/Coffee Break</td>
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</tr>
<tr>
<td>11:00 a.m. - 12:00 p.m.</td>
<td>Keynote Lecture 2</td>
<td>1st Lecture Room</td>
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<tr>
<td>12:00 p.m. - 1:00 p.m.</td>
<td>Lunch</td>
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</tr>
<tr>
<td>1:00 p.m. - 2:40 p.m.</td>
<td>S1: Fracture and Damage Mechanics I</td>
<td>1st, 2nd, 3rd Lecture Rooms</td>
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<tr>
<td></td>
<td>S2: Elasticity I</td>
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<td></td>
<td>S3: Dynamic Behaviors of Functional Materials</td>
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</tr>
<tr>
<td>2:40 p.m. - 3:10 p.m.</td>
<td>Coffee Break</td>
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<tr>
<td>3:10 p.m. - 4:50 p.m.</td>
<td>S4: Contact and Nonlinear Mechanics</td>
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<td>S5: Functional and Intelligent Materials I</td>
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<td></td>
<td>S6: Fracture and Damage Mechanics II</td>
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<tr>
<td>6:00 p.m. - 8:00 p.m.</td>
<td>Organizer Appreciation Party (Invitation Only) / Committee Meeting</td>
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### Sunday, October 28

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<tr>
<td>9:20 a.m. - 10:20 a.m.</td>
<td>Keynote Lecture 3</td>
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<td>10:20 a.m. - 10:50 a.m.</td>
<td>Coffee Break</td>
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<tr>
<td>10:50 a.m. - 11:50 a.m.</td>
<td>Keynote Lecture 4</td>
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<tr>
<td>11:50 a.m. - 1:20 p.m.</td>
<td>Lunch</td>
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<td>1:20 p.m. - 3:00 p.m.</td>
<td>S7: Mechanics of Functional and Intelligent Materials I</td>
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<td>S8: Fracture and Damage Mechanics III</td>
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<td></td>
<td>S9: 3D and Rapid Manufacturing</td>
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</tr>
<tr>
<td>3:00 p.m. - 3:30 p.m.</td>
<td>Coffee Break</td>
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<tr>
<td>3:30 p.m. - 4:50 p.m.</td>
<td>S10: Mechanics of Functional and Smart Structures II</td>
<td>1st, 2nd, 3rd Lecture Rooms</td>
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<td>S11: Dynamic Behaviors and Applications</td>
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<td>S12: Thermal and Opto Analyses</td>
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<tr>
<td>6:00 p.m. - 8:00 p.m.</td>
<td>Banquet</td>
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<tbody>
<tr>
<td>9:00 a.m. - 10:40 a.m.</td>
<td>S13: Functional and Intelligent Materials II</td>
<td>1st, 2nd, 3rd Lecture Rooms</td>
</tr>
<tr>
<td>10:40 a.m. - 11:00 a.m.</td>
<td>Coffee Break</td>
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<tr>
<td>11:00 a.m. - 12:20 p.m.</td>
<td>S16: Impact Mechanics and Dynamic Material Behavior</td>
<td>2nd Lecture Rooms</td>
</tr>
<tr>
<td>12:20 p.m. - 1:20 p.m.</td>
<td>Lunch</td>
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<tr>
<td>1:20 p.m. - 1:40 p.m.</td>
<td>Closing Ceremony</td>
<td>2nd Lecture Room</td>
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<tr>
<td>2:00 p.m. - 5:00 p.m.</td>
<td>City Tour</td>
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<tr>
<td><strong>Keynote Lectures</strong></td>
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<tr>
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<tr>
<td><strong>Saturday, October 27</strong></td>
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</table>
| **Keynote Lecture 1, 9:20 a.m. - 10:20 a.m.**  
Speaker: T. Y. Chen – National Cheng Kung University  
*Title TBA*  
Session Chair: C. K. Chao – National Taiwan University of Science and Technology |
| **Keynote Lecture 2, 11:00 a.m. - 12:00 p.m.**  
Speaker: H. F. Nied – Lehigh University  
*Simulation of Crack Pop-in and Dynamic Stress Intensity Factors for Welded Structures*  
Session Chair: T. C. Chiu - National Cheng Kung University |
| **Sunday, October 28** |
| **Keynote Lecture 3, 9:20 a.m. - 10:20 a.m.**  
Speaker: Akihide Saimoto - Nagasaki University  
*Interaction of Multiply Aligned Surface Cracks*  
Session Chair: Fumio Narita - Tohoku University |
| **Keynote Lecture 4, 10:50 a.m. - 11:50 a.m.**  
Speaker: Santosh Kapuria - CSIR-Structural Engineering Research Centre  
*A wave packet enriched finite element formulation for generalized piezothermoelastic wave propagation problems*  
Session Chair: TBA |
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<td>N. A. Noda - Kyushu Institute of Technology</td>
<td>C. Hwu - National Cheng Kung University</td>
<td>J. T. Chen - National Taiwan Ocean University</td>
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<tr>
<td>C.-C. Ma - National Taiwan University</td>
<td>Yu. V. Tokovyy - National Academy of Sciences of Ukraine</td>
<td>T. Tsuji - Chuo University</td>
</tr>
<tr>
<td>1. 1:00 PM - Electro-Thermo-Structural Coupled-Field Simulation of Electric Connector with Edge Crack</td>
<td>1. 1:00 PM - Thermal stresses for a coated triangle hole embedded in an infinite plate under a remote uniform heat flow</td>
<td>1. 1:00 PM - Dynamic response of functionally graded rectangular plates carrying a moving load</td>
</tr>
<tr>
<td>Thomas Jin-Chee Liu - Ming Chi University of Technology</td>
<td>S. C. Tseng, C. K. Chao - National Taiwan University of Science and Technology</td>
<td>A. R. Khorshidvand, M. Abidi - Islamic Azad University</td>
</tr>
<tr>
<td>2. 1:20 PM - Strength Estimation of Sharp Notched Plate Using Elastic-Plastic FEM Analysis</td>
<td>2. 1:20 PM - Buckling of an annular sheet via in-plane mafst strains</td>
<td>2. 1:20 PM - Study on mode couplings of ZnO thin film resonators based on the weak boundary condition</td>
</tr>
<tr>
<td>K. Oda, Y. Yoshida, H. Inoue, N. Tsutsumi - Oita University</td>
<td>T. Tomita, T. Morimoto, F. Ashida - Shimane University</td>
<td>Z. H. Qian, Z. N. Zhao, B. Wang - Nanjing University of Aeronautics and Astronautics</td>
</tr>
<tr>
<td>3. 1:40 PM - Fracture Mode Separation for Composite Split-Beam under Mixed-Mode Bending</td>
<td>3. 1:40 PM - Unsteady Thermal Stress in an Inhomogeneous Beam subjected to Cyclic Heat Supply on the Upper Surface - When the Lower Surface is insulated thermally</td>
<td>3. 1:40 PM - The effects of proof mass on the dynamic responses of a bimorph cantilevered piezoelectric energy harvester based on refined zigzag beam theory</td>
</tr>
<tr>
<td>4. 2:00 PM - Effects of Residual Stress of Resistance Spot Welds on Direction of Fatigue Crack Growth</td>
<td>4. 2:00 PM - Comprehensive Stress Impacts on Flexible Displays under the Process-Induced Thermal and Subsequent External Bending Loads</td>
<td>4. 2:00 PM - Soli-Liquid Coupled Vibration Characteristics of Piezoelectric Disks under Compressive and Incompressible Inviscid Fluids</td>
</tr>
<tr>
<td>A. Sato, I. Nishikawa, M. Itoya - Osaka institute of Technology</td>
<td>C. C. Lee, Y. Y. Liou, P. C. Huang - National Tsing Hua University</td>
<td>Chien-Yu Yen, Kai-Lin Jhuang - National Taiwan University of Science and Technology</td>
</tr>
<tr>
<td>S. Matsui, S. Furusako - Nippon Steel &amp; Sumitomo Metal Corporation</td>
<td>5. 2:20 PM - Mechanistic analysis of nanofilms on elastic substrate with consideration of surface stress effects</td>
<td>Yu-Hsi Huang - National Taiwan University</td>
</tr>
<tr>
<td>5. 2:20 PM - Effects of Hardness Distribution on Fatigue Life of Resistance Spot Welded High-Strength Steel Sheets</td>
<td>T. Watthanaprasertkun, Y. Sapsathiam - Mahidol University</td>
<td>5. 2:20 PM - A novel efficient approach for defect detection in pipeline structures using guided ultrasonic waves</td>
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<td>Dianzi Liu - University of East Anglia</td>
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<td>Chien-Hong Lin - National Cheng Kung University</td>
<td>Yu-Hsi Huang - National Taiwan University</td>
<td>A. Saimoto - Nagasaki University</td>
</tr>
<tr>
<td>1. 3:10 PM - Contact mechanics between a composite arch with initial curvature and a rigid plane</td>
<td>1. 3:10 PM - A Study on Affecting Factor of Improving Joint Strength in Fe-Al Resistance Spot Welding Using Heteromorphic Electrodes</td>
<td>1. 3:10 PM - Intensity of singular stress field for cylindrical and prismatical butt joints to evaluate the adhesive strength</td>
</tr>
<tr>
<td>Kai Tanaka, Takuya Morimoto, Fumihiro Ashida - Shimane University</td>
<td>Y. T. Nguyen, C. Hwu - National Cheng Kung University</td>
<td>N. A. Noda, R. Takaki, F. Ren, K. Tsuboi - Kyushu Institute of Technology</td>
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<td>2. 3:30 PM - A Boundary Element Approach for Indentation by Rigid Punches on Two-dimensional Anisotropic Elastic or Viscoelastic Solids</td>
<td>2. 3:30 PM - A Study on In Situ Evaluation of Nugget Formation in Resistance Spot Welding</td>
<td>2. 3:30 PM - Transient thermal response of a functionally graded piezoelectric laminate with a crack normal to the bimaterial interface</td>
</tr>
<tr>
<td>3. 3:50 PM - Elastic/plastic tension-torsion in a solid circular bar considering the Bauschinger effect</td>
<td>3. 50 PM - Fabrication of Lead-Free Piezoelectric Particle/Polymer Composites and Voltage Output due to Air-Flow/Temperature Change</td>
<td>3. 5:00 PM - A Normal Crack in a Functionally Graded Thermal Barrier Coating Bonded to a Homogeneous Elastic Substrate under Transient Thermal Loading</td>
</tr>
<tr>
<td>S. Alexandrov - Beihang University</td>
<td>Zhenjin Wang, Shoki Abe, Zhenjun Yang, Fumio Narita - Tohoku University</td>
<td>Y. Nakano, S. Ueda, M. Iyota - Osaka Institute of Technology</td>
</tr>
<tr>
<td>E. Lyamina - Institute of Problems in Mechanics</td>
<td>Yoshiiro Kawakami - Research Institute for Electromagnetic Materials</td>
<td>4. 4:10 PM - Effective Magnetolectric Properties of Fiber-reinforced Composites with Imperfect Interface</td>
</tr>
<tr>
<td>Y. R. Jeng - National Chung Cheng University</td>
<td>4. 4:10 PM - Fabrication of a microfibrillated cellulose network on wood flour surface for Wood Plastic Composites</td>
<td>5. 4:30 PM - A crack parallel to the interface between a functionally graded thermal barrier coating and a homogeneous elastic substrate under transient thermal loading</td>
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<td>4. 4:10 PM - Simple interconversions between linear viscoelastic functions and their monotonicity discussion</td>
<td>N. Shiraiishi, Y. Uetsuji - Osaka Institute of Technology</td>
<td>Y. Masaoka, S. Ueda, M. Iyota - Osaka Institute of Technology</td>
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<td>Daolong Chen - Advanced Semiconductor Engineering</td>
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<tr>
<td>Tz-Cheng Chiu, Tei-Chen Chen - National Cheng Kung University</td>
<td>5. 4:30 PM - Material Properties of Fiber-Reinforced Rubber Tube</td>
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Program Sessions: Sunday, October 28, 1:20 p.m. – 3:00 p.m.

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<td>2. 1:40 PM - Finite element modeling for nonlinear magnetostrictive problems</td>
<td>2. 1:40 PM - Formulation of stress concentration factor and shape optimization of gooseneck joint by using FEM analysis</td>
<td>2. 1:40 PM - Effects of Multiple Thermal Cycle on Sensitization of Selective Laser Melting Products Made of SUS316L</td>
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<td>3. 2:00 PM - Constitutive Modeling of Multiferroic Particle-reinforced Composites</td>
<td>3. 2:00 PM - Hybrid Composite Compressive Splitting Failure Model</td>
<td>3. 2:00 PM - Modeling of Selective Laser Sintering Processes by Finite Element/Matlab Integration</td>
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<td>4. 2:20 PM - Identification of nonlinear damping properties of magneto-rheological composites based on fractional derivative model</td>
<td>4. 2:20 PM - Delamination of Woven Carbon Fiber/Polyurethane Composite</td>
<td>4. 2:20 PM - Analysis of Selective Laser Melting Process Induced Stress and Deformation of 316L Stainless Steel</td>
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<td>5. 2:40 PM - Wear properties of Si-C/C composites with bacterial cellulose and bamboo charcoal powder</td>
<td>5.2:40 PM - Effects of Crystal Grain Size in Nugget on Peel Strength of Resistance Spot-Welded Joints</td>
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<td>T. Kikuchi - Fukushima Technology Centre</td>
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<td>Shun-Fa Hwang, Yu-Chuan Chang - National Yunlin University of Science and Technology</td>
<td>Y.-T. Chung, J.-Y. Li, T.-C. Chiu - National Cheng Kung University</td>
</tr>
</tbody>
</table>
## Program Sessions: Sunday, October 28, 3:30 p.m. – 4:50 p.m.

<table>
<thead>
<tr>
<th>Time</th>
<th>Session 10: Mechanics of Functional and Smart Structures II</th>
<th>Session 11: Dynamic Behaviors and Applications</th>
<th>Session 12: Thermal and Opto Analyses</th>
</tr>
</thead>
</table>
| 3:30 PM | 1. 3:30 PM - Multiscale numerical study on functional properties of multiferroic composite materials  
S. Fukui, Y. Uetsuji - Osaka Institute of Technology | 1. 3:30 PM - Extraction of principal component mode of vehicle body affecting the ride comfort  
H. Taguchi, T. Kajiyama, J. Yoshida - Osaka Institute of Technology | 1. 3:30 PM - The Formulation of the Phosphorescence Light Intensity from Elastoluminescent Materials  
T. Tsuji - Chuo University  
A. Yamasaki - Japan Patent Office  
Y. Kanaya - Hitachi Construction Machinery Co. |
| 3:50 PM | 2. 3:50 PM - Stress Analysis of Graphite/Epoxy Composite Pressure Vessel Using Taguchi Method  
T. H. Liu, M. K. Yeh, Y. C. Hsu - National Tsing Hua University | 2. 3:50 PM - Vibration Reduction of pocket bike handle considering hand-arm sensitivity and contribution  
C. M. Tsai, K. Inoue, J. Yoshida - Osaka Institute of Technology | 2. 3:50 PM - Improvement in Thermal Environment inside Livestock Barn by Coating Livestock Barn Envelope with High Reflective Paint  
R. Kawamura, K. Otani - University of Miyazaki  
H. Murakoso, H. Ogihara - Miyabo Co., Ltd. |
| 4:10 PM | 3. 4:10 PM - Fabrication and Characterization of Annealed FeCo Magnetostrictive Wire/Polymer Composites for Sensors and Energy Harvesters  
K. Katahira, F. Narita - Tohoku University  
N. Kimura - Yokohama National University | 3. 4:10 PM - Method for selecting important vibration mode of bicycle frame at running condition using principal component analysis  
T. Hirao, K. Nakano, J. Yoshida - Osaka Institute of Technology | 3. 4:10 PM - Experimental Examination in Mortar Hollow Circular Cylinder Block for Heat Storage  
Z. Y. Zhou, S. Iwakiri, Y. Nagase, S. Tomomatsu, R. Kawamura - University of Miyazaki  
K. Onoue - Kumamoto University |
| 4:30 PM | 4. 4:30 PM - Effects of Crystal Grain Size in Nugget on Tensile Shear Strength of Resistance Spot-Welded Joints  
Y. Matoba, S. Sibutani, M. Iyota - Osaka Institute of Technology | 4. 4:30 PM - Measurement of Output Force of Stacked Ionic Polymer Metal Composites (IPMC) Actuators  
M. Kurokawa, M. Omiya - Keio University | 4. 4:30 PM - Thermal analysis of radially-inhomogeneous hollow cylinders vs cylindrical shells  
Yu. V. Tokovsky, A. I. Chysh - National Academy of Sciences of Ukraine  
C.-C. Ma - National Taiwan University |
Program Sessions: Monday, October 29, 9:00 a.m. – 10:40 a.m.

Session 13: Functional and Intelligent Materials II
Room: 1st Lecture Room
Session Co-Chairs:
Y. O. Fukushima – National Cheng Kung University
I. L. Chang – National Cheng Kung University

1. 9:00 AM – Fabrication and Three-Point Bending Behavior of Cellulose Nanofiber/Epoxy Composites
Y. Xie, H. Kurita, K. Katabira, F. Narita – Tohoku University

2. 9:20 AM – Improved thermal cycling resistance of gradient coatings of yttria stabilized zirconia on nickel based superalloy IN718.

3. 9:40 AM – Microstructure and Mechanical Properties in Fe-Mn-Al-Ni under Both Tension and Compression
L. W. Tseng, Y. L. Lin – National Changhua University of Education

4. 10:00 AM – Development of Pyroelectric Nanosheet Using Tourmaline Powder
Y. Ando, G. Kumar Mani, K. Tsuchiya, Y. Okamura – Tokai University

5. 10:20 AM – Tensile Properties and Microstructure of Titanium Boride Whisker Reinforced Ti-1Al-4V Alloys
M. Kita, Y. Otsuko, F. Narita – Tohoku University

Session 14: Elasticity II
Room: 2nd Lecture Room
Session Co-Chairs:
N. A. Noda – Kyushu Institute of Technology
C. D. Chen – National Cheng Kung University

1. 9:00 AM – A study on the degenerate scale by using the fundamental solution with dimensionless argument for 2D elasticity problems

2. 9:20 AM – Size-dependent analysis of one-dimensional quasicrystal cylindrical nanoshell
Y. Li, Y. Gao – China Agricultural University

3. 9:40 AM – Thermo-Elasto-Plastic Behaviour of Rotating Discs Made of Functionally Graded Materials
A. M. Eldeeb, Y. M. Shabana, A. Elsawaf – Helwan University

4. 10:00 AM – Analysis of 3D elasticity problems for transversely-isotropic nonhomogeneous solids
Yu. V. Tokovyy – National Academy of Sciences of Ukraine

5. 10:20 AM – Guided waves correction for the BEM analysis of forward scattering problems in three-dimensional infinite domain
C. Yang, B. Wang, Z. Qian – Nanjing University of Aeronautics and Astronautics

Session 15: Mechanics of Functional and Smart Structures III
Room: 3rd Lecture Room
Session Co-Chairs:
A. Saimoto – Nagasaki University
Kuo-Shen Chen – National Cheng-Kung University

1. 9:00 AM – Energy Harvesting of Flexible Material Using Macro Fiber Composite under Wind Load
J. Liu, J. Deng, H. Zuo, Q. Li – Xi’an Jiaotong University

2. 9:20 AM – Enhancement effect of residual stress on piezoelectric response of laminated structures
H. W. Lee – Tamkang University

3. 9:40 AM – Interfacial Force Progress and Sensing in Bonded Carbon Fiber Composite Joints with CNT-based Polymer Adhesive Layer under Mode II Loading
Shi-Pei Oktita, Masaaki Suzuki, Fumio Narita – Tohoku University

4. 10:00 AM – Fabrication of CFRP Composite Laminates with FCo Fibers and Inverse Magnetostrictive Response Characteristics
Y. Yoshida, K. Katabira, F. Narita – Tohoku University

5. 10:20 AM – A Micromechanical Model for Active Woven Composites
Wen-Chen Lin, Chien-Hong Lin – National Cheng Kung University
# Program Sessions: Monday, October 29, 11:00 a.m. – 12:20 p.m.

## Session 16: Impact Mechanics and Dynamic Material Behavior

**Room:** 1st Lecture Room  
**Session Co-Chairs:**  
C. D. Chen - National Cheng Kung University  
Fumio Narita - Tohoku University

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Presenters</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:00 AM</td>
<td>Impact properties of hybrid composites with CF sheet and core material with glass micro balloons</td>
<td>Y. Ozawa, Y. Nakajima, T. Omura - Fukushima University</td>
</tr>
<tr>
<td>11:40 AM</td>
<td>Comparison of shock response of aluminium foam and its sandwich</td>
<td>M. P. Thorat, Viren Menezes, A. A. Gokhale - Indian Institute of Technology</td>
</tr>
<tr>
<td>12:00 PM</td>
<td>Analysis of Piezoelectric Element Subjected to Impact Force</td>
<td>M. Kawashima, T. Tsuji - Chuo University</td>
</tr>
</tbody>
</table>

## Session 17: Bio-Mechanics

**Room:** 2nd Lecture Room  
**Session Co-Chairs:**  
Chien-Hong Lin - National Cheng Kung University  
K. Oda - Oita University

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Presenters</th>
</tr>
</thead>
</table>
| 11:00 AM    | Design and Development of Valveless Pump for Artificial Auxiliary Heart Using C shaped PZT Unit | Yushi Yamanouchi, Ganesh Kumar Mani, Kazuyoshi Tsuchiya - Tokai University  
Yasutomo Uetsuji - Osaka Institute of Technology |
| 11:20 AM    | Improving the screw hole structures to strengthen the fatigue life of locking plates | C. H. Lin, C. K. Chao - National Taiwan University of Science and Technology  
J. Lin - National Taiwan University Hospital |
| 11:40 AM    | Shock-wave-driven therapeutic devices                                   | V. Menezes - Indian Institute of Technology Bombay  
H. Hosano - Kumamoto University |
| 12:00 PM    | Design of shoe sole based on three dimensional tread force measurement data | Y. Ozawa, K. Shiigai - Fukushima University   |
Directions to the Conference Venue

From Tainan Train Station: Exit the Rear Station of the Tainan Train Station, the Shangri La’s Far Eastern Plaza Hotel Tainan (the Banquet Venue) is the tall circular-column shaped building on the right. Walk straight down the Dasyue Road (University Road) for about 5 min, the entrance of the NCKU Kuang-Fu Campus is on the left. After entering the campus, the International Conference Hall is in the Student Activity Center, the first building on the left.

From High Speed Rail (HSR) Tainan Station: Walk to Taiwan Railways Administration (TRA) ShaLun Station which is directly connected to HSR Tainan Station and take TRA train to Tainan Train Station.
International Conference Hall Floor Maps

[Diagram of International Conference Hall Floor Maps on 1F and B1 levels]
PLACE AND TIME
The conference will be held at the Sendai International Center on October 2-5, 2020.

TOPICS
This is a conference on theoretical and applied mechanics of solids. Topics include but not limited to:
- Mechanics of Functional and Intelligent Materials
- Mechanics of Functional and Smart Structures
- Elasticity (Mathematical, Thermo, Electro, Electromagneto, Photo)
- Plasticity (Mathematical, Multiscale, Thermo, Visco)
- Fracture and Damage Mechanics
- Impact Mechanics and Dynamic Material Behavior
- Contact Mechanics
- Bio-Mechanics and Bio-Materials
- Solid-Fluid Interaction
- Energy Harvesting and Storage
- Structural Health Monitoring

OFFICIAL LANGUAGE
The official language will be English.

PUBLICATION OF FULL PAPERS
Selected papers will be published in the Wiley journal “Advanced Engineering Materials” and the Springer journal “Acta Mechanica” through a regular review process.

FURTHER INFORMATION
Inquiries regarding the program should be directed to:
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Department of Materials Processing, Graduate School of Engineering, Tohoku University
Aoba-yama 6-6-02, Sendai 980-8579, Japan
Tel.&Fax: (+81)22-795-7342
E-mail: acmfms2020@grp.tohoku.ac.jp
HP: http://www.material.tohoku.ac.jp/~fukugo/en/

CHAIR
Fumio Narita (Tohoku University, Japan)