Time Table

Start	Duration	Room A	Room B	Room C	Room D	Room E	Room F		
							Poster	Exibition	Break/Lunch
Monday, November 25									
9:00	0:30	Opening Ceremony							
9:30	0:10								
9:40	0:20	A101	A201	A301	B101	C201			
10:00	0:20	A102	A202	A302	B102	C202			
10:20	0:20	A103	A203	A303	B103	C203			
10:40	0:20	A104	A204	A304	B104	C204			
11:00	0:20								Break
11:20	0:40	P001							
12:00	1:00								Lunch
13:00	0:20	A105	A205	A305	B105K	C205			
13:20	0:20	A106	A206	A306		C206			
13:40	0:20	A107	A207	A307	B106	C207			
14:00	0:20	A108	A208	A308	B107	C208			
14:20	0:20	A109	A209	A309	B108	C209			
14:40	0:20								Break
15:00	0:20	A110	A210	A310	B109	C210			
15:20	0:20	A111	A211	A311	B110	C211			
15:40	0:20	A112	A212	A312	B111	C212			
16:00	0:20	A113	A213	A313		C213			
16:20	0:20	A114	A214	A317		C214			
Tuesday, November 26									
9:00	0:20	A115		A315					
9:20	0:20	A116	A215	A316	C301				
9:40	0:20	A117	A216	A314	C302				
10:00	0:20	A118	A217	A318	C303			Exhibition	
10:20	0:20	A119	A218	A319	C304				
10:40	0:20	A120	A219	A320	C305				
11:00	0:20								Break
11:20	0:40	P002							
12:00	1:00								Lunch
13:00	0:40						Poster		
13:40	0:20	A121	A220	A321	B201	D301			
14:00	0:20	A122	A221	A322	B202	D302			
14:20	0:20	A123	A222	A323	B203	D303			
14:40	0:20	A124	A223	A324	B204	D304			
15:00	0:20								Break
15:20	0:20	A125	A224	A325	B205	D305			
15:40	0:20	A126	A225	A326	B206	D306			
16:00	0:20	A127	A226	A327	B207	D307			
16:20	0:20	A128	A227	A328	B208	D308			
Wednesday, November 27									
9:00	0:20			A334					
9:20	0:20	A129	A228	A329					
9:40	0:20	A130	A229	A330	D101				
10:00	0:20	A131	A230	A331	D102			Exhibition	
10:20	0:20	A132	A231	A332	D103				
10:40	0:20	A133	A232	A333	D104				
11:00	0:20								Break
11:20	0:40	P003							
12:00	1:00								Lunch
13:00	0:40						Poster		
13:40	0:20	B301	B209	D309	D105	E101			
14:00	0:20	B302	B210	D310	D106	E102			
14:20	0:20	B304	B211	D311	D107	E103			
14:40	0:20		B212	D312	D108	E104			
15:00	0:20								Break
15:20	0:20	B305	B213	D313	D109	E105			
15:40	0:20	B306	B214	D314	D110	E106			
16:00	0:20	B307	B215	D315	D111	E107			
16:20	0:20		B216	D316	D112	E108			
16:40	0:20								
17:00	0:40			JSME MMD					

Time Table

Start	Duration	Room A	Room B	Room C	Room D	Room E	Room F		
							Poster	Exibition	Break/Lunch
Thursday, November 28									
9:00	0:20	D201	E201						
9:20	0:20	D202	E202		B303				
9:40	0:20	D203	E203	C109	B308	E109			
10:00	0:20	D204	E204	C101	B309	E110		Exhibition	
10:20	0:20	D205	E205	C102	B310	E111			
10:40	0:20	D206	E206	C104	B311	E112			
11:00	0:20								Break
11:20	0:40	P004							
12:00	1:00								Lunch
13:00	0:40						Poster		
13:40	0:20	D207	E207	C105	B312	E113			
14:00	0:20	D208	E208	C106	B313	E114			
14:20	0:20	D209	E209	C107	B314	E115			
14:40	0:20	D210	E210	C108	B315	E116			
15:00	0:20								Break
15:20	0:20	D211	E211	C103					
15:40	0:20	D212	E212	C110					
16:00	0:20	D213	E213	C111					
16:20	0:20	D214	E214	C112					
Friday, November 29									
9:00	0:20	D215	E215	C113					
9:20	0:20	D216	E216	C114					
9:40	0:20	D217	E217	C115					
10:00	0:20								Break
10:20	0:20	D218	E218	C116					
10:40	0:20	D219	E219	C117					
11:00	0:20	D220	E220	C118					
11:20	0:10								
11:30	0:30	Closing Ceremony							

Poster Sessions

Tuesday, November 26

A151P A152P A153P A154P A155P A156P A157P A158P A159P A160P A161P
A251P A252P
A351P

Wednesday, November 27

B251P B252P B253P
B351P B352P
C151P C152P
C251P C252P
C351P C352P

Thursday, November 28

D151P D152P D153P
D251P D252P D253P
D351P D352P
E151P E152P E153P
E251P

Monday, November 25, Room A

9:00–9:30
Opening Ceremony

9:40–11:00
A1. Advances in Fracture and Fatigue: Mechanics of Fatigue and Fracture
Chair: Yoshinobu SHIMAMURA, Shizuoka University

A101 Effect of Weld Pitch on Fatigue Strength of Laser Spot Welded Joints of High Tensile Strength Steel Plate as Base Metal
Shintaro SHIBATA, Hiroshima Institute of Technology
Tomohito TSUDO, Delta Kogyo, Co., Ltd.
Tadashi KADO, Hiroshima Prefectural Technology Research Institute
Yuki OGAWA, Hiroshima University
Hiroyuki AKEBONO, Hiroshima University
Atsushi SUGETA, Hiroshima University

A102 Elucidation and Quantitative Evaluation of the Effect of LME Cracking on Fatigue Properties of Resistance Spot Welded Joints
Chikashi SATO, Hiroshima University, Japan
Shinsuke KOMINE, JFE Steel Corporation
Katsutoshi TAKASHIMA, JFE Steel Corporation
Keiji UEDA, JFE Steel Corporation
Atsushi SUGETA, Hiroshima University
Hiroyuki AKEBONO, Hiroshima University
Yuki OGAWA, Hiroshima University

A103 Fatigue limit estimation of dissimilar FSW joints by dissipated energy
Tenyu HIDAKI, Kobe University
Miu HAYASHI, Hiroshima University
Yuki OGAWA, Hiroshima University
Daiki SHIOZAWA, Kobe University
Takahide SAKAGAMI, Kobe University

A104 Evaluation of Fatigue Properties of CFRP Joints Using High Stiffness Urethane Adhesive for Automotive Structural Parts
Masayuki OSADA, Hiroshima University
Toshiaki NAKAMARU, Nissan Motor Co., Ltd.
Yuki OGAWA, Hiroshima University
Hiroyuki AKEBONO, Hiroshima University
Atsushi SUGETA, Hiroshima University

11:20–12:00
Plenary Lecture
Chair: Satoshi IZUMI, The University of Tokyo

P001 Elasticity-based prediction of inhomogeneous deformation of polycrystalline metals
Naoya TADA, Okayama University

13:00–14:40
A1. Advances in Fracture and Fatigue: Mechanics of Fatigue and Fracture
Chair: Hiroyuki AKEBONO, Hiroshima University

A105 Impact of Nitrogen-Assisted Laser Cutting on Fatigue Properties of Electrical Steel Sheet
Lingyun PENG, Kyushu University
Ryutaro KAWAGUCHI, Mitsubishi Electric Corporation
Shigeru HAMADA, Kyushu University

A106 Influence of Fabrication Strain on Low-Cycle Fatigue of Pipe Fittings
Kenichi SHIBUKUWA, IHI Corporation

A107 Mechanism of surface roughness changes under low-cycle fatigue loading for single-crystal Fe/Fe-Si
Mamoru HAYAKAWA, Nippon Steel Corporation
Atsushi TAKAYAMA, Nippon Steel Corporation

Takafumi AMINO, Nippon Steel Corporation
Eisuke NAKAYAMA, Nippon Steel Corporation
Taizo MAKINO, Nippon Steel Corporation

A108 Investigation of the Effect of Surface Shape Variation on Low Cycle Fatigue Life using Crystal Plasticity FEM
Shota HASUNUMA, Aoyama Gakuin University
Tomoyuki HAYASE, Aoyama Gakuin University

A109 Deformation microstructure and fatigue property of new weldable bidirectional-TRIP steel
Fumiyoshi YOSHINAKA, National Institute for Materials Science
Takahiro SAWAGUCHI, National Institute for Materials Science
Susumu TAKAMORI, National Institute for Materials Science
Satoshi EMURA, National Institute for Materials Science
Tomoya NAGIRA, National Institute for Materials Science
Yasuhiko INOUE, Takenaka Corporation

15:00–16:40
A1. Advances in Fracture and Fatigue: Mechanics of Fatigue and Fracture
Chair: Daiki SHIOZAWA, Kobe University

A110 Microsecond-Level Treatment: Enhancing Ductility in Nickel-Based Superalloys through High-Density Pulsed Electric Current treatment
Xinming YAN, Nagoya University
Shaojie GU, Nagoya University
Yasuhiro KIMURA, Nagoya University
Yang JU, Zhejiang University
Yuhki TOKU, Nagoya University

A111 Improvement of Rotating Bending Fatigue Properties of Steel by Hybrid Surface Modification Combining Sulfurizing and Fine Particle Peening
Shotaro NOGUCHI, Shizuoka University
Kiyotaka MITAKE, Yamaha Motor Co., Ltd.
Shinichiro KUROSAKA, Yamaha Motor Co., Ltd.
Kosuke DOI, Yamaha Motor Co., Ltd.
Hisashi HARADA, Yamaha Motor Co., Ltd.
Shoichi KIKUCHI, Shizuoka University

A112 Surface-core model to explain the factors causing residual stress change under tensile and compressive loadings
Tomofumi AOKI, Keio University
Jun KOMOTORI, Keio University

A113 Fatigue properties of extruded magnesium alloy with surface modification using cyclic compressive loading
Nao FUJIMURA, Hokkaido University
Takashi NAKAMURA, Hokkaido University
Kosuke TAKAHASHI, Hokkaido University
Tatsuki WAJIMA, HyBridge Co. Ltd.

A114 Axial loading fatigue property of solid fine wires of eutectoid steel
Tsubasa NAKASHIMA, Shizuoka University
Yoshinobu SHIMAMURA, Shizuoka University / Waseda University
Kazutaka TOKUTOMI, Bridgestone Corporation
Keisuke KAWASHIMA, Bridgestone Corporation
Takahisa SHIZUKU, Bridgestone Corporation
Tomoyuki FUJII, Shizuoka University

Monday, November 25, Room B

9:40–11:00
A2. Advances in Fracture and Fatigue: Experimental Mechanics
Chair: Yuichi ONO, Tottori University

A201 Influence of Temperature and Hydrostatic Pressure on Creep Behavior in Polymer Materials by MD Simulation
Shihong YUAN, Saitama University
Takenobu SAKAI, Saitama University

A202 Evaluation of Shape Recovery Behavior of 3D Printed Shape Memory Polymer Using Digital Image Correlation
Yuki UCHIUMI, Aoyama Gakuin University
Keisuke IIZUKA, Aoyama Gakuin University
Satoru YONEYAMA, Aoyama Gakuin University

A203 Development of 20mm-sized miniature cruciform specimen and testing machine for biaxial creep investigation
Toru MIYAKE, Ritsumeikan University
Noritake HIYOSHI, University of Fukui
Lei HE, Ritsumeikan University
Takamoto ITOH, Ritsumeikan University
Takashi NOZAWA, National Institutes for Quantum Science and Technology

A204 Development of Automated Laser Induced Particle Impact Test (LIPIT) for Surface Treatment of Thin Plates
Ryo ICHIKAWA, Chuo University
Miki KAJIHARA, Chuo University
Shunya KATO, Chuo University
Tatsuya AMAMIYA, Chuo University
Akio YONEZU, Chuo University

13:00–14:40
A2. Advances in Fracture and Fatigue: Experimental Mechanics
Chair: Motoharu FUJIGAKI, University of Fukui

A205 Growth life prediction of surface crack for 7075 Al alloy under nonproportional cyclic loading
Yuichi ONO, Tottori University
Kaito WATANABE, Tottori University
Nao KANEKO, Tottori University

A206 Suppression of Crack Initiation and Propagation in Nickel-Based Superalloys IN718 Via High-Density Pulsed Electric Current
Shaojie GU, Nagoya University
Xinming YAN, Nagoya University
Chang LIU, Nagoya University
Yasuhiro KIMURA, Nagoya University
Yang JU, Zhejiang University
Yuhki TOKU, Nagoya University

A207 Cancelled

A208 Evaluation of Micro Crack Initiation and Propagation Behavior in Ultra High Strength Steel with Artificial Defects
Jui YAMAMURA, Tohoku University
Hiroki SAITO, Tohoku University
Yuji ICHIKAWA, Tohoku University
Kazuhiro OGAWA, Tohoku University
Naoki YAMAGUCHI, JFE Steel
Tsuyoshi SHIOZAKI, JFE Steel

A209 Evaluation of creep-fatigue damage for F82H steel under multiaxial non-proportional loading in high cycle fatigue region
Ryuma NISHIZAWA, Ritsumeikan University
Lei HE, Ritsumeikan University
Takamoto ITOH, Ritsumeikan University

Noritake HIYOSHI, University of Fukui
Taichiro KATOH, National Institutes for Quantum Science and Technology
Takashi NOZAWA, National Institutes for Quantum Science and Technology

15:00–16:40
A2. Advances in Fracture and Fatigue: Experimental Mechanics
Chair: Takamoto ITOH, Ritsumeikan University

A210 Optimization of Heat Treatment Processes to Enhance Wear Resistance of Electron Beam Melted Ti-6Al-4V Alloy
Li HE, Kyoto Institute of Technology
Shogo TAKESUE, Kyoto Institute of Technology
Yoshitaka MISAKA, Neturen Co., Ltd.
Tatsuro MORITA, Kyoto Institute of Technology

A211 Evaluation of Strength Characteristics for Non-Combustible Mg Alloy Products Fabricated by Laser Powder Bed Fusion in As-Built Condition
Taeseul PARK, Kyushu University
Bryan Steve PROANO SARAUZ, Kyushu University
Shigeru HAMADA, Kyushu University

A212 Observation of Deep Double Edge Notched Tensile Test Behavior of Short Glass Fiber Reinforced Polypropylene Composites at Various Temperature
Sang Min LEE, Korea University
Ilhyun KIM, Korea University
Byoung-Ho CHOI, Korea University

A213 The role of dislocation on fatigue strength of cold-drawn wire
Toshimi TERAHATA, Nippon Steel Corporation
Toshihiko TESHIMA, Nippon Steel Corporation
Takahisa SUZUKI, Nippon Steel Corporation

A214 Evaluation of the effect of δ-phase precipitates on high-temperature creep damage of GH4169 superalloy based on microstructural observations
Jiashu LIU, Tohoku University
Ken SUZUKI, Tohoku University
Hideo MIURA, Shimane University

Monday, November 25, Room C

9:40–11:00

A3. Advances in Fracture and Fatigue: Theoretical Modeling and Numerical Analysis

Chair: Takashi MATSUNO, Tottori University

A301 Theoretical approaches to describe dislocation behavior in nano-micro fatigue
Yoshitaka UMENO, The University of Tokyo
Hiroyuki SHIMA, Yamanashi University
Emi KAWAI, The University of Tokyo
Atsushi KUBO, Japan Atomic Energy Agency
Takashi SUMIGAWA, Kyoto University

A302 Molecular Dynamics simulation study of diffusion-ionization interaction in local strain-induced cyclic wear behavior of Ti in contact with Hap
Dat Dinh PHAM, Nagaoka University of Technology
Yuichi OTSUKA, Nagaoka University of Technology
Yukio MIYASHITA, Nagaoka University of Technology

A303 Molecular dynamics simulation of nanowire under cyclic loading: Effect of stacking fault energy
Emi KAWAI, The University of Tokyo
Chen CHEN, The University of Tokyo / Rakuten Group, Inc.
Atsushi KUBO, The University of Tokyo / Japan Atomic Energy Agency
Yoshitaka UMENO, The University of Tokyo

A304 Molecular dynamics simulations for explaining high toughness and ductility mechanisms in polyrotaxane glass
Likun JIA, The University of Tokyo
Kazuaki KATO, The University of Tokyo
Kazuki SHIBANUMA, The University of Tokyo

13:00–14:40

A3. Advances in Fracture and Fatigue: Theoretical Modeling and Numerical Analysis

Chair: Kazuki SHIBANUMA, The University of Tokyo

A305 Creep and stress relaxation behavior of cracked CFRP cross-ply laminates
Keiji OGI, Ehime University

A306 Interlaminar fatigue life prediction method for CFRP based on two-scale analysis and application to fan blade dovetails of jet engines
Eiichiro MORI, University of Tsukuba
Tetsuya MATSUDA, University of Tsukuba
Naoki MORITA, University of Tsukuba
Masahiro HOJO, Japan Aerospace Exploration Agency
Nobuhiro YOSHIKAWA, The University of Tokyo

A307 Assimilation of finite element simulation through U-net deep learning on 3-D deformed microstructure images of dual phase steel
Takashi MATSUNO, Tottori University
Yodai FUKUDA, Tottori University
Naoko OKUMURA, Tottori University
Kazuyuki SHIMIZU, Tottori University
Hiroto SHOJI, Osaka University
Mitsuru OHATA, Osaka University
Norio YAMASHITA, Riken
Hideo YOKOTA, Riken
Tetsuro MURAI, Advanced Simulation Technology Mechanics R&D Co., Ltd

A308 Bayesian estimation of material properties from indentation test results using the replica exchange Monte Carlo method
Tomoki SAKAI, Ibaraki University
Takashi WAKUI, Japan Atomic Energy Agency
Kotaro MORI, Ibaraki University
Rui KAMAIYAMA, Hitotsubashi University
Hiroyuki KUMAZOE, Hitotsubashi University
Yoh-ichi MOTOTAKE, Hitotsubashi University

Masatoshi FUTAKAWA, Japan Atomic Energy Agency

A309 Application of extended subloading surface model to elastoplastic deformation behavior of spring steels
Tomoyasu ISHIZU, Yokohama National University
Shingo OZAKI, Yokohama National University

15:00–16:40
A3. Advances in Fracture and Fatigue: Theoretical Modeling and Numerical Analysis
Chair: Emi KAWAI, The University of Tokyo

A310 Establishment of a fatigue life prediction framework for ferritic steels based on a multiscale modeling strategy for simulating crack growth
Kazuki SHIBANUMA, The University of Tokyo

A311 Transitional behavior of fatigue crack growth from small to long crack analysed by the multiscale model
Qingzhi YAO, The University of Tokyo
Jun SUZUKI, The University of Tokyo
Kazuki SHIBANUMA, The University of Tokyo

A312 Compliance of structures and specimens with fatigue cracks
Andrei KOTOUSOV, The University of Adelaide
James VIDLER, The University of Adelaide
Aditya KHANNA, The University of Queensland

A313 Predicting fatigue behaviour of welded joints considering material and structural inhomogeneity based on multiscale model simulations
Hongchang ZHOU, Osaka University
Masao KINEFUCHI, Kobe Steel
Yasuhito TAKASHIMA, Kobe Steel
Kazuki SHIBANUMA, The University of Tokyo

A317 S-version FEM-based strategy for predicting high-speed crack propagation/arrest behaviour in 3D structures
Tianyu HE, The University of Tokyo
Fumihito FURUHASHI, The University of Tokyo
Naoki MORITA, University of Tsukuba
Naoto MITSUME, University of Tsukuba
Kazuki SHIBANUMA, The University of Tokyo

Monday, November 25, Room D

9:40–11:00

B1. Energy and Environment: Industrial Plants and Components (Special session with JSME–Power & Energy Systems Division)

Chair: Masayuki KAMAYA, Institute of Nuclear Safety System, Inc.

B101 Development of equations for the stress intensity factor of rectangular surface flaws
Mizuho SHIDAWARA, Tokyo University of Science
Yuki OKADA, Tokyo University of Science
Hiroshi OKADA, Tokyo University of Science
Masayuki KAMAYA, Institute of Nuclear Safety System

B102 Research of Stress Intensity Factor Equation for APR-1400 Reactor Pressure Vessel Nozzle
HyunChul LEE, Korea Reactor Integrity Surveillance Technology Inc. (KRIST) / Sungkyunkwan University
YoungJae MAENG, Korea Reactor Integrity Surveillance Technology Inc. (KRIST)
KyungSik KIM, Korea Reactor Integrity Surveillance Technology Inc. (KRIST)

B103 Stress corrosion cracking growth behavior of Alloy 182 under K decreasing field in high temperature water
Xiangyu ZHONG, Tohoku University
Yunlong WU, Tohoku University
Tetsuo SHOJI, Tohoku University
Yutaka WATANABE, Tohoku University
Yasuhiro SAITO, Tohoku Electric Power Co. Inc.
Tetsuhiko INAGAKI, Chubu Electric Power Co. Inc.
Hideki YUYA, Chubu Electric Power Co. Inc.

B104 Influence of Loading Sequence on Crack Growth Evaluation Due to Superimposed SCC and Fatigue
Naoki MIURA, Central Research Institute of Electric Power Industry
Masaki NAGAI, Central Research Institute of Electric Power Industry
Tomoki SHINKO, Central Research Institute of Electric Power Industry

13:00–14:40

B1. Energy and Environment: Industrial Plants and Components (Special session with JSME–Power & Energy Systems Division)

Chair: Kazuya TSUTSUMI, Mitsubishi Heavy Industries

B105K Interaction between thermal-hydraulic phenomena and structural integrity of plant components
Tomio OKAWA, The University of Electro-Communications

B106 Influence of temperature and primary stress on creep damage in HTGR components
Yuichi HIROSE, Mitsubishi Heavy Industries
Toshiyuki HIRANO, Mitsubishi Heavy Industries
Takumi TOKIYOSHI, Mitsubishi Heavy Industries
Toshihide IGARI, Mitsubishi Heavy Industries
Takashi HONDA, Mitsubishi Heavy Industries
Hiroto TANISHIMA, Mitsubishi Heavy Industries

B107 Development of AI-Based Method for Predicting Potential Damage Modes Using a Database of Past Damage Cases
Muhammad Rafiuddin RASYID, Institut Teknologi Bandung / Institute of Science Tokyo (Tokyo Institute of Technology)
Hiroyasu MATSUDA, Best Materia
Shigemitsu KIHARA, Best Materia
Yoshihiro MIZUTANI, Institute of Science Tokyo (Tokyo Institute of Technology)

B108 Creep Induced Nonlinear Acoustics in a Ti-Al Alloy
Toshihiro OHTANI, Shonan Institute of Technology
Yutaka ISHII, Shonan Institute of Technology
Toshihito OHMI, Shonan Institute of Technology
Noritake HIYOSHI, University of Fukui
Yasuhiro YAMAZAKI, Chiba University
Yutaro OHTA, IHI

15:00–16:00

B1. Energy and Environment: Industrial Plants and Components (Special session with JSME–Power & Energy Systems Division)

Chair: Naoki MIURA, Central Research Institute of Electric Power Industry

B109 Specimen Size Effect Correction on J-R Curve Using Bending-Modified Plastic Constraint Parameter
Tomoki SHINKO, Central Research Institute of Electric Power Industry
Naoki MIURA, Central Research Institute of Electric Power Industry
Masaki NAGAI, Central Research Institute of Electric Power Industry

B110 Study on application of GTN model to fracture analysis of actual structures
Kenji YASHIRODAI, Hitachi, Ltd.
Motoki NAKANE, Hitachi-GE Nuclear Energy, Ltd.
Yusuke AOKI, Hitachi-GE Nuclear Energy, Ltd.

B111 Fatigue life of elbow pipe for in-plane bending
Masayuki KAMAYA, Institute of Nuclear Safety System, Inc.

Monday, November 25, Room E

9:40–11:00
C2. Composites, Joints and Coatings: Joints and Adhesives
Chair: Kosuke TAKAHASHI, Hokkaido University

C201 Development of Strength Prediction Technique based on Machine Learning for Multi Materials Adhesive Bonding using Various Adhesives
Yusuke ASARI, Hitachi, Ltd.
Tsuyoshi KONDO, Hitachi, Ltd.
Tomohisa SUZUKI, Hitachi, Ltd.
Mutsumi NAGATA, Hitachi High-Tech. Corp.
Shintaro TAKEDA, Hitachi High-Tech. Corp.

C202 Molecular Dynamics Analysis of Dominant Factors of Adhesion Strength of Cu/Epoxy Molding Compound (EMC) Interface
Tatsuya OKAZAKI, Tohoku University
Ken SUZUKI, Tohoku University
Hideo MIURA, Shimane University

C203 Estimation of Singular Stress Field for an Interface Crack in Orthotropic Dissimilar Plates by using the results for Isotropic Dissimilar plates
Kazuhiro ODA, Oita University
Nao-Aki NODA, Kyushu Institute of Technology

C204 Detection and Evaluation of Discontinuities Using AI in TOFD Method
Yuma SATO, Institute of Science Tokyo (Tokyo Institute of Technology)
Yoshihiro MIZUTANI, Institute of Science Tokyo (Tokyo Institute of Technology)

13:00–14:40
C2. Composites, Joints and Coatings: Joints and Adhesives
Chair: Kazuhiro ODA, Oita University

C205 Validation of strength assessment method for adhesive joints and influence of adherend plate thickness
Sohei KANNA, IHI Corporation
Junichi KITAGAWA, IHI Corporation
Koji ARAKAWA, IHI Corporation

C206 Variation of adhesive strength prescribed by JIS depending on the adhesive geometries
Rei TAKAKI, Nippon Bunri University
Nao-Aki NODA, Kyushu Institute of Technology
Yasuaki SUZUKI, Suzuki Adhesion Institute of Technology
Kazuhiro ODA, Oita University

C207 Aalysis of intensity of singular stress field at the stepped-lap joint to improve adhesive strength
Nao-Aki NODA, Kyushu Institute of Technology
Rei TAKAKI, Nippon Bunri University

C208 Sngle-lap joints by composite bondline of adhesive and double-sided tape
Kosuke TAKAHASHI, Hokkaido University
Kounosuke SHIMAMURA, Hokkaido University
Takashi NAKAMURA, Hokkaido University

C209 Delopment and Evaluation of Crack Arrester and Crack Detection System for CFRP Adhesive Joints
Koshi ORINO, Institute of Science Tokyo (Tokyo Institute of Technology)
Tetsuo YASUOKA, Japan Aerospace Exploration Agency
Rio HIRAKAWA, National Institute of Advanced Industrial Science and Technology
Yoshihiro MIZUTANI, Institute of Science Tokyo (Tokyo Institute of Technology)

15:00–16:40
C2. Composites, Joints and Coatings: Joints and Adhesives
Chair: Nao-Aki NODA, Kyushu Institute of Technology

C210 Eect of interaction effect due to additional notches on adhesive strength of butt joints
Kazuki IDE, Oita University

Kazuhiro ODA, Oita University
Nao-Aki NODA, Kyusyu Institute of Technology

C211 Stiffness evaluation and numerical simulation for magnesium alloy bolted joints
Tristan Samuel BRITTON, Tokyo City University
Keisuke INOUE, Tokyo City University
Yoshinao KISHIMOTO, Tokyo City University
Yukiyoshi KOBAYASHI, Tokyo City University
Shogo ISOBE, Tokyo City University

C212 Development of a master curve for long-term axial force relaxation in a bolt fastening CFRP laminate
Hiroshi SAITO, Kanazawa Institute of Technology
Shunya TAMURA, Kanazawa Institute of Technology

C213 Visualization of damage processes at the fiber/cement interface in fiber pull-out test
Yuichiro HATTORI, Hokkaido University
Riki NAGAO, SHIMIZU CORPORATION
Kosuke TAKAHASHI, Hokkaido University
Takashi NAKAMURA, Hokkaido University

C214 Effect of temperature and microstructure on fretting fatigue behavior of Ti-Al intermetallic in contact with Ni based superalloy
Nan ZHANG, Nagaoka University of Technology
Gaurav RAKHECHA, Nagaoka University of Technology
Yukio MIYASHITA, Nagaoka University of Technology

Tuesday, November 26, Room A

9:00–11:00
A1. Advances in Fracture and Fatigue: Mechanics of Fatigue and Fracture
Chair: Yuki OGAWA, Hiroshima University

A115 Effects of surface conditions and internal defects on plane bending fatigue strength in maraging steels manufactured by Powder Bed Fusion-Laser beam
Ryosuke UJIIE, Nagaoka University of Technology
Yukio MIYASHITA, Nagaoka University of Technology
Nan ZHANG, Nagaoka University of Technology

A116 Relationship of scan strategy on microstructure and residual stress of martensitic stainless steel SUS420J2 fabricated by laser powder bed fusion
Takeaki TAKA, Kyoto Institute of Technology / TOWA corporation
Ryosuke TAKUBO, Kyoto Institute of Technology
Shogo TAKESUE, Kyoto Institute of Technology
Tatsuro MORITA, Kyoto Institute of Technology

A117 The effect of heat treatment on the microstructure and creep properties of nickel-based superalloy UNS N07001 built by electron beam melting
Ryo TAKAKUWA, Ebara Corporation
Yuante CHIN, Ebara Corporation
Hiroaki NAKAMOTO, Ebara Corporation
Manabu NOGUCHI, Ebara Corporation
Motoki SAKAGUCHI, Institute of Science Tokyo (Tokyo Institute of Technology)
Hirotsugu INOUE, Institute of Science Tokyo (Tokyo Institute of Technology)

A118 Effect of high temperature tensile dwell on fatigue crack propagation in Alloy 718
Zhiqi CHEN, Institute of Science Tokyo (Tokyo Institute of Technology)
Yuya UEMURA, Institute of Science Tokyo (Tokyo Institute of Technology)
Shiyu SUZUKI, Japan Aerospace Exploration Agency
Yu KUROKAWA, Institute of Science Tokyo (Tokyo Institute of Technology)
Motoki SAKAGUCHI, Institute of Science Tokyo (Tokyo Institute of Technology)

A119 Molecular Dynamics Analysis of Strength Degradation of Grain Boundaries with δ-Phase Precipitates in Ni-based Superalloy GH4169 under Creep Loading at Elevated Temperatures
Takuto KUDO, Tohoku University
Ken SUZUKI, Tohoku University
Hideo MIURA, Shimane University

A120 Acceleration Mechanism of Intergranular Cracking of Stainless Steel SUS316LN under Creep Loading at Elevated Temperature
Ayane YASUMURA, Tohoku University
Ken SUZUKI, Tohoku University
Hideo MIURA, Shimane University

11:20–12:00
Plenary Lecture
Chair: Ling YIN, The University of Adelaide

P002 Cyclic Plastic Deformation and Damage Initiation in Railway Rails and Rail-Welds
Wenyi YAN, Monash University

13:40–15:00
A1. Advances in Fracture and Fatigue: Mechanics of Fatigue and Fracture
Chair: Motoki SAKAGUCHI, Institute of Science Tokyo (Tokyo Institute of Technology)

A121 Creep behaviour analysis of TV back cover at low temperature
Nak-Kyun CHO, Seoul National University of Science and Technology (SeoulTech)
Jinmyeong HUH, Seoul National University of Science and Technology (SeoulTech)
Jun Beom KIM, Seoul National University of Science and Technology (SeoulTech)
Heungsoo PARK, Seoul National University of Science and Technology (SeoulTech)
Woohyuk CHOI, LG Electronics
Yeyong KIM, LG Electronics

Sangmin OH, LG Electronics
Donguk KIM, LG Electronics
Jeongyoon PARK, LG Electronics
Yunseong JEONG, LG Electronics
Daehee PARK, LG Electronics

A122 Hydrogen embrittlement properties of high-strength steel under high-pressure hydrogen gas environment
Naoto KAWASAKI, Kyushu University
Naoto IKEDA, Kyushu University
Tatsuya OSUMI, Kyushu University
Yasushi SHIMIZU, Kyushu University
Hisao MATSUNAGA, Kyushu University
Shigeru HAMADA, Kyushu University

A123 Fatigue Life Assessment of Liquid Hydrogen Storage Tanks for Small UAVs under Complex Loading Conditions
Jinmyeong HEO, Seoul National University of Science and Technology (SeoulTech)
Nak-Kyun CHO, Seoul National University of Science and Technology (SeoulTech)
Nam-Su HUH, Seoul National University of Science and Technology (SeoulTech)
Seung-gun LEE, Korea Institute of Materials Science

A124 Strain-Based Low-Cycle Fatigue Assessment on Piping Elbow
Kenichi SHIBUKUWA, IHI Corporation

15:20–16:40
A1. Advances in Fracture and Fatigue: Mechanics of Fatigue and Fracture
Chair: Masahiro ENDO, Fukuoka University

A125 Internal fatigue crack propagation behaviors in beta titanium alloy
Gaoge XUE, Hokkaido University
Fumiyoshi YOSHINAKA, National Institute for Materials Science
Nao FUJIMURA, Hokkaido University
Kosuke TAKAHASHI, Hokkaido University
Takashi NAKAMURA, Hokkaido University

A126 Adhesion behavior of small internal fatigue cracks in (α+β) Ti-6Al-4V under cyclic compressive loading
Yuta FUNAKI, Hokkaido University
Sachika MASHITANI, Hokkaido University
Gaoge XUE, Hokkaido University
Kosuke TAKAHASHI, Hokkaido University
Nao FUJIMURA, Hokkaido University
Takashi NAKAMURA, Hokkaido University

A127 Initiation and propagation behaviors of small internal fatigue cracks in precipitation-hardened stainless steel 17-4PH
Takashi NAKAMURA, Hokkaido University
Gen IGARASHI, Hokkaido University
Gaoge XUE, Hokkaido University
Nao FUJIMURA, Hokkaido University
Kosuke TAKAHASHI, Hokkaido University

A128 Elucidation of factors plastic strain localization controlling damage accumulation mode of fatigue crack propagation behavior
Keita TATEBE, Kyushu University
Shigeru HAMADA, Kyushu University

Tuesday, November 26, Room B

9:20–11:00
A2. Advances in Fracture and Fatigue: Experimental Mechanics
Chair: Hironobu YUKI, The University of Electro-Communications

A215 Application of Strain Measurement and Experimental Modal Analysis for Constructing Modal Shapes of Printed Circuit Boards without Multiple Electronic Components
Ming-Zhi SIE, National Taiwan University of Science and Technology / National Taiwan University
ChingKong CHAO, National Taiwan University of Science and Technology
Yu-Si HUANG, National Taiwan University

A216 Investigation of Relationship between Crack Tip Shape and Crack Growth Behavior of Rubber under High Speed Crack Growth
Takeru OOMORI, Aoyama Gakuin University
Keisuke IIZUKA, Aoyama Gakuin University
Satoru YONEYAMA, Aoyama Gakuin University

A217 Image Classification for Machine Maintenance by CNN with Polarized Filtered Images
Hibiki SHIRAISHI, Institute of Science Tokyo (Tokyo Institute of Technology)
Yoshihiro MIZUTANI, Institute of Science Tokyo (Tokyo Institute of Technology)

A218 Improvement of Crack Size Measurement using Potential Drop by Mitigating Influence of General Corrosion Loss during Corrosion Fatigue Test
Hitoshi HAYASHIBARA, National Maritime Research Institute
Takahiro ANDO, National Maritime Research Institute
Ryutaro FUEKI, National Maritime Research Institute

A219 Anomaly Mode Classification in Rotating Equipment Using Supervised Learning
Takato MORIKAWA, Institute of Science Tokyo (Tokyo Institute of Technology)
Muttaqin Muhammad IRFAN, Institute of Science Tokyo (Tokyo Institute of Technology)
Yoshihiro MIZUTANI, Institute of Science Tokyo (Tokyo Institute of Technology)

13:40–15:00
A2. Advances in Fracture and Fatigue: Experimental Mechanics
Chair: Yasuyuki MORITA, Kumamoto University

A220 Anomaly Detection in Rotating Equipment Using Unsupervised Learning with Vibration and Rotational Speed Data
Muhammad Irfan MUTTAQIN, Bandung Institute of Technology / Institute of Science Tokyo (Tokyo Institute of Technology)
Yoshihiro MIZUTANI, Institute of Science Tokyo (Tokyo Institute of Technology)
Takato MORIKAWA, Institute of Science Tokyo (Tokyo Institute of Technology)

A221 Attempts to Increase the Number of Intended Acoustic Emission Generation in Double Cantilever Beam Specimens with Multiple Chevron-shaped Joints
Yasuhiro ONUKI, The University of Electro-Communications
Hironobu YUKI, The University of Electro-Communications

A222 Evaluation of material properties at a localized neck by data driven identification
Kotaro FUJITA, Aoyama Gakuin University
Keisuke IIZUKA, Aoyama Gakuin University
Satoru YONEYAMA, Aoyama Gakuin University
Kuniharu USHIJIMA, Tokyo University of Science
Shota CHINZEI, Kobe Steel, Ltd

A223 Evaluation of crack tip opening loads in CT specimens subjected to load spectra
Andrei KOTOUSOV, The University of Adelaide
James VIDLER, The University of Adelaide
James HUGHES, The University of Adelaide
Aditya KHANNA, The University of Queensland
Chris WALLBRINK, Defence Science and Technology Group
Ching-Tai NG, The University of Adelaide

15:20–16:40
A2. Advances in Fracture and Fatigue: Experimental Mechanics
Chair: Yoshihiro MIZUTANI, Institute of Science Tokyo (Tokyo Institute of Technology)

A224 Accuracy improvement of deterioration detection of anti-corrosion coating based on principal component analyses of near infrared hyper-spectral image data
Shinsuke HARUNA, Kobe University
Akinori TANI, Kobe University
Yuki OGAWA, Kobe University
Daiki SHIOZAWA, Kobe University
Takahide SAKAGAMI, Kobe University
Yoshiteru YOKOI, Honshu-Shikoku Bridge Expressway Co.
Takeshi SUGIYAMA, Honshu-Shikoku Bridge Expressway Co.

A225 Cancelled

A226 Thermographic technique for measuring thermal diffusivity with laser spot heating (Evaluation of thermal oxidative degradation of a natural rubber)
Shun TOMIZAWA, Institute of Science Tokyo (Tokyo Institute of Technology)
Kento KOZAKI, Institute of Science Tokyo (Tokyo Institute of Technology)
Yu KUROKAWA, Institute of Science Tokyo (Tokyo Institute of Technology)
Yousuke IRIE, Panasonic Connect Co., Ltd.
Hirotsugu INOUE, Institute of Science Tokyo (Tokyo Institute of Technology)

A227 A Novel Approach to Exterior Wall Inspections Using a Single Balloon-Mounted Infrared Camera
Saeko TOKUOMI, Kumamoto University
Kandai YAYAMA, Kumamoto University
Takato INOUE, Kumamoto University
Yasutaka OHSHIMA, Kumamoto University
Kazuya MORI, Kumamoto University

Tuesday, November 26, Room C

9:00–11:00
A3. Advances in Fracture and Fatigue: Theoretical Modeling and Numerical Analysis
Chair: Fuminori YANAGIMOTO, Nippon Kaiji Kyokai (ClassNK)

A315 Redefined three-dimensional J-integral and J-integral range Delta-J as finite strain elastic-plastic crack parameter (considerations on energy release rate and weakly singular terms)
Hiroshi OKADA, Tokyo University of Science
Koichiro ARAI, Hexagon

A316 The Virtual Element Method for Crack Analysis: Exploring Configurational Forces in Material Space
Kevin SCHMITZ, University of Kassel
Andreas RICOEUR, University of Kassel

A314 Finite Element Analysis to Reduce Distortion and Residual Stress in Welded Joints
Ksatria Raulinzha NUGRAHA, Institut Teknologi Bandung
I Made WIRAGUNARSA, Institut Teknologi Bandung
Annisa JUSUF, Institut Teknologi Bandung
Ichsan Setya PUTRA, Institut Teknologi Bandung

A318 Peridynamic Modeling and Analysis of Glass for Railway Applications
Hong-Lae JANG, Korea National University of Transportation
Minseong CHO, Changwon National University
Jonghwan PARK, Changwon National University

A319 Comparative Seismic Analyses of a Small Modular Reactor using Model Reduction Methods
Jun-Yeop LEE, Kyung Hee University
Dong-Hyeon CHOI, Kyung Hee University
Yoon-Suk CHANG, Kyung Hee University

A320 Time-domain finite difference formulation and numerical solution for dynamic thermoelastic theory coupled with dual-phase-lag heat conduction model
Kaito MASUI, Tokyo University of Science
Masayuki ARAI, Tokyo University of Science

13:40–15:00
A3. Advances in Fracture and Fatigue: Theoretical Modeling and Numerical Analysis
Chair: Hong-Lae JANG, Korea National University of Transportation

A321 Failure Analysis on Stress Intensity Factors for a Hypocycloid-type Crack within a Thermo-elastic Material
Yi-Lun LIAO, National Taiwan University
Chien-Ching MA, National Taiwan University
Ching-Kong CHAO, National Taiwan University of Science and Technology

A322 Unified definition of stress intensity factors at sharp 3D jointed corner under mechanical, thermal and electrical forces
Toru IKEDA, Kagoshima University
Gunma IKEGIRI, Kagoshima University
Masaaki KOGANEMARU, Kagoshima University

A323 Quantitatively evaluating the contribution of intergranular carbides, Cr-depleted zone, and grain boundary to intergranular stress corrosion cracking of Alloy 600 in a simulated boiling water reactors environment with high oxygen concentrations
Pan LIU, Tohoku University

A324 Finite Element Analysis of the Effect of Grain Shape on Intergranular Crack Propagation
Daffa Zhafari ARIADI, Institut Teknologi Bandung
I Made WIRAGUNARSA, Institut Teknologi Bandung
Annisa JUSUF, Institut Teknologi Bandung
Ichsan Setya PUTRA, Institut Teknologi Bandung

15:20–16:40
A3. Advances in Fracture and Fatigue: Theoretical Modeling and Numerical Analysis

Chair: Pan LIU, Tohoku University

A325 Misorientation-dependent stress and strain concentration near grain boundaries in Ni-based bi-crystal superalloy
Hiroshi FUKAZAWA, IHI Corporation
Shigeru YASUDA, IHI Corporation
Masahiro TAKANASHI, IHI Corporation
Mitsuyoshi TSUNORI, IHI Corporation
Yuta KITAMURA, IHI Corporation

A326 Derivation of High-Temperature Fatigue Damage Rule for Aluminum Alloy Based on Plastic and Creep Strains Analysis Using Data Assimilation Technique
Towa HAYASHIBE, Hokkaido University
Katsuhiko SASAKI, Hokkaido University
Ken-ichi OHGUCHI, Akita University
Kohei FUKUCHI, Akita University
Yorimasa TSUBOTA, ISUZU Motors Limited
Takuro MITA, ISUZU Advanced Engineering Center, Limited
Wataru NAGAI, ISUZU Motors Limited
Kouji OHSATO, ISUZU Motors Limited
Nobuaki SHINYA, ISUZU Motors Limited

A327 A microscale model for quantitatively predicting the influence of polycrystalline morphology on Coble creep deformation
Kota SAGARA, The University of Tokyo
Kazuki SHIBANUMA, The University of Tokyo

A328 Multiscale computational homogenization based surrogate modelling for nonlinear analysis of Coble creep deformation in polycrystalline solids
Yi LIU, The University of Tokyo
Kota SAGARA, The University of Tokyo
Kazuki SHIBANUMA, The University of Tokyo

Tuesday, November 26, Room D

9:20–11:00
C3. Composites, Joints and Coatings: Coatings and Interfaces
Chair: Kazuhiro OGAWA, Tohoku University and Yasuhiro YAMAZAKI, Chiba University

C301 The enhancement effect of polyamide addition on impact strength of cellulose fiber reinforced thermoplastic polypropylene
Quan JIANG, Yamagata University
Tetsuo TAKAYAMA, Yamagata University
Akihiro NISHIOKA, Yamagata University

C302 Cancelled

C303 Improvement of Schottky and Ohmic contact at metal-semiconductor interfaces using high-frequency current
Yasutomo ISHIDA, Nagoya University
Yasuhiro KIMURA, Nagoya University
Yang JU, Zhejiang University
Yuhki TOKU, Nagoya University

C304 Thermal cycle damage behavior of a novel YbTa3O9/YSZ dual TBC with columnar structure
Yasuhiro YAMAZAKI, Chiba University

C305 Establishment of Repair Technology and Assurance of Strength Reliability in Piping Cracks and Holes by Low-Pressure Cold Spray
Taiga FUNAKI, Tohoku University
Kodai SHIGIHARA, Tohoku University
Hiroki SAITO, Tohoku University
Yuji ICHIKAWA, Tohoku University
Kazuhiro OGAWA, Tohoku University

13:40–15:00
B2. Energy and Environment: Electrochemical Devices
Chair: Kazuhisa SATO, Tohoku University

B201 Macroscopic volume change under charge/discharge in commercialized oxide based ASSLiB
Fumitada IGUCHI, Nihon University
Ryu WATANABE, Nihon University
Emu WATANABE, Nihon University

B202 Solid electrolyte interface thinning effect in Li-ion batteries
Byeongyong LEE, Pusan National University
Taeksoo JUNG, Pusan National University

B203 Development of Intimate Contact Technology for High Performance All-Solid-State Batteries
Dong-Joo YOO, Korea University

B204 Understanding Activation Barriers in Dry Reforming Reactions with Ni Nanoparticle-Supported CeO2 Catalysts: Experimental Findings and Density Functional Theory Evaluation
Takaya FUJISAKI, Shimane University
Yuta TSUJI, Kyushu University
Phuc Hoan TU, Kogakuin University
Tin Chanh Duc DOAN, Vietnam National University Ho Chi Minh City
David S. Rivera ROCABADO, Yokohama City University / Hiroshima University
Aleksandar Tsekov STAYKOV, Kyushu University
Keiji YASHIRO, Shimane University / Tohoku University
Yusuke SHIRATORI, Kogakuin University

15:20–16:40
B2. Energy and Environment: Electrochemical Devices
Chair: Wakako ARAKI, Institute of Science Tokyo (Tokyo Institute of Technology)

B205 Weibull parameter estimation of interfacial fracture toughness at the

electrode/electrolyte interfaces in SOFCs
Keigo KUMADA, National Institute of Technology, Gifu College
Mitsunaga IKEDA, National Institute of Technology, Gifu College
Kazuhisa SATO, Tohoku University

B206 Modeling of Internal Short Circuits in the Cylindrical Battery Cell Induced by Mechanical Abuse
Seong Bin HAN, Korea University
Sang-Youn PARK, Korea University
Jaeyoung LIM, Hyundai Motor Company
Yongha HAN, Hyundai Motor Company
Byoung-Ho CHOI, Korea University

B207 Assessment of Microscale Internal Changes in Electrochemical Devices Using Elastic-Wave-Based Testing Techniques
Weiwei WU, Graduate School of Engineering, Tohoku University
Yihui HUANG, Graduate School of Engineering, Tohoku University
Kazuhisa SATO, Fracture and Reliability Research Institute, Tohoku University

B208 Electroelastic analysis of D∞ piezoelectric infinite strip with internal vertical cracks under anti-plane shear stress
Keitaro MATSUMOTO, Osaka Metropolitan University
Masayuki ISHIHARA, Osaka Metropolitan University
Yoshitaka KAMEO, Shibaura Institute of Technology

Tuesday, November 26, Room E

13:40–15:00
D3. Nano/Micro/Meso Aspects of Materials: Functional Materials
Chair: Zhenjin WANG, Tohoku University

D301 Diffusion analysis of Ti3AlC2/SiC composites using molecular dynamics simulations
Shogo OSAWA, Saitama University
Yoshio ARAI, Saitama University
Wakako ARAKI, Tokyo Institute of Tecnology

D302 Inverse design of composite sheets with pixel-patterned thermal expansion coefficients
Ryotaro SAKAMOTO, Shimane University
Takuya MORIMOTO, Shimane University

D303 Self-extraction origami structure folding shape memory polymer sheet
Kohei TAKEDA, Aichi Institute of Technology
Hiroyuki KATO, Hokkaido University

D304 CFRP Structures Having Shape Memory-Like Properties Fabricated with Embroidery Technique
Koyo KONDO, Chubu University
Sota NAKASHIMA, Chubu University
Tadashige IKEDA, Chubu University

15:20–16:40
D3. Nano/Micro/Meso Aspects of Materials: Functional Materials
Chair: Kohei TAKEDA, Aichi Institute of Technology

D305 The role of material forces in visualizing the variation of stiffness
Yuki SATO, Shimane University
Takuya MORIMOTO, Shimane University

D306 The steady-state motion of a CVT rubber belt
Seiya HAMAGUCHI, Shimane University
Takuya MORIMOTO, Shimane University
Atsushi MIKI, Mitsuboshi Belting Ltd
Takanari IKENISHI, Mitsuboshi Belting Ltd
Yuji MARUYAMA, Mitsuboshi Belting Ltd

D307 Transition in Deformation Behavior of Porous Components Containing Optimized Pore Group Network
Ryota TOYOBA, Nagaoka University of Technology
Yuichi OTSUKA, Nagaoka University of Technology
Yukio MIYASHITA, Nagaoka University of Technology

D308 Strain rate dependence of the compressive strength of polymer lattice structures with typical unit cell topologies
Tomohisa KOJIMA, Saitama University
Takahiro KAWANO, Chuo University
Hidaka ISHII, Chuo University
Kohei TATEYAMA, Muroran Institute of Technology
Hiroyuki YAMADA, National Defense Academy
Kensuke KAGEYAMA, Saitama University
Tomoaki TSUJI, Chuo University

F3

Tuesday, November 26, Room F

13:00–13:40
Poster Session

A151P Design of Automotive Fuel Tank for SUV's Components by FE-Simulation
Kee Joo KIM, Tongmyong University

A152P Analysis on defect-induced time-dependent fracture properties of epoxy resin
Daisuke KITATANI, Kansai University
Yoshimasa TAKAHASHI, Kansai University
Masanori TAKUMA, Kansai University
Ken-ichi SAITOH, Kansai University
Tomohiro SATO, Kansai University

A153P Study on mechanical fatigue life prediction of lithium-ion battery electrode materials considering permanent strain
Atsuki TAKEUCHI, Tokyo City University
Yudai FURUHATA, Tokyo City University
Yoshinao KISHIMOTO, Tokyo City University
Yukiyoshi KOBAYASHI, Tokyo City University
Masaya UEDA, Tokyo City University
Shiori TAGAI, Tokyo City University

A154P Numerical simulation of stress corrosion cracking of 6061 aluminum alloy in salt water and its service life estimation
Naoki YAMASHITA, Shizuoka University
Tomoyuki FUJII, Shizuoka University
Yoshinobu SHIMAMURA, Shizuoka University

A155P High-cycle fatigue properties of an interstitial-free steel evaluated by rotary bending
Ryo NAKATA, Kansai University
Yukihiko KIMURA, Nippon Steel Corporation
Takanori KATO, Nippon Steel Corporation
Eisuke NAKAYAMA, Nippon Steel Corporation
Taizo MAKINO, Nippon Steel Corporation
Yoshimasa TAKAHASHI, Kansai University
Masanori TAKUMA, Kansai University
Ken-ichi SAITOH, Kansai University
Tomohiro SATO, Kansai University

A156P Failure prediction of an elliptic hole embedded in an infinite plate subjected to thermal or mechanical load
MING-CHU CHIANG, National Taiwan University of Science and Technology
ChingKong CHAO, National Taiwan University of Science and Technology

A157P Temperature variation relevant to fatigue crack initiation and propagation in a single crystal material
Yuta SOMEYA, Institute of Science Tokyo (Tokyo Institute of Technology)
Motoki SAKAGUCHI, Institute of Science Tokyo (Tokyo Institute of Technology)
Akira KOSHIO, Institute of Science Tokyo (Tokyo Institute of Technology)
Putt THANAKUN, Institute of Science Tokyo (Tokyo Institute of Technology)
Hirotsugu INOUE, Institute of Science Tokyo (Tokyo Institute of Technology)

A158P Anisotropic fatigue crack initiation and propagation around stress raisers in a single crystal Ni-based superalloy
Itsuki SASAKURA, Institute of Science Tokyo (Tokyo Institute of Technology)
Keita MASE, Institute of Science Tokyo (Tokyo Institute of Technology)
Putt THANAKUN, Institute of Science Tokyo (Tokyo Institute of Technology)
Takahiro FUKUDA, Mitsubishi Heavy Industries
Takanori KARATO, Mitsubishi Heavy Industries
Motoki SAKAGUCHI, Institute of Science Tokyo (Tokyo Institute of Technology)

A159P Study on the fatigue behaviour of additive manufactured maraging steel by laser peening and its influence on harmless crack size
Ji-Min YUN, Pukyong Notional University
Hyungseok NAM, Kyungpook National University

Ho-Seok NAM, Busan Development Institute
Ki-Woo NAM, Pukyong National University

A160P Fracture Behavior Analysis of Zr-based Metallic Glass with a Gradient Relaxation Structure by Digital Image Correlation
Keisuke TABARU, Tohoku University
Rui YAMADA, Tohoku University
Junji SAIDA, Tohoku University

A161P Cause of the Scatter in the Fatigue Strength of Al-Si-Mg Cast Aluminum Alloy Specimen Containing Small Defects
Shohei MATSUDA, Fukuoka University
Tohru HASHIMOTO, HINODE Holdings Co. Ltd
Kota TAKAMATSU, HINODE Holdings Co. Ltd
Takashi MATSUO, Fukuoka University
Masahiro ENDO, Fukuoka University
Junichiro YAMABE, Fukuoka University

A251P Effect of homogenization and aging process on impact properties of forged Al-Mg-Si alloy
Guanglei LIN, Fujian University of Technology
Qiuquan CHEN, Fujian University of Technology
Shuaishuai QIN, Fujian University of Technology
Xu HUANG, Fujian University of Technology

A252P Enhancement of Fatigue Strength and Biocompatibility of Ti-6Al-4V by Low Energy Laser Peening
Kyosuke SUGIYAMA, Tokyo City University
Yuji SANO, Osaka University
Yoshio MIZUTA, Osaka University
Satoshi TAMAKI, Osaka University
Takahisa SHOBU, Japan Atomic Energy Agency
Ai MOMOZAWA, Tokyo City University
Koichi AKITA, Tokyo City University

A351P Demonstration of three-dimensional welding residual stress estimation method using X-ray diffraction on fusion-welded materials
Naoya ITO, Kogakuin University
Kenta SUZUKI, Kogakuin University
Masaru OGAWA, Kogakuin University

Wednesday, November 27, Room A

9:20–11:00
A1. Advances in Fracture and Fatigue: Mechanics of Fatigue and Fracture
Chair: Yukio MIYASHITA, Nagaoka University of Technology

A129 Potential drawbacks of the rotating bending fatigue testing method
Haru FUJISHIMA, Fukuoka University
Mitsuhiro HISATSUGU, Fukuoka University
Masahiro ENDO, Fukuoka University
Yuya TANAKA, Fukuoka University
Keiji YANASE, Fukuoka University

A130 The possibility and limitation of the fracture toughness test of materials with medium and high toughness by a circumferentially cracked round bar specimen
Koichi KASABA, University of Toyama

A131 Influence of strain rate on yield stress of electromagnetic soft iron
Ryohei YAMAKAWA, MEIDENSHA CORPORATION
Tomoyuki FUJII, Shizuoka University
Yoshinobu SHIMAMURA, Shizuoka University

A132 Defect Sensitivity at Fatigue Limit of Quenched and Tempered Cr-Mo Steel with Varying Strength Levels
Takahiro CHIBA, Nippon Steel Corporation
Eisuke NAKAYAMA, Nippon Steel Corporation
Taizo MAKINO, Nippon Steel Corporation

A133 High cycle fatigue of A5083-O aluminum alloy with holes under multiaxial loading
Norio TAKEDA, Hitachi, Ltd.
Takahiko SAWADA, Hitachi, Ltd.
Takeshi INOUE, Hitachi, Ltd.

11:20–12:00
Plenary Lecture
Chair: Byoung-Ho CHOI, Korea University

P003 *in situ* EBSD evaluation of deformation behavior on hydrogen embrittlement
Seung Hoon NAHM, Korea Research Institute of Standards and Science
Hee Soo YUN, Korea Research Institute of Standards and Science

13:40–14:40
B3. Energy and Environment: Hydrogen Technology
Chair: Shigeru HAMADA, Kyushu University

B301 Analysis of hydrogen-induced intergranular cracking in novel Al-Zn-Mg-Cu alloys
Kazuyuki SHIMIZU, Tottori University
Hiroyuki TODA, Kyushu University
Motomichi KOYAMA, Tohoku University
Kyosuke HIRAYAMA, Kyoto University
Masayuki UESUGI, Japan Synchrotron Radiation Research Institute
Akihisa TAKEUCHI, Japan Synchrotron Radiation Research Institute
Takashi MATSUNO, Tottori University

B302 Role of retrogression and reaging in suppressing hydrogen-induced transgranular cracking in high-Zn 7xxx aluminum alloy
Yafei WANG, Kyushu University
Hiroyuki TODA, Kyushu University
Kazuyuki SHIMIZU, Tottori University
Kyosuke HIRAYAMA, Kyoto University
Hiro FUJIHARA, Kyushu University
Akihisa TAKEUCHI, Japan Synchrotron Radiation Research Institute
Masayuki UESUGI, Japan Synchrotron Radiation Research Institute

B304 Suppression of hydrogen embrittlement in high strength Al-Zn-Mg alloys processed by high pressure torsion

Masaki TAKEDA, Kyushu University
Hiro FUJIHARA, Kyushu University
Yafei WANG, Kyushu University
Hiroyuki TODA, Kyushu University
Yoshikazu TODAKA, Toyohashi University of Technology
Nozomu ADACHI, Toyohashi University of Technology
Akihisa TAKEUCHI, JASRI
Masayuki UESUGI, JASRI
Yuantao XU, Shanghai Jiao Tong University

15:20–16:20
B3. Energy and Environment: Hydrogen Technology
Chair: Ikumu WATANABE, National Institute for Materials Science / University of Tsukuba

B305 Gradient-enhanced ductile fracture modeling applied to hydrogen embrittlement with the brittle-ductile transition
Tianwen TAN, University of Tsukuba / National Institute for Materials Science
Ikumu WATANABE, University of Tsukuba / National Institute for Materials Science

B306 Quantification of hydrogen embrittlement of aluminum alloy caused by hydrogen-accelerated spontaneous microcracking using crystal plasticity analysis
Tsubasa HOJO, Kyushu University
Shigeru HAMADA, Kyushu University

B307 Hydrogen embrittlement acceleration due to external hydrogen in Al-Zn-Mg alloy
Hiro FUJIHARA, Kyushu University
Hiroyuki TODA, Kyushu University
Ken-ichi EBIHARA, Japan Atomic Energy Agency
Kyosuke HIRAYAMA, Kyoto University
Kazuyuki SHIMIZU, Tottori University
Masayuki UESUGI, Japan Synchrotron Radiation Research Institute
Akihisa TAKEUCHI, Japan Synchrotron Radiation Research Institute

Wednesday, November 27, Room B

9:20–11:00
A2. Advances in Fracture and Fatigue: Experimental Mechanics
Chair: Takenobu SAKAI, Saitama University

A228 Mechanical and structural properties of stochastic lattice biomimetically designed based on cancellous bone for additively manufactured implants
Shimpei OKADA, Hokkaido University
Satoshi YAMADA, Hokkaido University
Hayato SUZUKI, Hokkaido Research Organization
Masahiro TODOH, Hokkaido University

A229 Evaluation of X-ray Elastic Modulus of Additive Manufactured Aluminum Alloy
Tomoyuki HAYASE, Aoyama Gakuin University
Naoki SAKAGUCHI, Shinhokoku Material Corporation
Hiroto SASAYA, Aoyama Gakuin University
Shota HASUNUMA, Aoyama Gakuin University

A230 Research on Detecting Mechanical Forces in Cancer Cell Growth Using Oil Droplet Mechanical Sensors
Chen YONGJIE, Kumamoto University
Seiji OMATA, Kumamoto University
Yasuyuki MORITA, Kumamoto University

A231 Comparison of Displacement Measurement Accuracy between Rhodes Method and Sampling Moire Method
Motoharu FUJIGAKI, University of Fukui
Taichi SANO, University of Fukui

A232 Development of Double-wall Structure Cell to Enhance Sound Insulation Performance
Keisho HAMASAKI, Aoyama Gakuin University
Takeshi ASHIZAWA, Nihon Onkyo Engineering
Keisuke IIZUKA, Aoyama Gakuin University
Satoru YONEYAMA, Aoyama Gakuin University

13:40–15:00
B2: Energy and environment: Electrochemical devices
Chair: Fumitada IGUCHI, Nihon University

B209 Mechanical property of LiCoO2 cathode for all solid-state lithium-ion secondary batteries
Masatsugu OISHI, Tokushima University
Shinnosuke KUROTATSU, Tokushima University
Kazuhisa SATO, Tohoku University
Fumitada IGUCHI, Nihon University

B210 Evaluation of Mechanical Integrity of Electrode Material in Lithium-ion Battery (LiB)
Yuzuki KAWASHIMA, Chuo University
Yuto SHIBAYAMA, Chuo University
Aoi TAKAGI, Chuo University
Daisuke SUMIYA, Chuo University
Akio YONEZU, Chuo University
Hideki NAGATSUKA, Chuo University

B211 Ionic Conductivity of Perovskite-type La0.557Li0.33TiO3 with various Ordered Structures and Grain Structures
Yuki FUTAMI, Institute of Science Tokyo (Tokyo Institute of Technology)
Wakako ARAKI, Institute of Science Tokyo (Tokyo Institute of Technology)

B212 Structural and mechanical properties of LaLiTiO with different order parameters
Daiki SAKAI, Saitama University
Yoshio ARAI, Saitama University
Wakako ARAKI, Institute of Science Tokyo (Tokyo Institute of Technology)

15:20–16:40
B2: Energy and environment: Electrochemical devices

Chair: Masatsugu OISHI, Tokushima University

B213 Proposing an Advanced Methodology for Predicting Macro-Scale Material Responses from Microstructural Analysis
Yihui HUANG, Tohoku University
Weiwei WU, Tohoku University
Tatsuya KAWADA, Tohoku University
Kazuhisa SATO, Tohoku University

B214 Long-term Mechanical Properties Estimation via Small Punch Testing Method for Heterogeneous Anode Materials of Solid Oxide Fuel Cells
Yihui HUANG, Tohoku University
Weiwei WU, Tohoku University
Tatsuya KAWADA, Tohoku University
Kazuhisa SATO, Tohoku University

B215 Ionic conductivity measurement of LSCF by electrical conductivity relaxation method
Takumi SAKAMOTO, Saitama University
Yoshio ARAI, Saitama University
Wakako ARAKI, Institute of Science Tokyo (Tokyo Institute of Technology)

B216 Development of Geometrical and Material Nonlinear Structure Analysis Method by Quantum Annealing Using Factorization Machines Toward Multiphysics Analysis
Taichi KAJI, Keio University
Katsuhiro ENDO, National Institute of Advanced Industrial Science and Technology
Kenjiro TERADA, Tohoku University
Mayu MURAMATSU, Keio University

Wednesday, November 27, Room C

9:00–11:00

A3. Advances in Fracture and Fatigue: Theoretical Modeling and Numerical Analysis

Chair: Hongchang ZHOU, Osaka University

A334 Deflected crack paths in anisotropic solids: uncertainties and stochastic aspects
Andreas RICOEUR, Kassel University
Konstantin ZARJOV, Kassel University

A329 Application of ductile fracture simulation to heavy gauge A5083 aluminum alloy plate
Fuminori YANAGIMOTO, Nippon Kaiji Kyokai (ClassNK)
Shohei URANAKA, The University of Tokyo
Wakaba TSURUTA, Nippon Kaiji Kyokai (ClassNK)
Xixian LI, The University of Tokyo
Tomoya KAWABATA, The University of Tokyo

A330 A New Approach for Calibration of MMC Model for Ductile Fracture Prediction in A5083-O Aluminum Alloy
Xixian LI, The University of Tokyo
Shohei URANAKA, The University of Tokyo
Fuminori YANAGIMOTO, Nippon Kaiji Kyokai(ClassNK)
Tomoya KAWABATA, The University of Tokyo

A331 Inverse Derivation of Point Plot-based Ductile Fracture Loci through Assimilation of Finite Element Simulation and Actual Shear-punched Edge Profile for Ultra High Strength Steel Sheets
Jin EGUCHI, Tottori University
Yasuhiro KUNII, Tottori University
Kazuyuki SHIMIZU, Tottori University
Takashi MATSUNO, Tottori University

A332 A damage model for accurately simulating ductile fracture with large deformation
Wanting ZHANG, The University of Tokyo
Yun-Jae KIM, Korea University
Kazuki SHIBANUMA, The University of Tokyo

A333 Potential-based formulation of ductile fracture constitutive model in finite element analysis of periodic microstructure
Ikumu WATANABE, Naitonal Institute for Materials Science / University of Tsukuba
Tianwen TAN, Naitonal Institute for Materials Science / University of Tsukuba

13:40–15:00

D3. Nano/Micro/Meso Aspects of Materials: Functional Materials

Chair: Takuya MORIMOTO, Shimane University

D309 Theoretical analysis of transient thermoelectroelastic field in a D∞ piezoelectric strip subjected to temperature distribution on both surfaces
Masayuki ISHIHARA, Osaka Metropolitan University
Hirohito SUZUKI, Sumitomo Electric Industries, Ltd.
Yoshitaka KAMEO, Shibaura Institute of Technology

D310 Electroelastic analysis of piezoelectric cylinder with D∞ symmetry disturbed by transient hygrothermal distribution
Riku DOI, Osaka Metropolitan University
Masayuki ISHIHARA, Osaka Metropolitan University
Yoshitaka KAMEO, Shibaura Institute of Technology

D311 Evaluation of power generation characteristics of two-stage diamond-shaped mechanism harvester using PZT stack
Reo UCHIYAMA, University of Miyazaki
Yusaku YOSHIZAKO, University of Miyazaki
Ryo IWAMOTO, University of Miyazaki
Ryuusuke KAWAMURA, University of Miyazaki

D312 Damped Forced Bending Vibration of a Vibration Power Generation Element under Base Excitation
Yusaku YOSHIZAKO, University of Miyazaki

Ryoya MIYASAKA, University of Miyazaki
Ryuusuke KAWAMURA, University of Miyazaki

15:20–16:40
D3. Nano/Micro/Meso Aspects of Materials: Functional Materials
Chair: Ryuusuke KAWAMURA, University of Miyazaki

D313 Fabrication of Composite Material Sheets from High Density Polyethylene/Microencapsulated Paraffin and Their Heating and Cooling Test
Soma ORIMOTO, University of Miyazaki
Koshi TORIHARA, University of Miyazaki
Yasutaka KAI, University of Miyazaki
Ryuusuke KAWAMURA, University of Miyazaki

D314 Effect of fabrication and test conditions on the sensing properties of magnetostrictive composite bolts
Chisato SUGAYA, Ibaraki University
Kotaro MORI, Ibaraki University
Fumio NARITA, Tohoku University

D315 Detection of Mode II Interlaminar Damage in Glass Fiber-reinforced Polymers at Cryogenic Temperatures Using Fe-Co Magnetostrictive Fiber and Plate
Michihito SHOJI, Tohoku University
Zhenjin WANG, Tohoku University
Hiroki KURITA, Tohoku University
Fumio NARITA, Tohoku University

D316 Real-time Crack Detection in Carbon Fiber-Reinforced Polymers during Bending Vibrations Using Piezoelectric Composites
Yuki SUEDA, Tohoku University
Zhenjin WANG, Tohoku University
Hiroki KURITA, Tohoku University
Fumio NARITA, Tohoku University

17:00–17:40
2024 JSME–Materials and Mechanics Division Award Ceremony

Wednesday, November 27, Room D

:40–11:00
D1. Nano/Micro/Meso Aspects of Materials: Crystalline Solids
Chair: Takayuki HAMA, Kyoto University

D101 Fabrication of Al-Si-O compounds with high mechanical properties by microstructure modification
Ren IWAYA, Nagoya University
Yasuhiro KIMURA, Nagoya University
Yuhki TOKU, Nagoya University

D102 Anisotropic Mechanical property-Induced Ductilization (AMID) of Mg/LPSO extruded Mg alloys to simultaneously achieve high strength and large elongation
Koji HAGIHARA, Nagoya Institute of Technology
Tsuyoshi MAYAMA, Kumamoto University
Michiaki YAMASAKI, Kumamoto University / J-PARC Center
Stefanus HARJO, J-PARC Center
Toko TOKUNAGA, Nagoya Institute of Technology
Mika SUGITA, Nagoya Institute of Technology
Kazuki YAMAMOTO, Nagoya Institute of Technology
Wu GONG, J-PARC Center
Soya NISHIMOTO, Kumamoto University

D103 Non-dislocation hardening mechanism of polycrystalline HCP metals under inhomogeneous deformation
Yoshiki KAWANO, Kitami Institute of Technology
Tsuyoshi MAYAMA, Kumamoto University
Masatoshi MITSUHARA, Kyushu University

D104 Evaluation of effect of multiple kink bands on kink strengthening by higher-order gradient crystal plasticity
Natsu ZENIMOTO, Saga University
Yuichi TADANO, Saga University

13:40–15:00
D1. Nano/Micro/Meso Aspects of Materials: Crystalline Solids
Chair: Tsuyoshi MAYAMA, Kumamoto University and Koji HAGIHARA, Nagoya Institute of Technology

D105 ATOMIC MIXED-MODE COHESIVE-ZONE LAWS OF GRAIN BOUNDARIES IN CRYSTALLINE SOLIDS
Seung Tae CHOI, Chung-Ang University
Vinh Phu NGUYEN, Chung-Ang University
Nghia Trong MAI, Chung-Ang University

D106 Exploring the Role of Mg-PSZ Particles in Crack Propagation and Stability in TRIP Steel Composites: A Comprehensive Statistical and Modeling Study
Chen-Chun CHIU, National Taiwan University of Science and Technology
ChingKong CHAO, National Taiwan University of Science and Technology

D107 Numerical assessment of stabilized non-conforming nodal integration in higher-order gradient crystal plasticity analysis
Atsuto NAKAMURA, Saga University
Yuichi TADANO, Saga University

D108 Parallel computation of three-dimensional crystal plasticity homogenization method
Shoichi NAKAMURA, Saga University
Yuichi TADANO, Saga University

15:20–16:40
D1. Nano/Micro/Meso Aspects of Materials: Crystalline Solids
Chair: Yuichi TADANO, Saga University

D109 Computational simulation of plane strain compression of polycrystalline structure containing abnormally grown grain
Makoto UCHIDA, Osaka Metropolitan University

Yoshihisa KANEKO, Osaka Metropolitan University
Masashi SAKAMOTO, Nippon Steel Corporation
Takayuki OTSUKA, Nippon Steel Corporation

D110 Crystal plasticity modeling of plastic deformation behavior of a SUS430 steel sheet over a wide temperature range
Sho SATO, Kyoto University
Shinyu HORADA, Kyoto University
Kengo SHIMAI, Kyoto University
Naoki MIYAZAWA, Kyoto University
Masashi SAKAMOTO, Nippon Steel Corporation
Takayuki OTSUKA, Nippon Steel Corporation
Takayuki HAMA, Kyoto University

D111 Influence of artificially introduced interfaces on mechanical properties of additively manufactured IN718 with controlled local crystallographic orientations
Tsuyoshi MAYAMA, Kumamoto University
Takuya ISHIMOTO, Osaka University / University of Toyama
Masakazu TANE, Osaka University
Ken CHO, Osaka University
Koki MANABE, Osaka University
Daisuke MIYASHITA, Osaka Metropolitan University
Shota HIGASHINO, Osaka Metropolitan University
Taichi KIKUKAWA, Osaka University
Hiroyuki Y. YASUDA, Osaka University
Takayoshi NAKANO, Osaka University

D112 Effects of texture and work-hardening on forming limits of aluminum alloy sheets
Takayuki HAMA, Kyoto University
Juna YAMAMOTO, Kyoto University
Sho SATO, Kyoto University
Yasuhiro MAEDA, Kobe steel
Yasushi MAEDA, Kobe steel

Wednesday, November 27, Room E

13:40–15:00
E1. Biological and Soft Materials: Biological and Natural Materials
Chair: Mototsugu TANAKA, Kanazawa Institute of Technology and Yuichi OTSUKA, Nagaoka University of Technology

E101 Multi-modal measurement of interfacial damages at auxetic surface of acetabular cup by cyclic compression
Juan Pablo SOLIS GARCIA, Nagaoka University of Technology
Yuichi OTSUKA, Nagaoka University of Technology
Yukio MIYASHITA, Nagaoka University of Technology

E102 Functionally Graded Materials by Bound Metal Deposition Type 3D Printer
Kazuaki INABA, Institute of Science Tokyo (Tokyo Institute of Technology)
Mizuki TAKASAGO, Institute of Science Tokyo (Tokyo Institute of Technology)
Muhammad FARRELL, Institute of Science Tokyo (Tokyo Institute of Technology)
Apurba DAS, Indian Institute of Engineering Science and Technology, Shibpur
Amit KARMAKAR, Jadavpur University

E103 Evaluation of Osteoclastic Metabolic Behavior on Functional Gradient Substrates Prepared Using Biodegradable Polymers with Different Molecular Weight
Mototsugu TANAKA, Kanazawa Institute of Technology
Kazuki MAEKAWA, Kanazawa Institute of Technology
Toshiki HIGASHIKAWA, Kanazawa Institute of Technology
Atsuya MIYASHITA, Kanazawa Institute of Technology
Ryoya OHTANI, Kanazawa Institute of Technology

E104 Study on accelerated degradation behavior of polylactic acid in saline solution
Jung-Wook WEE, Kumoh National Institute of Technology

15:20–16:40
E1. Biological and Soft Materials: Biological and Natural Materials
Chair: Motohiro SATO, Hokkaido University and Kazuhiro FUJISAKI, Hirosaki University

E105 Stress controlled design for cylindrical composites
Carol Lee CHALERMSIN, Hokkaido University
Tohya KANAHAMA, Hokkaido University
Motohiro SATO, Hokkaido University

E106 Geometrical modeling and FEM analysis of thigmonastic motion in Mimosa pudica driven by internal structures
Hayato OGUNI, Osaka University
Isamu HASHIGUCHI, Osaka University
Shunsuke KOBAYASHI, Osaka University
Takuma HAGIHARA, Saitama University
Hiraku SUDA, Saitama University
Masatsugu TOYOTA, Saitama University
Ryuichi TARUMI, Osaka University

E107 Cancelled

E108 Mechanically driven pattern formations of tree bark
Tetsuo YAMAGUCHI, The University of Tokyo
Yotaro UENOBU, The University of Tokyo

Wednesday, November 27, Room F

13:00–13:40
Poster Session

B251P Study on mechanical properties of anode material for lithium-ion battery with different binder materials
Yudai FURUHATA, Tokyo City University
Atsuki TAKEUCHI, Tokyo City University
Yoshinao KISHIMOTO, Tokyo City University
Yukiyoshi KOBAYASHI, Tokyo City University
Shiori TAGAI, Tokyo City University
Masaya UEDA, Tokyo City University

B252P Exploring the Effects of Urea Concentration on the chemical hydrothermal Synthesis of ZnCo2O4 Nanoparticles for Applications in Supercapacitors
Manesh Ashok YEWALE, Yeungnam University
D. K. SHIN, Yeungnam University

B253P Application of machine learning techniques to predict the mechanical response during electrode fabrication in solid oxide fuel cells
Yinlong SHI, Chiba Institute of Technology
Shotaro HARA, Chiba Institute of Technology

B351P Atomistic Scale Simulations of Hydrogen Distribution for Mode-I Crack in bcc-Fe
Akhil Kumar BADRAMRAJU, Kyoto University of Advanced Science
Ryosuke MATSUMOTO, Kyoto University of Advanced Science

B352P Density functional theory study of the role of Molybdenum for weakening Hydrogen effect on bcc Iron
Shinya KATO, Kyoto University of Advanced Science
Naoki UEMURA, Kyoto University of Advanced Science
Mugilgeethan VIJENDRAN, University of Jaffna
Ryosuke MATSUMOTO, Kyoto University of Advanced Science

C151P Effect of Poly(vinyl butyral) Addition on Notched Charpy Impact Strength of Glass Fiber Reinforced Polypropylene
Tetsuo TAKAYAMA, Yamagata University
Yuuki YUASA, Yamagata University

C152P Strength of titanium corrugated clad cups with voids
Shota OKADA, University of Hyogo
Yasunori HARADA, University of Hyogo
Ippei TANAKA, University of Hyogo

C251P Study on vibration characteristics of ABS resin plates with bolted joints using hammering test and finite element simulation
Keisuke INOUE, Tokyo City University
Tristan Samuel BRITTON, Tokyo City University
Yoshinao KISHIMOTO, Tokyo City University
Yukiyoshi KOBAYASHI, Tokyo City University
Shogo ISOBE, Tokyo City University

C252P Bondability of magnesium alloys with corrosion-resistant metal foil
Yasunori HARADA, University of Hyogo
Toshiaki HOSAKA, University of Hyogo
Ippei TANAKA, University of Hyogo

C351P Effect of Concentration Modulation on Friction and Wear Properties of Diamond Films Synthesized by Microwave Plasma CVD
Ryota OHNISHI, University of Hyogo
Ippei TANAKA, University of Hyogo
Natsuki KAWAGUCHI, University of Hyogo
Yasunori HARADA, University of Hyogo

C352P Effect of source gas on mechanical property of amorphous carbon nitride films by Microwave-sheath Voltage combination Plasma
Ippei TANAKA, University of Hyogo
Masahiro OHIRA, University of Hyogo
Yasunori HARADA, University of Hyogo

Thursday, November 28, Room A

9:00–11:00
D2. Nano/Micro/Meso Aspects of Materials: Nano/Micro Mechanics
Chair: Takashi SUMIGAWA, Kyoto University

D201 Evaluation of light illumination effect on basal slip behavior in gallium nitride single crystals using photoindentation method
Ryosuke KINOSHITA, Osaka University
Yan LI, Osaka University
Hiroto OGURI, Osaka University
Eita TOCHIGI, The University of Tokyo
Atsutomo NAKAMURA, Osaka University

D202 Effects of surface roughness on the initiation of plasticity in nanoindentation of single-crystalline GaN
Hiroto OGURI, Osaka University
Yan LI, Osaka University
Ai I. OSAKA, University of Hyogo
Azusa N. HATTORI, Osaka University
Eita TOCHIGI, The University of Tokyo
Atsutomo NAKAMURA, Osaka University

D203 Methodology of atomic resolution in situ straining testing and application studies
Eita TOCHIGI, The University of Tokyo
Takaaki SATO, The University of Tokyo
Minjian SOU, The University of Tokyo
Naoya SHIBATA, The University of Tokyo / Japan Fine Ceramics Center
Yuichi IKUHARA, The University of Tokyo / Japan Fine Ceramics Center

D204 Improving quality of crystallinity of Cu films by high-frequency electric current
Yi ZHANG, Nagoya University
Shaojie GU, Nagoya University
Yasuhiro KIMURA, Nagoya University
Yang JU, Zhejiang University
Yuhki TOKU, Nagoya University

D205 Domain Structure Changes due to Compressive Deformation in Bulk Barium Titanate Single Crystals
Takeshi SHIBAMOTO, Osaka University
Kota KASAI, Kyoto University
Yan LI, Osaka University
Takahiro SHIMADA, Kyoto University
Atsutomo NAKAMURA, Osaka University

D206 Effect of microstructure on mechanical properties estimated by micro-indentation technique
Keisuke YOSHIKAWA, Ibaraki University
Takashi WAKUI, Japan Atomic Energy Agency
Moriyasu KANARI, National Institute of Technology, Ibaraki College
Kotaro MORI, Ibaraki University
Masatoshi FUTAKAWA, Japan Atomic Energy Agency

11:20–12:00
Plenary Lecture
Chair: TBD

P004 Creep-Fatigue Strength Design: From Physical Models to Data-Driven Approaches
Xian-Cheng Zhang, East China University of Science and Technology

13:40–15:00
D2. Nano/Micro/Meso Aspects of Materials: Nano/Micro Mechanics
Chair: Eita TOCHIGI, The University of Tokyo

D207 High aspect ratio formation of single crystal metal nanowires by enhanced driving force in atomic diffusion

Haruki HASHIMOTO, Nagoya University
Yasuhiro KIMURA, Nagoya University
Yuhki TOKU, Nagoya University

D208 Direct observation on fatigue process of submicron-sized nickel single crystal subjected to tension-compression cyclic deformation
Kota SUGISAKA, Kyoto University
Yamato ISHIZAKA, Kyoto University
Masataka ABE, Kyoto University
Takashi SUMIGAWA, Kyoto University

D209 Injection of excess electrons/holes enhances the fracture toughness of amorphous silica
Takumi TAKAHASHI, Kyoto University
Wataru MATSUNAGA, Kyoto University
Hiroyuki HIRAKATA, Kyoto University

D210 Fatigue Properties of highly oriented pyrolytic graphite, a van der Waals-layered material
Kosuke SHIGETO, Kyoto University / Mitsubishi Electric corp.
Shin UEGAKI, Mitsubishi Electric corp.
Wataru MATSUNAGA, Kyoto University
Hiroyuki HIRAKATA, Kyoto University

15:20–16:40
D2. Nano/Micro/Meso Aspects of Materials: Nano/Micro Mechanics
Chair: Yan LI, Osaka University

D211 Phase-field simulation of dislocations in polar skyrmion lattice: Breakdown of Volterra's elasticity theory
Kohta KASAI, Kyoto University
Susumu MINAMI, Kyoto University
Takahiro SHIMADA, Kyoto University

D212 Reactive molecular dynamics simulation of chemical mechanical planarization: Comparison between silica and ceria abrasives
Ryo TANIMURA, The University of Tokyo
Emi KAWAI, The University of Tokyo
Koichi MASUYA, Ebara Corporation
Chikako TAKATOH, Ebara Corporation
Akira FUKUNAGA, Ebara Corporation
Yoshitaka UMENO, The University of Tokyo

D213 First-principles Calculations of the Catalytic Reaction for the synthesis of butadiene
Shota OGIHARA, Tohoku University
Ken SUZUKI, Tohoku University
Hideo MIURA, Shimane University

D214 Phase-field simulation of quasiparticle glide motion of a dislocation defect in magnetic skyrmion lattices on MnSi nanofilms
Tatsuki KAWAKANE, Kyoto University
Kohta KASAI, Kyoto University
Akihiro UEMATSU, Kyoto University
Susumu MINAMI, Kyoto University
Takahiro SHIMADA, Kyoto University

Thursday, November 28, Room B

9:00–11:00
E2. Biological and Soft Materials: Soft Materials
Chair: Ryuichi TARUMI, Osaka University

E201 Bifurcated principal curvatures for the humidity-driven bending deformation of bilayer structure
Hiro TANAKA, University of Hyogo

E202 Wave propagation in periodic origami structures
Hiromi YASUDA, Japan Aerospace Exploration Agency

E203 Wind-induced deformation and localized buckling of an elastic tube
Shotaro ADACHI, Ritsumeikan University
Shuya YOSHIOKA, Ritsumeikan University
Hirofumi WADA, Ritsumeikan University

E204 Proposal of standard rubber recipe for studying mechanics of elastomers
Yasuo OSAWA, Bridgestone Corporation
Hiro TANAKA, University of Hyogo
Hirotsugu INOUE, Institute of Science Tokyo (Tokyo Institute of Technology)

E205 Mechanical analysis of the effects of spatial heterogeneity in cerebellar cortical growth on lobule formation
Yoshitaka KAMEO, Shibaura Institute of Technology
Ikkei HANATANI, Kyoto University
Taiji ADACHI, Kyoto University

E206 Upper bound analysis of bifurcated paths leading to herringbone patterns
Dai OKUMURA, Nagoya University
Seishiro MATSUBARA, Nagoya University
So NAGASHIMA, Nagoya University
Hiro TANAKA, University of Hyogo

13:40–15:00
E2. Biological and Soft Materials: Soft Materials
Chair: Hirofumi WADA, Ritsumeikan University

E207 Mechanical Properties/Structural Evaluation of Recycled Polypropylene from Contact Lens Molds
Keiichi SHIRASU, Tohoku University
Takahiko KAWAI, Tohoku University
Eri ITO, Tohoku University / Menicon Co. Ltd.
Hironori TOHMYOH, Tohoku University
Masaki TAKATA, Tohoku University

E208 Bending deformation of tape springs by a notched indenter
Shunsuke NOMURA, Keio University
Tomohiko SANO, Keio University

E209 Finite element analysis of the bifurcations of herringbone patterns
Fumiya YAMAUCHI, Nagoya University
Seishiro MATSUBARA, Nagoya University
So NAGASHIMA, Nagoya University
Dai OKUMURA, Nagoya University

E210 Development of Computational Framework for Design and Simulation of Soft Robots
Isamu HASHIGUCHI, Osaka University
Shunsuke KOBAYASHI, Osaka University
Ryuichi TARUMI, Osaka University

15:20–16:40
E2. Biological and Soft Materials: Soft Materials
Chair: Hiro TANAKA, University of Hyogo

E211 An Identification of Mechanical Properties of Soft Materials by using Indentation Test of Thin Circular Plate
Tomoaki TSUJI, Chuo University

Peng SIZHOU, Institute of Science Tokyo (Tokyo Institute of Technology)
Hirotsugu INOUE, Institute of Science Tokyo (Tokyo Institute of Technology)

E212 Geometry and Mechanics of Screw Dislocation in Strained Ring
Shunsuke KOBAYASHI, Osaka University
Hyoga SAKAWAKI, Osaka University
Ryuichi TARUMI, Osaka University

E213 Rigidity transition of a highly deformable granular media
Samuel POINCLOUX, Aoyama Gakuin University
Kazumasa A. TAKEUCHI, The University of Tokyo

E214 Theoretical and Numerical Approach to Crack Growth Analysis in Soft Matter
Hokuto NAGATAKIYA, Osaka University
Naoyuki SAKUMICHI, The University of Tokyo
Shunsuke KOBAYASHI, Osaka University
Ryuichi TARUMI, Osaka University

Thursday, November 28, Room C

9:40–11:00
C1. Composites, Joints and Coatings: Composites
Chair: Masahiro ARAI, Nagoya University

C109 Experimental evaluation of internal damage and heat generation of CFRP laminates due to impact loading
Mamoru MIZUNO, Akita Prefectural University
Ryunosuke ABE, Akita Prefectural University

C101 Orthotropic Plasticity Modelling and Failure Prediction of Multilayer Mono-material Packaging Films Under Biaxial Tension
Rubani FIRLY, Toppan Technical Research Institute
Yuto YOKOCHI, Toppan Technical Research Institute
Jiro TAKEI, Toppan Technical Research Institute

C102 Determination of Elastic Constants of Transversely Isotropic Viscoelastic Carbon Fiber Reinforced Plastics Using Resonant Ultrasound Spectroscopy
Tokiharu SUGINO, Tohoku University
Go YAMAMOTO, Tohoku University

C104 Fatigue life prediction for CFRTP specimens based on plastic strain energy of the resin component
Yukihito AKITA, AGC Inc.
Nobuhiro YOSHIKAWA, The University of Tokyo

13:40–15:00
C1. Composites, Joints and Coatings: Composites
Chair: Tetsuya MATSUDA, University of Tsukuba

C105 Effects of Pre-Cut Thin Foam Core on the Bending Stiffness and Strength of CFRP Sandwich Panels
Yukinori MIYAGAWA, Nagoya University
Keita GOTO, Nagoya University
Masahiro ARAI, Nagoya University
Akinori YOSHIMURA, Nagoya University

C106 Effect of laminate configuration on the tensile properties of carbon fiber reinforced thermoplastic resin laminates
Shun NAKANO, Toyama Prefectural University
Kazuaki SANADA, Toyama Prefectural University
Kazuya MIZUMOTO, Mitsui Chemicals, Inc.
Atsushi SAKAI, Mitsui Chemicals, Inc.
Kazuya NAGATA, Toyama Prefectural University
Yasuka NASSHO, Toyama Prefectural University

C107 Evaluation of Interfacial Shear Strength of CFRP and its Effect on Compressive Strength Degradation Due to Water Absorption
Kosuke YAMABA, Aoyama Gakuin University
Keisuke IIZUKA, Aoyama Gakuin University
Satoru YONEYAMA, Aoyama Gakuin University
Toshiya NAKAMURA, Japan Aerospace Exploration Agency
Ken GOTO, Japan Aerospace Exploration Agency

C108 Evaluation of Strength of Resistance Welding Joints of Thermoplastic Carbon Fiber Reinforced Composite by Using Carbon Nanotube Sheet Heater
Ayano YAMAMOTO, Shizuoka University
Yoshinobu SHIMAMURA, Shizuoka University / Waseda University
Tomoyuki FUJII, Shizuoka University
Yoku INOUE, Shizuoka University

15:20–16:40
C1. Composites, Joints and Coatings: Composites
Chair: Yasuka NASSHO, Toyama Prefectural University

C103 Stress Triaxiality Dependence of Plastic Deformation Behavior of Unidirectional CFRP

Takemaro IGUCHI, Nagoya University
Keita GOTO, Nagoya University
Masahiro ARAI, Nagoya University
Akinori YOSHIMURA, Nagoya University

C110 Two-scale thermal residual stress analysis for dovetails of CFRP fan blades
Ryotaro MIZUTA, University of Tsukuba
Eiichiro MORI, University of Tsukuba
Tetsuya MATSUDA, University of Tsukuba
Masahiro HOJO, Japan Aerospace Exploration Agency
Nobuhiro YOSHIKAWA, The University of Tokyo

C111 Multiscale damage development analysis of filament winding CFRP considering fiber imperfections
Yuga OGIHARA, University of Tsukuba
Tetsuya MATSUDA, University of Tsukuba
Naoki MORITA, University of Tsukuba
Tomohiro YOKOZEKI, The University of Tokyo
Ryoma AOKI, The University of Tokyo
Masahito UEDA, Nihon University
Wataru IWASE, Yachiyo Industry CO., LTD.

C112 Development of numerical simulation techniques for the layered manufacturing process of FDM 3D printers
Yo NAGUMO, Tokyo University of Science
Masayuki ARAI, Tokyo University of Science

Thursday, November 28, Room D

9:20–11:00
B3. Energy and Environment: Hydrogen Technology
Chair: Kazuyuki SHIMIZU, Tottori University

B303 TEM observation of hydrogen-induced quasi-cleavage fracture in Aluminium alloy
Kyosuke HIRAYAMA, Kyoto University
Miharu DOI, Kyoto University
Hiroyuki TODA, Kyushu University
Hiro FUJIHARA, Kyushu University
Kazuyuki SHIMIZU, Tottori University

B308 A mechanism behind hydrogen-assisted fatigue crack growth in ferrite-pearlite steel focusing on the thermally-activated hydrogen-dislocation interaction
Osamu TAKAKUWA, Kyushu University / National Institute for Materials Science (NIMS)
Yuhei OGAWA, National Institute for Materials Science (NIMS)

B309 Characterization of creep deformation behavior of 304 stainless steel in high temperature hydrogen environment
Haruki KINOSHITA, Tohoku University
Yoichi TAKEDA, Tohoku University
Terumichi TAKAHASHI, Tohoku University

B310 Evaluation of hydrogen compatibility of Cr-Mo steel under fatigue loading by continuous hydrogen charging methods
Kosuke TOYOTA, Fukuoka University
Takashi MATSUO, Fukuoka University
Masahiro ENDO, Fukuoka University

B311 Evaluation of martensitic transformation and surface microcracks of hydrogen-charged austenitic stainless steels using eddy current testing
Yasunari KURE, Tohoku University
Tetsuya UCHIMOTO, Tohoku University
Saya AJITO, Tohoku University
Motomichi KOYAMA, Tohoku University
Eiji AKIYAMA, Tohoku University
Sho TAKEDA, Ishinomaki Senshu University

13:40–15:00
B3. Energy and Environment: Hydrogen Technology
Chair: Kyosuke HIRAYAMA, Kagawa University

B312 First-principles study on the hydrogen absorption energy in Fe-Cr-Ni ternary systems: Dis-synergy effect between Cr and Ni atoms
Junichiro MORIYAMA, Kyushu-University

B313 Synthesis of rGO-Supported Mg-Fe Hydrogen Storage Material and the Hydrogenation and Dehydrogenation Properties
Shuma ITO, Meiji University
Koki NAGASHIMA, Meiji University
Kohta ASANO, National Institute of Advanced Industrial Science and Technology (AIST)
Mitsuo NOTOMI, Meiji University

B314 Metal Hydrides for Hydrogen Energy Applications: Storage, Compression and Purification
Kohta ASANO, National Institute of Advanced Industrial Science and Technology (AIST)
Keita SHINZATO, National Institute of Advanced Industrial Science and Technology (AIST)
Veronique CHARBONNIER, National Institute of Advanced Industrial Science and Technology (AIST)
Hyunjeong KIM, National Institute of Advanced Industrial Science and Technology (AIST)
Kouji SAKAKI, National Institute of Advanced Industrial Science and Technology (AIST)

B315 Effect of Ni-based alloy weldments microstructure on hydrogen embrittlement
Chenjun YU, The University of Tokyo
Shohei URANAKA, The University of Tokyo
Eita TOCHIGI, The University of Tokyo
Tomoya KAWABATA, The University of Tokyo

Thursday, November 28, Room E

9:40–11:00
E1. Biological and Soft Materials: Biological and Natural Materials
Chair: Hiroshi YAMADA, Kyushu Institute of Technology

E109 Finite element analysis of contact stress change in knee joint with degeneration of cartilage and meniscus
Hiroto MURAYAMA, Hirosaki University
Kazuhiro FUJISAKI, Hirosaki University
Kazuhiko SASAGAWA, Hirosaki University
Kotaro MIURA, Hirosaki University

E110 Evaluation of an oblique screw for thumb carpometacarpal joint arthrodesis by using finite element analysis
Kazuma TATSUMI, Kanazawa University
Taiki NISHI, Kanazawa University
Akihiro KUROSAWA, Kanazawa University
Masahiro HIGUCHI, Kanazawa University
Kaoru TADA, Kanazawa University
Hiroshi TACHIYA, Kanazawa University

E111 Analysis of stress distribution in the femoral bone surrounding short hip stem: Comparison among femurs with different cortical bone thicknesses
Jonas Aditya PRAMUDITA, Nihon University
Yusuke KATOH, Nihon University
Nobuhiro KAKU, Oita University

E112 Three-dimensional quantification of articular surface shape of distal femur
Koichi KOBAYASHI, Niigata University
Koki SUZUKI, Saiseikai Utsunomiya Hospital
Tomoharu MOCHIZUKI, Niigata University
Makoto SAKAMOTO, Niigata University

13:40–15:00
E1. Biological and Soft Materials: Biological and Natural Materials
Chair: Koichi KOBAYASHI, Niigata University

E113 Morphological and Mechanical characterization of Partially and Fully Demineralized Dentin
Duha Ali Falah ALMALLAHI, Hokkaido University

E114 Collapse and microarchitecture of cancellous bone in bovine femur under compressive loading
Arata YAMAGAMI, Hokkaido University
Youhei NUMATA, Hokkaido University
Mari KASAI, Hokkaido University
Satoshi YAMADA, Hokkaido University
Masahiro TODOH, Hokkaido University

E115 Development of haptic triaxial stress sensor system for tracking deflected blood vessels during vascular puncture
Nachi SUZUKI, Hirosaki University
Kazuhiko SASAGAWA, Hirosaki University
Kazuhiro FUJISAKI, Hirosaki University
Kohtaroh MIURA, Hirosaki University

E116 Stress Analysis of Intimal Flap in Dissected Aorta with Disc-like Finite Element Models
Hiroshi YAMADA, Kyushu Institute of Technology
Ryoji OGAWA, Kyushu Institute of Technology
Kiyotsugu SEKIOKA, Sekioka Clinic

Thursday, November 28, Room F

13:00–13:40
Poster Session

D151P Enhancing the mechanical properties and heat-resistant of selective laser melted 2219 aluminum alloy by NiTi addition
Shuaishuai QIN, Fujian University of technology
Zaihua LIU, Fujian University of technology
Xu HUANG, Fujian University of technology
Weidong HUANG, Fujian University of technology
GuangLei LIN, Fujian University of technology

D152P Study on the microstructure and properties of a novel TC4-Cu alloy fabricated by selective laser melting
Xu HUANG, Fujian University of Technology
Hong WANG, Fujian University of Technology
Shuaishuai QIN, Fujian University of Technology
Weidong HUANG, Fujian University of Technology

D153P Density functional theory study of the effects of tension/compression and elemental substitution on the prismatic slip in Mg alloys with long-period stacking ordered structures
Naoki UEMURA, Kyoto University of Advanced Science
Ryosuke MATSUMOTO, Kyoto University of Advanced Science

D251P Strength properties of palladium polycrystals subjected to hydrogen environment
Koyo NAGAI, Kansai University
Yoshimasa TAKAHASHI, Kansai University
Masanori TAKUMA, Kansai University
Ken-ichi SAITOH, Kansai University
Tomohiro SATO, Kansai University

D252P Twist-Induced Disclination Nucleation in Carbon Nanotube Bundles: A Molecular Dynamics Study
Tong LU, Institute of Science Tokyo (Tokyo Institute of Technology)
Xiao-Wen LEI, Institute of Science Tokyo (Tokyo Institute of Technology)
Toshiyuki FUJII, Institute of Science Tokyo (Tokyo Institute of Technology)

D253P Molecular Dynamics Study of the Effect of Composition on Elastic Properties of Silicon Oxynitride Films
Sakurako MIYAZAKI, The University of Tokyo
Hiroki SAKAKIMA, The University of Tokyo
Keigo OGAWA, The University of Tokyo
Satoshi IZUMI, The University of Tokyo

D351P Effect of Nonmetallic Inclusions in Ti-Ni Alloys on the Low Cycle Fatigue Behavior
Hidemasa TORIHARA, Furukawa Techno Material Co., Ltd.
Sumio KISE, Furukawa Techno Material Co., Ltd.
Kenji URUMA, Furukawa Techno Material Co., Ltd.
Fumiyoshi YAMASHITA, Furukawa Techno Material Co., Ltd.
Tetsushi HABU, Furukawa Techno Material Co., Ltd.
Hiroki CHO, The University of Kitakyushu
Ryosuke MATSUI, Aichi Institute of Technology
Minoru NISHIDA, Kyushu University

D352P The effect of niobium-vanadium composite microalloying on the extreme tip cold bending of hot press forming steel
Mingtu MA, China Automotive Engineering Research Institute Co., Ltd
Hongzhou LU, CITIC Metal Co., Ltd
Guangyao WANG, China Automotive Engineering Research Institute Co., Ltd
Bo LI, Zhongxin (Chongqing) Ultra High Strength Materials Research Institute Co., Ltd
Jingwei LI, Zhongxin (Chongqing) Ultra High Strength Materials Research Institute Co., Ltd

E151P Performance Evaluation of Pedestrian Helmets by Multibody Dynamics Analysis - Influence of Walking Posture and Collision Behavior on Head Injury Risk-
Issei WATANABE, University of Yamanashi
Yasumi ITO, University of Yamanashi
Ryuichi YAMADA, University of Yamanashi

Tetsuya NEMOTO, University of Yamanashi
Yoshiyuki KAGIYAMA, University of Yamanashi
Takashi NONAKA, University of Yamanashi
Masayoshi TSUCHIYA, University of Yamanashi
Fugo NISHIMURA, University of Yamanashi
Mitsuhiro SUGITA, OGK KABUTO Co., Ltd.
Yuzuru TASHIRO, Shizuoka Children's Hospital

E152P In Vivo Evaluation of Human Skin Viscoelastic Properties for Palpation Quantification - Investigation of Annual Changes in Skin Viscoelasticity and the Effects of Body Composition on Skin Viscoelasticity-

Kai AMANO, University of Yamanashi
Yasumi ITO, University of Yamanashi
Ryuichi YAMADA, University of Yamanashi
Yoshiyuki KAGIYAMA, University of Yamanashi
Tetsuya NEMOTO, University of Yamanashi
Yi Siu KOAY, University of Yamanashi
Hiroshi MITSUI, University of Yamanashi

E153P ZnO and TiO2 Modified Chitosan/Polyvinyl alcohol Bionanocomposite for In Vitro Skin Anticancer Activity

Dong Kil SHIN, Yeungnam University

E251P Volume change and temperature variation of rubber dumbbell specimen under unixial tension: a numercial approach

Weiyao YANG, Institute of Science Tokyo (Tokyo Institute of Technology)
Hirotsugu INOUE, Institute of Science Tokyo (Tokyo Institute of Technology)

Friday, November 29, Room A

9:00–10:00
D2. Nano/Micro/Meso Aspects of Materials: Nano/Micro Mechanics
Chair: Atsutomo NAKAMURA, Osaka University

D215 Adhesion force during a pull-up process of indentation of soft materials
Hideo KOGUCHI, Niigata Institute of Technology

D216 Fabrication of highly ordered Al nanowire arrays based on stress-induced atomic diffusion
Seiya HAYASHI, Nagoya University
Yasuhiro KIMURA, Nagoya University
Yang JU, Nagoya University
Yuhki TOKU, Nagoya University

D217 Fracture in Ceramic Prostheses: A Challenge in Digital Dentistry
Ling YIN, The University of Adelaide
Yoshitaka NAKANISHI, Kumamoto University

10:20–11:20
D2. Nano/Micro/Meso Aspects of Materials: Nano/Micro Mechanics
Chair: Atsutomo NAKAMURA, Osaka University

D218 Ab initio Study of Quantum Electronic Strengthening of Covalent Materials by Excess Electron/Hole Doping
Hiroki NODA, Kyoto University
Shumpei SAKAGUCHI, Kyoto University
Ryoga FUJITA, Kyoto University
Susumu MINAMI, Kyoto University
Hiroyuki HIRAKATA, Kyoto University
Takahiro SHIMADA, Kyoto University

D219 First-principles investigation of the mechanical response of SiC crystals under excess carrier conditions
Hiroki SAKAKIMA, The University of Tokyo
Satoshi IZUMI, The University of Tokyo

D220 Implementation of atomic quantum electronic force from first-principles calculation
Susumu MINAMI, Kyoto University
Yoshimasa ABE, Kyoto University
Takahiro SHIMADA, Kyoto University

11:30–12:00
Closing Ceremony

Friday, November 29, Room B

9:00–10:00
E2. Biological and Soft Materials: Soft Materials
Chair: Tomohiko SANO, Keio University

E215 Instability patterns in gel films on fiber-incorporated substrates
So NAGASHIMA, Nagoya University
Shunsuke HAYASHI, Nagoya University
Akbar SOLHTALAB, Binghamton University, State University of New York
Seishiro MATSUBARA, Nagoya University
Mir Jalil RAZAVI, Binghamton University, State University of New York
Dai OKUMURA, Nagoya University

E216 Effect of the second strain invariant on crease instability
Daiki OKAMURA, Nagoya University
Seishiro MATSUBARA, Nagoya University
So NAGASHIMA, Nagoya University
Dai OKUMURA, Nagoya University

E217 First-Principles Calculations on Synthetic Reaction of Silicone Hydrogel Copolymers
Kahori HATA, Tohoku University
Ken SUZUKI, Tohoku University
Hideo MIURA, Shimane University

10:20–11:20
E2. Biological and Soft Materials: Soft Materials
Chair: Dai OKUMURA, Nagoya University

E218 A data-driven analysis approach for rate- and state-dependent frictional sliding behavior using LSTM network
Kai XING, Yokohama National University
Shingo OZAKI, Yokohama National University

E219 Mechanism of Curling Behavior in Plain Knitted Fabrics
Kotone TAJIRI, Keio University
Riki MURAKAMI, Osaka University
Ryuichi TARUMI, Osaka University
Tomohiko G. SANO, Keio University

E220 Twist Deformation in Trefoil Knot
Taiki GOTO, Keio University
Tomohiko SANO, Keio University

Friday, November 29, Room C

9:00–10:00

C1. Composites, Joints and Coatings: Composites

Chair: Yoshinobu SHIMAMURA, Shizuoka University

C113 Fundamental Study on Remaining Life Evaluation of CFRP Structures Under Cyclic Loading using Remaining Life Indicator
Shunsuke NAKAMURA, Institute of Science Tokyo (Tokyo Institute of Technology)
Masaaki SAMEJIMA, Institute of Science Tokyo (Tokyo Institute of Technology)
Yoshihiro MIZURTANI, Institute of Science Tokyo (Tokyo Institute of Technology)

C114 A Study on Fiber Breakage Detection for End-of-Life Prediction of CFRP Structures
Masaaki SAMEJIMA, Institute of Science Tokyo (Tokyo Institute of Technology)
Shunsuke NAKAMURA, Institute of Science Tokyo (Tokyo Institute of Technology)
Kaita ITO, National Institute for Materials Science
Yoshihiro MIZUTANI, Institute of Science Tokyo (Tokyo Institute of Technology)

C115 In-situ Observation of Fracture Mechanisms of Unidirectional CNT Yarn/Epoxy Matrix Composites by Synchrotron Radiation X-ray Imaging
Sojun NAKANO, Tohoku University
Haruki OYAMADA, Tohoku University
Go YAMAMOTO, Tohoku University

10:20–11:20

C1. Composites, Joints and Coatings: Composites

Chair: Go YAMAMOTO, Tohoku University

C116 Evaluation of Effects of Annealing and Diameter on Tensile Strength of Carbon Nanotube Using Ultrasonic Cavitation Induced Fragmentation
Jin SHIRASAKA, Shizuoka University
Yoshinobu SHIMAMURA, Shizuoka University / Waseda University
Tomoyuki FUJI, Shizuoka University
Yoku INOUE, Shizuoka University

C117 Development of short Ti fiber reinforced porous Ti for biomedical applications
So SHIMIZU, Shizuoka University
Tomoyuki FUJII, Shizuoka University
Yoshinobu SHIMAMURA, Shizuoka University

C118 Fiber Orientation Mechanism of Aluminum-Based Composite Containing Short Carbon Fibers Having Anisotropic Thermal Conductivity Fabricated by Repeated Rolling and Annealing
Kohei FUKUCHI, Akita University
Ken-ichi OHGUCHI, Akita University
Kengo KUROSAWA, Akita Industrial Technology Center
Atsuko TAKITA, Akita Industrial Technology Center