

Plenary Lecture (Room A & Room B)

DAY1	
Wednesday 7th December	
10:40 - 12:20	Plenary Lecture (PL1, PL2) Chair (PL1): Insu JEON (Chonnam National University) Chair (PL2): Arnaud MACADRE (Yamaguchi University)
	PL1 Elastic Guided Wave Based NDT/SHM for Improvement of Material Reliability ○Younho CHO (Pusan National University)
	PL2 Creep in High Temperature Hydrogen (Tentative) ○Masanobu KUBOTA (Kyushu University)

Plenary Lecture (Room A & Room B)

DAY2	
Thursday 8th December	
09:00 - 10:40	Plenary Lecture (PL3, PL4) Chair (PL3): Tomoyuki FUJII (Shizuoka University) Chair (PL4): Insu JEON (Chonnam National University)
	PL3 Domain-Independent Interaction Integral Method for Fracture of Nonhomogeneous and Multi-Interface Materials ○Hongjun YU (Harbin Institute of Technology)
	PL4 Fretting Wear Mechanism ○Young CHAI (Yeungnam University)

GS (Room D)

DAY1

Wednesday 7th December

13:30 - 14:00	<p>Keynote Lecture (KL-GS) Chair: Masatoshi KURODA (Kumamoto University)</p>
	<p>KL-GS (C10179) Selective Maintenance Strategies under Uncertainty ○Yu LIU (University of Electronic Science and Technology of China)</p>
14:00 - 15:20	<p>Oral Session (GS-1 - GS-4) Materials and Reliability 1 Chair: Masatoshi KURODA (Kumamoto University)</p>
	<p>GS-1 (C10009) Increase in Robustness of Reliability Demonstration Testing ○Tobias LEOPOLD (Esslingen University of Applied Sciences)</p>
	<p>GS-2 (C10063) Automated Defects Detection in Concrete Structures Using Water Droplets Impact Saeko TOKUOMI (Kumamoto University), Yasutaka OHSHIMA, ○Kazuya MORI</p>
	<p>GS-3 (C10099) Evaluation of 3D Printed Plastics for Investment Casting ○Thanh Tan NGUYEN (Ho Chi Minh City University of Technology and Education), Van Tron TRAN, Pham Thi Hong NGA, Nguyen Chi THANH, Hong Minh Nguyen THI, Nguyen Vu Anh DUY</p>
<p>GS-4 (C10135) Reliability Analysis of a Turbine Shaft under Combined High and Low Cycle Fatigue Loading with a Parameterized Platform ○Song BAI (University of Electronic Science and Technology of China), Ke WANG, Hong-Zhong HUANG, Yan-Feng LI, Zhiming DENG</p>	

GS (Room D)

DAY3

Friday 9th December

09:00 - 11:00	<p>Oral Session (GS-5 - GS-9) Materials and Reliability 2</p> <p>Chair: Tetsuya MIYOSHI (Hannan University)</p>
	<p>GS-5 (C10045) An Investigation on Corrosion Evaluation of Paint-Coated Steel with Defects ○Kazuki OJIMA(Osaka University), Feng JIANG, Sota INOUE, Mikihiro HIROHATA</p>
	<p>GS-6 (C10125) Toward High-Throughput Study of LLZO Solid Electrolyte Thin Films through Combinatorial Sputtering ○Euimin CHEONG(Sungkyunkwan University), Dongwoo LEE</p>
	<p>GS-7 (C10130) Numerical Analysis on Failure Mechanism of Steel-Concrete Composite Decks with DFT Connectors under Hogging Moment and Effects of Concrete Strength ○Yiming HU(Kyoto University), Kazuya MURAKAMI, Takehiro TAKASUKA, Takuji KUMANO, Kunitomo SUGIURA</p>
	<p>GS-8 (C10164) Parabolic Deployable Mesh Antenna with Hingeless System of Superelastic SMA Ribs and Composite Tape Springs ○Yeong-Bae KIM (Jeonbuk National University), Jae Hyuk LIM, Ik-Soo JANG, Hong-Rae KIM, Hyun-Ung OH</p>
	<p>GS-9 (C10137) A Fundamental Investigation of Sound-Based Hammer Test for Loose Bolt Inspection ○Yiran YU (Kyoto University), Kunitomo SUGIURA, Yoshinao GOI</p>

OS1 (Room A)

DAY1

Wednesday 7th December

Oral Session (OS1-1 - OS1-4) Fracture of Materials and Structures 1 (Crack Analysis) Chair: Masaki OMIYA (Keio University)	
14:00 - 15:20	OS1-1 (C10038) A Mode-Adjustable Phase-Field Model Considering the Relative Contribution of Different Crack Driving Energy ○Liulei HAO (Harbin Institute of Technology), Hongjun YU, Licheng GUO
	OS1-2 (C10096) Investigation of the Thermal Fracture Problem of Non-Homogeneous Materials with Inclined Crack under Uniform Heat Flow ○Fengnan GUO (Dalian University of Technology), Licheng GUO, Hongjun YU
	OS1-3 (C10108) Stress Intensity Factors of Interface Crack Associated with Two Singular Stress Fields at the Edge of Lap Joint ○Tasuku HIRATSUKA (Oita University), Kazuhiro ODA, Noriko TSUTSUMI
	OS1-4 (C10127) A Study on Crack Analysis Simulation of Underground Concrete Tank for Maintenance Reliability Enhancement ○Beomjin KIM (Pusan National University), Younho CHO
	Oral Session (OS1-5 - OS1-8) Fracture of Materials and Structures 2 (Environmental Effect) Chair: Kazuhiro ODA (Oita University)
15:30 - 16:50	OS1-5 (C10019) Monte Carlo Simulation of Stress Corrosion Cracking in Ni-Based Welded Alloy with Surface Defects ○Tomoyuki FUJII (Shizuoka University), Naoya OGASAWARA, Keiichiro TOHGO, Yoshinobu SHIMAMURA
	OS1-6 (C10159) Simulation of Ductile and Brittle Fracture of Small Punch Test in Hydrogen ○Kiwon SEO (Korea University), Jinha HWANG, Yunjae KIM
	OS1-7 (C10024) Experimental and Theoretical Understanding of Ammonia's Hydrogen Embrittlement Induction Effect ○Nan ZHANG (Kyushu University), Ryosuke KOMODA, Masanobu KUBOTA, Aleksandar STAYKOV
	OS1-8 (C10158) Corrosion Behavior and Rust Layer Properties of Weathering Steel in Coastal Atmospheres ○Hui SHEN (Kyoto University), Thandar WINT, Kunitomo SUGIURA, Yasuo KITANE

OS1 (Room A)

DAY2

Thursday 8th December

Oral Session (OS1-9 - OS1-12) Fracture of Materials and Structures 3 (Practical Application) Chair: Natsuihiro MITA (Keio University)	
11:00 - 12:20	OS1-9 (C10044) Evaluation of Deformation and Failure Behaviors of Pipe Elbows under Large Amplitude Dynamic Loads by Excitation Test ○Jinney HONG (Chosun University), Jin Weon KIM, SangEun KIM, Dae Young LEE, Heung Bae PARK
	OS1-10 (C10098) On an Applicability of Stress-Modified Fracture Strain Model to Simulating Fracture Behavior of Thermally Aged Nuclear Piping ○Taehyeon SEOK (Seoul National University of Science and Technology), Euikyun PARK, Jinha HWANG, Hunetae KIM, Yunjae KIM, Namsu HUH
	OS1-11 (C10111) Simple Evaluation of Inclined Sharp Notched Plate Strength under Large Scale Yielding Condition ○Yusuke YAMASHITA (Oita University), Kazuhiro ODA, Noriko TSUTSUMI, Hiroki ODA
	OS1-12 (C10145) Temperature and Strain rate Dependent Material Modeling of Nuclear Pressure Vessel Steel for Severe Accident and Management Strategy Simulation ○Euikyun PARK (Korea University), Jisu KIM, Junwon PARK, Yunjae KIM, Yukio TAKAHASHI, Kukhee LIM

OS1 (Room A)

DAY2

Thursday 8th December

DAY2 Thursday 8th December	
13:30 - 14:00	Keynote Lecture (KL-OS1) Chair: Yoshinobu SHIMAMURA (Shizuoka Univerisity)
	KL-OS1 (C10160) In Situ Approach to Assessing the Interfacial Strength and Fracture Toughness of 3D Woven Composites ○Licheng GUO (Harbin Institute of Technology), Tao ZHENG, Ruijian SUN, Zhixing LI
14:00 - 15:20	Oral Session (OS1-13 - OS1-16) Fracture of Materials and Structures 4 (Composites) Chair: Hongjun YU (Harubin Institute of Technology)
	OS1-13 (C10166) Mechanical Behavior of Hierarchical Chiral Fibers and Bundles ○Yingbin ZHANG (Tianjin University), Jianshan WANG
	OS1-14 (C10171) Fracture Analysis of Hierarchical Chiral Structure ○Jia Jun DONG (Tianjin University), Jian Shan WANG
	OS1-15 (Cancel)
	OS1-16 (Cancel)
15:30 - 16:50	Oral Session (OS1-17 - OS1-20) Fracture of Materials and Structures 5 (Adhesive and Functional Materials) Chair: Yoshinobu SHIMAMURA (Shizuoka Univerisity)
	OS1-17 (C10112) Effect of Notch on Adhesive Strength of Butt Joint ○Kyosuke NISHINO (Oita University), Kazuhiro ODA, Noriko TSUTSUMI, Marika TAKEO
	OS1-18 (C10128) Improvement of Shear Impact Strength of Epoxy Adhesives by Addition of Cellulose Nanofibers ○Tomoyasu UGAJIN (Doshisha University), Kazuya OKUBO, Kiyotaka OBUNAI
	OS1-19 (C10037) Dynamic Fracture Analysis in Nonhomogeneous Piezoelectric Materials with Complex Interfaces ○Shuai ZHU (Harbin Institute of Technology), Hongjun YU, Licheng GUO
	OS1-20 (C10173) Phase Field Modeling of Coupling Evolution of Polarization, Fracture, and Dielectric Breakdown in Ferroelectric Materials ○Yong ZHANG (Tongji University), Jie WANG

OS1 (Room A)

DAY3

Friday 9th December

Oral Session (OS1-21 - OS1-26) Fracture of Materials and Structures 6 (Nanoscale) Chair: Toshiyuki KONDO (Osaka University)	
09:00 - 11:00	OS1-21 (C10094) Improved Verwey Transition of 50 nm Fe ₃ O ₄ Thin Film Grown on Atomically Ordered Smooth MgO Substrate ○Ai OSAKA (Osaka University), Daisetsu TOH, Kazuto YAMAUCHI, Yasuhisa SANO, Hidekazu TANAKA, Azusa HATTORI
	OS1-22 (C10103) The Degree of Freedom Associate with the 1D Thermal Glide of a Prismatic Dislocation Loop in α -Iron: A Molecular Dynamics Study ○Mugilgeethan VIJENDRAN (Kyoto University of Advanced Science), Ryosuke MATSUMOTO
	OS1-23 (C10097) Fracture Behaviors and Applications of Two-Dimensional Covalent Organic Frameworks (COF) Films ○Chao WANG (Harbin Institute of Technology), Chao SUI, Gong CHENG, Weizhe HAO
	OS1-24 (C10172) Fracture Behavior Modulation in Nanoscale Thin Films by the Nano-Notch ○Yabin YAN (East China University of Science and Technology), Guoqing XU
	OS1-25 (C10157) Alternative Fracture Theories for Nano-Sized Brittle Components ○Kai HUANG (Harbin Institute of Technology), Yan WANG, Pengfei JIA, Licheng GUO
	OS1-26 (C10022) Evaluation of Tensile Strength of Carbon Nanotube by Sonication-Induced Scission ○Yoshinobu SHIMAMURA (Shizuoka University), Po-Wei SU, Tomoyuki FUJII, Yoku INOUE

OS1 (Room E)

DAY3

Friday 9th December

09:00 - 11:00	<p>Oral Session (OS1-27 - OS1-31)</p> <p>Fracture of Materials and Structures 7 (Fatigue and Durability)</p> <p>Chair: Tomoyuki FUJII (Shizuoka University)</p>
	<p>OS1-27 (C10084)</p> <p>Investigation of Crack Generation and Propagation for Spot Welded Advanced High-Strength Steel Sheets</p> <p>○Zhenduo YAO (Keio University), Masaki OMIYA</p>
	<p>OS1-28 (C10122)</p> <p>Acoustic Cavitation Peening for Crack Tip in Bulk Metal</p> <p>○Sunghwan JUNG (Dankook University)</p>
	<p>OS1-29 (C10008)</p> <p>Fatigue Strength Evaluation of Cu-Ni-Si Copper Alloy Strip</p> <p>○Natsuhiko MITA (Keio University), Masaki OMIYA, Shingo WATANABE, Norio ISHIZAKA</p>
	<p>OS1-30 (C10140)</p> <p>Life Prediction of the L-Holder of Continuous Ship Unloader</p> <p>○Seung hun LEE (Changwon University), Jong Il SONG, Dong woo LEE</p>
	<p>OS1-31 (C10175)</p> <p>A Finite Element Scheme for Non-Fourier Heat Conduction in Non-homogeneous Materials Using the Newmark Method</p> <p>○Yanyan ZHANG (Civil Aviation Flight University of China), Tao ZHENG, Bin ZHOU, Zhaowei ZHENG, Licheng GUO</p>

OS2 (Room B)

DAY1

Wednesday 7th December

DAY1 Wednesday 7th December	
14:00 - 15:20	<p>Oral Session (OS2-1 - OS2-4) Deformation and Strength - I Chair: Atsutomo NAKAMURA (Osaka University)</p>
	<p>OS2-1 (C10053) Characteristic Fatigue of Micro-Sized Single Crystal Copper ○Takashi SUMIGAWA (Kyoto University)</p>
	<p>OS2-2 (C10057) Molecular Dynamics Simulation of Slip Behavior of Cu Single Crystal Nanorods under Uniaxial Tension and Compression Loading ○Emi KAWAI (The University of Tokyo), Atsushi KUBO, Yoshitaka UMENO</p>
	<p>OS2-3 (C10152) Characteristics Evaluation of Nano Particle Transfer of Gray Cast Iron-EN31 Steel Contact under Sliding Condition ○Pathlavath Srikanth NAYAK (Vardhaman College of Engineering), Subramani ANANTH, Kolar DEEPAK, Srinivasa RAO, Udaya PRAKASH</p>
	<p>OS2-4 (C10174) In Situ SEM Bending Experiments on the Stress Relaxation of Micro-Single-Crystal Copper ○Yabin YAN (East China University of Science and Technology)</p>
15:30 - 16:50	<p>Oral Session (OS2-5 - OS2-8) Microstructure - I Chair: Yoshimasa TAKAHASHI (Kansai University)</p>
	<p>OS2-5 (C10058) Reaction-Diffusion Theory for Self-Organized Dislocation Patterning in Fatigued Metals ○Hiroyuki SHIMA (University of Yamanashi), Akihiro TOBISE, Yuri AKIBA, Yoshitaka UMENO, Takashi SUMIGAWA</p>
	<p>OS2-6 (C10123) Swirl Cast/WEDM Examination of Al-7075/SiC&Al₂O₃ ○Angadi SESHAPPA (Vardhaman College of Engineering), Prasad B ANJANEYA</p>
	<p>OS2-7 (C10144) The Effect of Cu Addition on the Tensile and Fatigue Behavior of NiTi Shape Memory Alloy Thin Films ○Hyemin RYU (Korea Advanced Institute of Science and Technology), Zhuo Feng LEE, Abdul REHMAN, Ji-Young KIM, Sunkun CHOI, Gi-Dong SIM</p>
	<p>OS2-8 (C10064) An Optimum Twin Thickness of Strength in Face-Centered Cubic Metals through Molecular Dynamics Simulation Islam Mohammad RAZZAKUL (Kanazawa University), Tomoaki NIIYAMA, ○ Tomotsugu SHIMOKAWA</p>

OS2 (Room B)

DAY2

Thursday 8th December

Oral Session (OS2-9 - OS2-12) Microstructure - II Chair: Tomotsugu SHIMOKAWA (Kanazawa University)	
11:00 - 12:20	OS2-9 (C10147) Modeling and Numerical Analysis of Screw Dislocations in Nanowires Based on Continuum Mechanics ○Sigiet Haryo PRANOTO (Osaka University), Shunsuke KOBAYASHI, Ryuichi TARUMI
	OS2-10 (C10018) Fracture Behavior of Polycarbonate at a Molecular Level: Effect of Spatial Distribution, Entanglement, and Molecular Weight ○Tatchaphon LEELAPRACHAKUL (The University of Tokyo), Atsushi KUBO, Yoshitaka UMENO
	OS2-11 (C10039) Stepped $\Sigma 3$ Grain Boundary Migration in Miscible Ni-Cu Random Alloys: Elucidating the Driving Force Regimes Effect ○Akarsh VERMA (Brigham Young University), Eric HOMER, Oliver JOHNSON, Shigenobu OGATA
	OS2-12 (C10071) Evaluation of Hydrogen Absorption-Induced Microscopic Damage in Palladium ○Yoshimasa TAKAHASHI (Kansai University), Ryumon OKADA, Kei TAKEHARA, Koyo NAGAI, Masanori TAKUMA, Ken-ichi SAITOH, Tomohiro SATO

OS2 (Room B)

DAY2

Thursday 8th December

DAY2 Thursday 8th December	
14:00 - 15:20	<p>Oral Session (OS2-13 - OS2-16) Deformation and Strength - II Chair: Takashi SUMIGAWA (Kyoto University)</p>
	<p>OS2-13 (C10055) Molecular Dynamics Simulation of Fatigue of Single-Crystal Metal Nanorods ○Atsushi KUBO (The University of Tokyo), Emi KAWAI, Yoshitaka UMENO</p>
	<p>OS2-14 (C10141) Sintered Silver Degradation Assessment by Thermal and Mechanical Cyclic Tests ○Keisuke WAKAMOTO (Rohm Co., Ltd.), Takaukazu OTSUKA, Ken NAKAHARA, Takahiro NAMAZU</p>
	<p>OS2-15 (C10072) Analysis of Mechanical Behavior of Crystalline Materials by Atomic-Resolution in Situ TEM Loading Experiment ○Eita TOCHIGI (The University of Tokyo), Minjian CAO, Takaaki SATO, Naoya SHIBATA, Hiroyuki FUJITA, Ikuhara YUICHI</p>
	<p>OS2-16 (C10146) Combinatorial Study of Submicron Nickel-Titanium Thin Films through Membrane Deflection Experiments ○Zhuo Feng LEE (Korea Advanced Institute of Science and Technology), Hyemin RYU, Ji-Young KIM, Hojang KIM, Jae-Hoon CHOI, Injong OH, Gi-Dong SIM</p>
15:30 - 16:50	<p>Oral Session (OS2-17 - OS2-20) Thin Films Chair: Hiroyuki SHIMA (Yamanashi University)</p>
	<p>OS2-17 (C10102) Two-Dimensional Analysis on the Size-Dependent Characteristics in a Piezoelectric Semiconductor Nanostructure with the Consideration of Surface Effect ○Luke ZHAO (Xi'an Jiaotong University), Feng JIN</p>
	<p>OS2-18 (C10115) Grain Size Effect on Fracture Toughness of Submicrometer-Thick Copper Thin Films ○Toshiyuki KONDO (Osaka University), Koki FUKUDA, Kohji MINOSHIMA</p>
	<p>OS2-19 (C10138) Investigating the Fatigue Behavior of Nanotwinned Ni-Mo-W Thin Films ○JungHun PARK (Korea Advanced Institute of Science and Technology), Sunkun CHOI, Yuhyun PARK, Gi-Dong SIM</p>
	<p>OS2-20 (C10034) Phase-Field Simulation of Mechanically Induced Polar Skyrmions in PbTiO₃ Ultrathin Films ○Kohta KASAI (Kyoto University), Takashi NOJIMA, Hiroyuki HIRAKATA, Takahiro SHIMADA</p>

OS2 (Room B)

DAY3

Friday 9th December

Oral Session (OS2-21 - OS2-23)	
Multiphysics	
Chair: Atsushi KUBO (The University of Tokyo)	
09:00 - 11:00	OS2-21 (C10025) First-Principles Study of Quantum Electronic Strengthening of Covalent Materials by Excess Electrons/Holes ○Hiroki NODA (Kyoto University), Shumpei SAKAGUCHI, Hiroyuki HIRAKATA, Takahiro SHIMADA
	OS2-22 (C10091) An Experimental Study of Light Effects on Dislocation Behavior in Inorganic Semiconductor Materials ○Atsutomo NAKAMURA (Osaka University)
	OS2-23 (C10028) Temperature Dependence of the Magnetic Skyrmion-Skyrmion Interaction: A Phase-Field Study ○Yu WANG (Kyoto University), Jie WANG, Takayuki KITAMURA, Hiroyuki HIRAKATA, Takahiro SHIMADA

OS3 (Room D)

DAY1

Wednesday 7th December

Oral Session (OS3-1 - OS3-4) Fatigue 1 Chair: Yuki NAKAMURA (National Institute of Technology, Toyota College)	
15:30 - 16:50	OS3-1 (Cancel)
	OS3-2 (C10165) Influence of Heat Treatment on Fatigue Behavior of Inconel 718 ○Kolar DEEPAK (Vardhaman College of Engineering), Venu KUMAR, N LIKITH, R DAMODARAM
	OS3-3 (C10021) Effect of Various Fine Particle Peening on Bending Fatigue Strength of Spur Gears ○Jumpei YAMANE (Tottori University), Tomoya BABA, Toshiyasu OMURA, Ryosuke NISHI, Yuichi ONO, Takao KOIDE
	OS3-4 (C10062) Fatigue Property Evaluation of SCM420H Steel Treated by Short-Time Carburizing with Atmospheric-Controlled Induction-Heating Fine Particle Peening ○Motoaki HAYAMA (Keio University), Gen UMENO, Shogo TAKESUE, Jun KOMOTORI

OS3 (Room D)

DAY2

Thursday 8th December

Oral Session (OS3-5 - OS3-7) Fatigue 2	
Chair: Yuichi ONO (Tottori University)	
11:00 - 12:20	OS3-5 (C10090) Fatigue Properties of Thin Wires and Films of Commercially Pure Ti Made by Multi-Directional Forging ○Yoshihiko UEMATSU (Gifu University), Hiromi MIURA
	OS3-6 (C10151) Grain Size Effect on Near-Threshold Fatigue Crack Propagation in CrMnFeCoNi High-Entropy Alloy Fabricated by Spark Plasma Sintering ○Keisuke FUJITA (Shizuoka University), Hayato TSUBOI, Shoichi KIKUCHI
	OS3-7 (Cancel)

OS3 (Room D)

DAY2

Thursday 8th December

DAY2 Thursday 8th December	
14:00 - 15:20	<p>Oral Session (OS3-8 - OS3-11) Fatigue 3</p> <p>Chair: Benjamin GUENNEC (Toyama Prefectural University)</p>
	<p>OS3-8 (C10124) A Phenomenological Analysis of Wide-Range SN Curves in Metal Fatigue ○Yuzo NAKAMURA (Kagoshima University)</p>
	<p>OS3-9 (C10081) Establishment of Fatigue Limit Diagrams for Stainless Steels Subjected to Excessive Deformation ○Miu HAYASHI (Hiroshima University), Takeshi ANDO, Jinta ARAKAWA, Hiroyuki AKEBONO, Atsushi SUGETA</p>
	<p>OS3-10 (C10023) Cyclic Stress Measurement Using XRD Analysis of Grains in Electrodeposited Copper Foil ○Ke CHENG (Tottori University)</p>
	<p>OS3-11 (C10150) Prognostics of Solder Fatigue Life under Variable Loading Condition Using Cumulative Damage Model ○Suyeon LEE (The State University of New York), Park SEUNGIL, Han CHANGWOON</p>
15:30 - 16:50	<p>Oral Session (OS3-12 - OS3-14) Fatigue 4</p> <p>Chair: Yoshihiko UEMATSU (Gifu University)</p>
	<p>OS3-12 (C10046) Fatigue Properties of Zirconia-Reinforced Ti-6Al-4V Nanocomposite Processed by Additive Manufacturing Technology ○Benjamin GUENNEC (Toyama Prefectural University), Amine HATTAL, Azziz HOCINI, Kamilla MUKHTAROVA, Takahiro KINOSHITA, Noriyo HORIKAWA, Jeno GUBICZA</p>
	<p>OS3-13 (C10027) Investigation of Surface Crack Growth Behavior of A7075 Aluminum Alloy under Nonproportional Loading ○Hiroki KAKIDA (Tottori University), Yuichi ONO, Takumi ADACHI, Syun YAMANE</p>
	<p>OS3-14 (C10050) Notch Effect on the Failure Behaviors under Fully Reversed Large Amplitude Cyclic Loads ○Sang Eon KIM (Chosun University), Jin Weon KIM, Jong Sung KIM</p>

OS4 (Room C)

DAY2

Thursday 8th December

	<p>Oral Session (OS4-1 - OS4-4) Reliability of Biomaterials 1</p> <p>Chair: Yuichi OTSUKA (Nagaoka University of Technology)</p>
14:00 - 15:20	<p>OS4-1 (C10092) Dynamic Electronic Speckle Interference Microscopy Using Dielectrophoretic-Induced Stress Wave for Observing Cells Located Deep within in Vitro Three-Dimensional Hydrogel Culture</p> <p>OTakashi MORIKURA (Keio University), Shogo MIYATA</p>
	<p>OS4-2 (C10060) Effects of Viscoelastic Response on Dynamic Deformation of Artificial Polymeric Heart Valve</p> <p>OMitsugu TODO (Kyushu University), Shahrul MARWAN</p>
	<p>OS4-3 (C10061) Biomechanical Effects of Bone Quality after Total Hip Arthroplasty</p> <p>Mitsugu TODO (Kyushu University), OAiman IZMIN</p>
	<p>OS4-4 (C10086) A Versatile Method to Fabricate Extreme-Temperature-Tolerant Gels</p> <p>OMd tariful islam MREDHA (Chonnam National University), Insu JEON</p>
	<p>Oral Session (OS4-5 - OS4-8) Reliability of Biomaterials 2</p> <p>Chair: Masayoshi MIZUTANI (Tohoku University)</p>
15:30 - 16:50	<p>OS4-5 (C10093) Molecular Dynamics Simulation Study of Contact Mechanics of Titanium Sphere Indented on Hydroxyapatite Plane Taking into Account Effect of Interfacial Chemical Reaction</p> <p>OPham DAT (Nagaoka University of Technology), Yuichi OTSUKA, Yukio MIYASHITA</p>
	<p>OS4-6 (C10078) Antiviral Properties of Hydroxyapatite(HAp)/Titania Coating Fabricated by Solution Precursor Plasma Spray (SPPS)</p> <p>OYuichi OTSUKA (Nagaoka University of Technology), Mahmud MIRAZUL, Yukio MIYASHITA</p>
	<p>OS4-7 (C10073) Evaluation of Single-Cell Manipulation via Magnetic Force on Micromachined Substrates</p> <p>OSatoshi OTA (Shizuoka University), Hiroki YASUGA, Yuta KURASHINA, Kenta NAKAZAWA, Shoichi KIKUCHI</p>
	<p>OS4-8 (C10035) Evaluation of the Viability of Cells Injected from a Needle-Free Dosing Device</p> <p>OMami IWASAKI (University of Toyama), Yuuna KATO, Ayumu OGASAWARA, Tadashi NAKAJI, Noriyasu OGUMA</p>

OS4 (Room C)

DAY3

Friday 9th December

	<p>Oral Session (OS4-9 - OS4-13) Reliability of Biomaterials 3</p> <p>Chair: Mototsugu TANAKA (Kanazawa Institute of Technology)</p>
09:00 - 11:00	<p>OS4-9 (C10075) A Study on Topography Formation of Ti6Al4V Alloys Modeling by Selective Laser Melting Technology</p> <p>OZhenjun LI (Tohoku University), Naoki TAKANO, Ziqi CHEN, Masayoshi MIZUTANI</p>
	<p>OS4-10 (C10085) Texturing of Artificial Skin Materials by Pulsed Laser</p> <p>OJunna WATANABE (Tohoku University), Masayoshi MIZUTANI</p>
	<p>OS4-11 (C10030) Optimization of Preparation Condition of HAp/Collagen Composite Fiber Bundles Prepared by Electrophoresis</p> <p>OKen KOMATANI (Kanazawa Institute of Technology), Mototsugu TANAKA, Isao KIMPARA</p>
	<p>OS4-12 (C10031) Effect of Introducing Cerebrospinal Fluid Elements into Stress Analysis Models of Brain Constrained during Infancy</p> <p>ODaiki SHIMIZU (Kanazawa Institute of Technology), Mototugu TANAKA, Isao KIMPARA</p>
	<p>OS4-13 (C10048) Preparation of PCL/PLA Functional Gradient Substrate and Its Effect on Osteoclastic Metabolic Behavior</p> <p>OMototsugu TANAKA (Kanazawa Institute of Technology), Toshiki HIGASHIGAWA, Rvoya OHTANI, Isao KIMPARA</p>

OS5 (Room C)	
DAY1	
Wednesday 7th December	
13:30 - 14:00	Keynote Lecture (KL-OS5) Chair: Shinya MATSUDA (Kagawa University)
	KL-OS5 (C10180) Data-Driven Fault Diagnosis and RUL Estimation for Rotating Machinery OJinhua MI (University of Electronic Science and Technology of China)
14:00 - 15:20	Oral Session (OS5-1 - OS5-4) Material Strength Reliability and Risk Management 1 Chair: Fumiko KAWASHIMA (Kumamoto University)
	OS5-1 (C10026) Comparison of Guidance Effectiveness Using Two Different Sound Source Presentation Methods in Evacuation Systems OTetsuya MIYOSHI (Hannan University)
	OS5-2 (C10131) Application of the Functional Resonance Analysis Method in School Disaster Risk Reduction OYoshinori ITAMI (Kagawa University), Kyosuke TAKAHASHI, Hitoshi INOMO
	OS5-3 (C10133) Road Restoration Planning through Multi-Agent Simulation OSouma SAKANE (Kagawa University), Kyosuke TAKAHASHI, Hitoshi INOMO
15:30 - 16:50	OS5-4 (C10169) Crack Progress Evaluation in Concrete Bridges Using Deep Learning and Image Processing Yasutoshi NOMURA (Ritsumeikan University), OShota HIRANO, Hiroshi YAMAZAKI, Yukihisa YAMATO
	Oral Session (OS5-5 - OS5-8) Material Strength Reliability and Risk Management 2 Chair: Tsutomu ITO (Toyama Prefectural University)
	OS5-5 (C10014) Stochastic Estimation of Number of Saturation Transverse Cracks in CFRP Laminates by Markov Process Shinya MATSUDA (Kagawa University), ORyoya UEHARA, Koichi GODA
	OS5-6 (C10036) Study on Evaluation Method Using Image Analysis of Initiation Rate and Growth Rate of Voids and of Failure of Steel with TypeIV Creep Damage OFumiko KAWASHIMA (Kumamoto University), Yusuke HAYASHI, Yuki KOBAYASHI, Yusuke ODA, Takahiro TOKUNAGA, Hiroto NAKANO, Kazuhito FUJIWARA
OS5-7 (C10121) A Note on Reliability Assessment of Impact Crack Closure Retrofit Treatment for Fatigue Cracks OKoki KAWAHARA (Kansai University), Hiroaki KANEKIYO	OS5-8 (C10168) Examination of Crack Progress Using Image Registration and Correlation Methodologies OFumiya KUSUMOTO (Ritsumeikan University), Daiki HAYASHI, Yasutoshi NOMURA

OS5 (Room C)	
DAY2	
Thursday 8th December	
11:00 - 12:20	Oral Session (OS5-9 - OS5-12) Material Strength Reliability and Risk Management 3 Chair: Yasutoshi NOMURA (Ritsumeikan University)
	OS5-9 (Cancel)
	OS5-10 (C10109) Piping Risk Evaluation Considering Permeability Random Field ORyota OHASHI (Okayama University), Go KUBOTA, Shin-ichi NISHIMURA, Toshifumi SHIBATA, Takayuki SHUKU
	OS5-11 (C10136) Global Sensitivity Analysis for Aero Engine Gear Considering Dependence of Multiple Failure Modes ONing LU (University of Electronic Science and Technology of China), Yan-Feng LI, Tianlong XU, Hong-Zhong HUANG, Sajawal Gul NIAZI
	OS5-12 (C10142) Optimization of CNC Milling Process Parameters with Cryo-Treated WC Tools by RSM OMukhoti Vishnu VARDHAN (Vardhaman College of Engineering), K AJAY, T V Sai NARENDRA, Kolar DEEPAK, P Srinivasa RAO

OS6 (Room E)

DAY1

Wednesday 7th December

DAY1 Wednesday 7th December	
14:00 - 15:20	<p>Oral Session (OS6-1 - OS6-4) Composites 1 Chair: Tetsusei KURASHIKI (Osaka University)</p>
	<p>OS6-1 (C10032) An Experimental Study of the Effect of Prestress and Fatigue Damage on the Damping Ratio of GFRP Laminates ○Ruixi XU (Kyoto University), Akihiko SATO, Kunitomo SUGIURA, Yasuo KITANE, Yoshinao GOI, Hideki HIBI</p>
	<p>OS6-2 (C10015) Damage Accumulation Process and Electrical Impedance Response during the Punch Shear Machining of CFRP Laminates Shinya MATSUDA (Kagawa University), ○Yuya FUJIMOTO, Keiji OGI</p>
	<p>OS6-3 (C10020) Numerical Simulations of the Bearing Strength of Thin-Ply Fibre Metal Laminates ○Benedikt KOETTER (Kyoto University), Kohei YAMADA, Naoki TAKATSUKA, Bodo FIEDLER, Masaaki NISHIKAWA</p>
	<p>OS6-4 (C10156) Effect of Matrix Modification by Addition of Fillers on the Interlaminar Shear Strength and Healing Efficiency of Carbon Fiber Reinforced Polymers Encompassing Self-Healing ○Yasuka NASSHO (Toyama Prefectural University), Kazuaki SANADA, Shinnosuke HIROOKA, Ryuichiro YAMADA, Kento MATSUZAWA, Kazuya NAGATA</p>
15:30 - 16:50	<p>Oral Session (OS6-5 - OS6-8) Composites 2 Chair: Benedikt KOETTER (Kyoto University)</p>
	<p>OS6-5 (C10080) Effect of Ply Thickness on Damage Development of CFRTP Using Spread Yarns ○Mayu FUJIMOTO (Osaka University), Kazutaka MUKOYAMA, Xingsheng LI, Koushu HANAKI, Tetsusei KURASHIKI</p>
	<p>OS6-6 (C10088) Reliability-Based Critical Buckling Loads of Composite Tubes with Random Variability in Ply Material Properties Rajamohan GANESAN (Concordia University), ○Ajeesh NAIR</p>
	<p>OS6-7 (C10153) Deployment of Bistable Tape Springs ○Geunsung JUNG (Korea Carbon Industry Promotion Agency), Yeong-Bae KIM, Jae Hyuk LIM</p>
	<p>OS6-8 (C10067) Monitoring Hole-Drilling Damage in a CFRP Laminate by an Electrical Method ○Keiji OGI (Ehime University), Mitsuyoshi TSUTSUMI, Koichi MIZUKAMI</p>

OS6 (Room E)

DAY2

Thursday 8th December

Oral Session (OS6-9 - OS6-12) Composites 3 Chair: Hayato NAKATANI (Osaka Metropolitan University)	
11:00 - 12:20	OS6-9 (C10013) Out-of-Plane Shear Strength of CFRP and GFRP by Shear and Punch Press Loadings Shinya MATSUDA (Kagawa University), OMikio AMUFUKUTAKE, Keiji OGI
	OS6-10 (C10059) Effect of Alumina Addition to Resin and High Temperature Environment on Fiber Matrix Interfacial Shear Strength of Carbon Fiber/Polyamide 6 OMinori MURACHI (Doshisha University), Kazuto TANAKA, Masataka KAWAGUCHI, Kimitaka WATANABE
	OS6-11 (C10079) Lightning Strike Protection System Designed by Multi-Objective Optimization for Carbon Fiber Reinforced Composites OKunkun FU (Tongji University), Huixin ZHU, Bin YANG, Yan LI
	OS6-12 (C10065) Fracture Behaviors of the CFRP Bonded with a Urethane Adhesive: Single Lap-Shear Joint Specimens OHyunbum KIM (National Institute of Technology, Numazu College), Shunya TSUJIMOTO, Masahumi NIWANO

OS6 (Room E)

DAY2

Thursday 8th December

DAY2 Thursday 8th December	
14:00 - 15:20	<p>Oral Session (OS6-13 - OS6-16) Composites 4</p> <p>Chair: Junji NODA (Kindai University)</p>
	<p>OS6-13 (C10066) Tensile Properties of Wood Plastic Composites with CNF Surface Coating ○Wycliffe ONDIEK (Yamaguchi University), Masahiro KONDO, Masaki IWAMOTO, Takahisa OGINO, Maki ADACHI, Koichi GODA, Arnaud MACADRE</p>
	<p>OS6-14 (C10074) Investigation of Fiber Anisotropy Control of PLLA/CNF Composite Thin Film and Theoretical Calculation of Mechanical Properties ○Yuichiro TSUYUKI (Tokai University)</p>
	<p>OS6-15 (C10106) Effect of Reinforcing Structure on Mechanical Property Degradation of Flax/PLA Composites by Water Absorption ○Hayato NAKATANI (Osaka Metropolitan University)</p>
	<p>OS6-16 (C10155) Enhanced Ductility of Cellulose Microfiber/Polypropylene Composites by Addition of Small Amounts of Cellulose Nanofibers with Different Fiber Length ○Fumihiko OZAKI (Toyama Prefectural University), Kazuya NAGATA, Kazuaki SANADA, Yuki MORIMOTO, Kota OGURA</p>
15:30 - 16:50	<p>Oral Session (OS6-17 - OS6-20) Composites 5</p> <p>Chair: Hyunbum KIM (National Institute of Technology, Numazu College)</p>
	<p>OS6-17 (C10116) In-Plane Shear Delamination Behavior of Welding Joint for Cruciform Natural Fiber Composites ○Junji NODA (Kindai University), Taisei YAMANAKA, Shingo HAMADA</p>
	<p>OS6-18 (C10089) Effect of Ethylene-Vinyl Acetate on the Properties of Polybutylene Terephthalate/Ethylene-Vinyl Acetate Polymer Blends ○Au MY (Ho Chi Minh City University of Technology and Education), Pham NGA, Nguyen THINH</p>
	<p>OS6-19 (C10154) Fabrication of Zr-Cu System Glassy Alloy by Gas Atomization and Spark Plasma Sintering ○Hitoo TOKUNAGA (National Institute of Technology, Kagoshima College), Yutaro OGASHIWA, Makoto NANKO</p>
	<p>OS6-20 (C10163) Prediction of Electrical Conductivity of Highly Stretchable CNT-Polymer Composites through Network Model ○Seongwon JIN (Jeonbuk National University), Myeongseok GO, Dowon KIM, Jaehyuk LIM, Youngu LEE</p>

Poster Session (Free passage)

Poster No. (Registration No.)	DAY1 Wednesday 7th December 17:10 - 18:20
PS-1 (C10016)	Fracture Behavior of Unidirectional Carbon Fiber Reinforced Composites under Biaxial Tension ○Kousuke SANAI (Yamaguchi University), Sho NAKASAKI, Shoma NAKAMURA, Yoh KATAOKA, Arnaud MACADRE, Koichi GODA
PS-2 (C10033)	Molecular Dynamics Simulation on Thermodynamic Properties of Thermoplastic Epoxy Resin-Based Composites ○Mengying LI (University of Fukui), Xiao-Wen LEI
PS-3 (C10041)	Effect of Fusion Temperature on the Lap-Shear Strength of Fusion Bonded Joint of Titanium Alloy Using Thermoplastic Film as Fusion Bonding Layer ○Kenya HIRAKOSE (Shizuoka University), Yoshinobu SHIMAMURA, Tomoyuki FUJII
PS-4 (C10042)	Methodology for Predicting Stress Corrosion Cracking Life Using Stochastic Differential Equation ○Yuki TAKEICHI (Shizuoka University), Tomoyuki FUJII, Yoshinobu SHIMAMURA
PS-5 (C10043)	Growth Characteristics of Stress Corrosion Cracking of High-Strength Aluminum Alloy in NaCl Solution ○Daiki ITO (Shizuoka University), Tomoyuki FUJII, Yoshinobu SHIMAMURA
PS-6 (C10049)	Strength Characterization of Micro-Sized Unidirectional CFRPs under Tension-Torsion Loading ○Mikiyasu HASHIMOTO (Yamaguchi University), Siti FARHANAH, Koichi GODA, Arnaud MACADRE, Yoshihiro SAWADA
PS-7 (C10054)	Effect on Hydrogen on the Tensile Behavior of a Nitrogen-Added and Micronized Metastable Austenitic Stainless Steel ○Ryo OKAMOTO (Yamaguchi University), Kouki YAMAMOTO, Koichi GODA, Arnaud MACADRE
PS-8 (C10068)	Investigation of the Light Influences on Dislocation Behavior of Wurtzite ZnO by Photoindentation ○Hiroto OGURI (Osaka University), Yan LI, Eita TOCHIGI, Xufei FANG, Kenichi TANIGAKI, Yu OSHIMA, Katsuyuki MATSUNAGA
PS-9 (C10069)	Influence of Element Composition on Grain Boundary Migration in High-Entropy Alloys ○Kohei SHIOTANI (Kanazawa University), Tomoaki NIYAMA, Tomotsugu SHIMOKAWA
PS-10 (C10076)	The Effect of Hydrogen on the Dislocation Density of FCC Structure Pure Copper ○Daichi HAYASHI (Yamaguchi University), Kairi KONISHI, Koichi GODA, Arnaud MACADRE
PS-11 (C10082)	Structural Changes in Barium Titanate Crystals during Deformation at Room Temperature ○Takeshi SHIBAMOTO (Osaka University), Yan LI, Kenichi TANIGAKI, Keitaro HORIKAWA, Atsutomo NAKAMURA

PS-12 (C10100)	Thickness Effect on Fatigue Crack Propagation Properties of Cu-Sn-P Copper Alloy Strips ○Amika TSUCHIYA (Keio University), Natsuhiro MITA, Masaki OMIYA
PS-13 (C10104)	Mode II Interlaminar Fracture Toughness Evaluation of FDM-Type 3D Printed CFRTP Laminates ○Tomoya HAGIWARA (Chiba Institute of Technology), Kensuke SAKASHITA, Yukinari NATSUMI, Kohji SUZUKI
PS-14 (C10105)	Equivalent Circuit Modeling and Experimental Verification for Prediction of Battery Thermal Behavior ○Soobin LEE (Yeungnam University), Kisoo YOO
PS-15 (C10107)	Reliability of Uniform Stress Measurement of Carbon Steel by Hole Drilling Method ○Yuze WU (Kumamoto University), Tomoya YAMAGUCHI, Masatoshi KURODA, Masayuk KAMAYA
PS-16 (C10110)	EBSD Data Analysis of Stainless Steels Focused on Grain Boundaries Using MATLAB Toolbox of MTEX ○Zhihong DAI (Kumamoto University), Yujie XU, Masatoshi KURODA
PS-17 (C10117)	Analysis of Battery Degradation Mechanism According to Various Operating Conditions Applying EIS and ICA ○Yunjeong NAM (Yeungnam University)
PS-18 (C10134)	In-Situ Construction of Tin-Nickel MOFs on Nickel Foam for Energy Storage Devices ○Jie ZENG (Yeungnam University), Surya Veerendra VATTIKUTI, Jaesool SHIM
PS-19 (C10139)	Fabrication of Bone Organoids Using 3D Porous Collagen Scaffold ○Ayaka MORISAKI (Kyushu Institute of Information Sciences), Takaaki ARAHIRA
PS-20 (C10143)	Development of Novel Bioink for Bone Regeneration and Application to Artificial Bone Tissue ○Kurumi TAKIMOTO (Kyushu Institute of Information Sciences), Takaaki ARAHIRA, Mitsugu TODO
PS-21 (C10148)	A Facile Approach for Large Quantity Fabrication of rGO Quantum Dots ○Won Young JANG (Yeungnam University), Jaewon CHOI, Ravindranadh KOUTAVARAPU, Jaesool SHIM
PS-22 (C10161)	Evaluation of Seismic Hydrodynamic Pressure Conditions in Agricultural Pipeline System by Constant Monitoring ○Taiki HAGIWARA (Civil Engineering Research Institute for Cold Region), Takashi OHKUBO, Hitoshi NAGUMO
PS-23 (C10177)	Resistance Wilding of Thermoplastic Carbon Fiber Reinforced Composites with Carbon Nanotube ○S SANO (Shizuoka University), Y SHIMAMURA, T FUJII, Y INOUE
PS-24 (C10113)	Improvement of Loosening in Bolted Joints for Aluminum Profile Structure ○Masaki WATANABE (Kagawa University), Nobuyuki OSADA, Hiroaki MATSUMOTO, Shinya MATSUDA
PS-25 (C10167)	A Model-Based Magnetic Hysteresis Analysis for an Electro-Permanent Magnet Kim NGUYEN (Chonnam National University), Hansol LEE, ○Changsei

PS-26 (C10176)	Profile Monitoring for Electric-Vehicle Battery Images Using Stochastic Modeling ○Munwon LIM (Hanyang University), J JANG, J BAE
PS-27 (C10178)	A Study on the Regression Analysis Method for Predicting the Automobile Door Latch Using Minimum Extreme Value Distribution ○J SON (Yeungnam University), J SHIM, Y BAE, W KIM, J KIM, C KIM
PS-28 (Cancel)	
PS-29 (C10132)	Interface Engineering of Binder-Free Electrocatalysts for Hydrogen/Oxygen Evolution Reactions Niranjnmurthi LINGAPPAN (Chonnam National University), ○Wonoh LEE
PS-30 (C10170)	Prediction of Negligible Creep Curves for Gr. 91 and Type 316L(N) Stainless Steels ○Woo Gon KIM (Korea Energy Technology Group), Youngjin NOH, Seonhwa KIM, Seon Jin KIM