2023 US-Japan Joint Symposium for Composite Materials Programme

Organized by Composite Materials Research Division, Tokyo University of Science

June 14th		Room 1		Room 2
9:15		Opening (Jun Koyanagi)		
9:20~9:40	Chair: Sota Oshima	Composites- - - Enduring Integration of Strength Across Frontiers Erian A. Armanios(UT Arlington)	Chair: Paul Davidson	A new electrochemical method for the measurement of the Fick diffusion coefficient on CFRP environment-resistant thin-layer coating CFRP Tetsuya Morimoto(JAXA)
9:40~10:00		Molecular Dynamics Simulation of Brittle Fracture Behavior of a Thermosetting Polymer Yutaka Oya(TUS), Naoki Yamada(TUS),Jun Koyanagi(TUS)		Unraveling the Foundations for In-Situ Consolidated Automated Fiber Placement Mehran Tehrani(UCSD)
10:00~10:20		Molecular Dynamics Examination of Healable Polymer Composites With Covalent Adaptive Networks Aniruddh Vashisth(Seattle-WA)		Extended Variational Analysis for Composite Laminates with Alternating Material Properties in The Longitudinal Direction Shinji OGIHARA(TUS), M. J. Mohammad FIKRY(TUS),Nao Yamazaki(TUS),Vladimir Vinogradov(UoN)
10:20~10:40		Analytical Consideration for Stiffness of Recycled CF Nonwoven Composite Considering Effect of Curved Fiber Mio SATO(JAXA), Hiroshi Suemasu(JAXA),Masumi Higashide(JAXA), Yuichi Ishida(JAXA), Sunao Sugimoto(JAXA)		Stress Function Approach to Composite Materials Seiichi Nomura(UT Arlington)
10:40~11:00	BREAK			
11:00~11:20	Chair: Marianna Maiaru	Quasi-Static Tensile Properties of Dry and Epoxy-Impregnated CNT Yarn Chuck Bakis(Penn State), W. Henry Dyer(Penn State)	Chair: Ryosuke Matsuzaki	A Non-Local Damage Model for Progressive Failure Analysis of composite Laminates Lu Xin(UTokyo), Ryo Higuchi(UTokyo), Tomohiro Yokozeki(UTokyo)
11:20~11:40		Experimental Study on The Damage Behavior of CFRP Laminate with Ply Discontinuity M. J. Mohammad FIKRY(TUS), Vladimir Vinogradov(UoN), Shinji Ogihara(TUS)		Elucidating The Nano and Micro Effect of Aramid Pulp Interlaminar Reinforcement in Woven CFRP Composites Subjected to Low-Velocity Impacts Alejandra Castellanos(UTEP), Zackery Nieto(UTEP), Emmanuel Vielma (UTEP)
11:40~12:00		On The Use of Machine Learning in Quantifying Low Velocity Impact (LVI) Delamination from Ultrasound (UT) Inspection Data Paul Davidson(UT Arlington), Don Nguyen(UT Arlington), Karen Demille(AFRL), Vipul Ranatunga(AFRL)		Cracking Behavior in Cross-Ply CFRP Laminates Initiating from Microdefects under Monotonic and Cyclic Loading Sota Oshima(TMU), Ryo Higuchi(UTokyo), Satoshi Kobayashi(TMU)
12:00~12:20		Estimation of Fatigue Lifetime of CFRP Cross-Ply Laminates Using Entropy Failure Criterion Huachao Deng(TUS), Asa Mochizuki(TUS), Jun Koyanagi(TUS)		Layered Composites for Structural, Energy, Sustainability, and Health Applications Kenan Song(ASU)
12:20~12:40		Advanced Composite Novel Delamination Injection Repair Procedure for Restoration of Laminate Mechanical Properties Hyonny Kim(UCSD), Justin Massey(UCSD)		Effect of Fiber Waviness in Prepreg-based Discontinuous Carbon Fiber Composites on Tensile Strength Izumi Matsukura(IHI Corporation), Sho Murata(IHI Corporation), Akira Kobiki(IHI Corporation), Lisa Ishikawa(Shimadzu corporation)
12:40~13:50	LUNCH BREAK			
13:50~14:10	Chair: Lu Xin	A Decoder Transformer to Homogenize the Non-Linear Behavior of a Random 2-D Composite Kishore Pochiraju(SIT), Emil Pitz (SIT)	Chair: Muhammad Fikry	Optimization of Variable Thickness 3D Printing of Continuous Carbon Fiber-Reinforced Composites Ryosuke Matsuzaki(TUS), Haruya Tanaka(TUS)
14:10~14:30		Dynamic Delamination Analysis of CFRP Laminate Due to Impulse-Excited Bending Wave Sho Kajihara(UTokyo), Ryo Higuchi(UTokyo), Tomohiro Yokozeki(UTokyo), Takahira Aoki(UTokyo)		Additive Manufacturing and In-Situ Frontal Curing of Fiber-Reinforced Thermoset Composites Mostafa Yourdkhani(CSU), Morteza Ziaee (CSU)
14:30~14:50		Damage Identification and Prognosis in Composite Aerospace Structures by Ultrasonic Guided Waves Defect Signatures Margherita Capriotti(SDSU), Kalib Varela (ASU),Andrew Ellison (Palo Alto), Eric H. Kim (NAVAIR), Francesco Lanza di Scalea (UCSD), Hyonny Kim (UCSD)		Regularized Extended Finite Element Modeling of Textile Composites Endel.V.Iarve(UT Arlington)
14:50~15:10		Data-Driven Microstructural Methods Andrew Makeev(UT Arlington), Sarvenaz Ghaffari(UT Arlington), Yuri Nikishkov(UT Arlington), Guillaume Seon(UT Arlington)		3D Printable Graphene-Polypropylene Nanocomposites for Flame Retardancy and Electromagnetic Interference Shielding Michael Bozlar(UT Arlington)
15:10~15:30		Effect of Stochastic Variations in Material and Geometric Parameters on the Initiation of Fiber Kinking Damage in Fiber-Reinforced Polymeric Composites Paulina Díaz-Montiel(USD), Mario Ramírez Cisneros (SDSU), Satchi Venkataraman (SDSU)		Buckling Load Optimization Of Variable Thickness And Fiber Angle Composite Plate Using Fem And Semi-Analytical Method Paul Davidson(UT Arlington), Jeegar Patel(UT Arlington), Sandesh Amgai(UT Arlington)
15:30~15:50	BREAK			
15:50~16:50	Poster session @ another meeting room			
17:30~20:00	Social dinner L'Alliance (Tel: 03-3269-0007; Map: https://goo.gl/maps/CBjo7VWDrAiHUv558)			

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June 15th		Room 1		Room 2
9:00~9:40	Chair: Hyonny Kim	Machine Learning for Damage Detection and Analysis in Composite Materials Olesya I. Zhupanska(UA), Pavlo A. Krokhmal(UA)		
9:40~10:20	Chair: Jun Koyanagi	Non-Destructive Evaluation of CFRP Microscopic Structure by Using X-Ray Talbot-Lau Interferometer Akinori Yoshimura(NU), Yusuke Kasai(NU), Keisuke Asano(NU), Keita Goto(NU), Masahiro Arai(NU)		
10:20~10:40	BREAK			
10:40~11:00	Chair: Pavana Prabhakar	Numerical Simulation of Fatigue Fracture of CFRP Rope Hinako Shiozaki(TUS), Ryo Inoue(TUS), Ryo Higuchi(UTokyo), Jun Koyanagi(TUS)	Chair: Akinori Yoshimura	Peridynamics For Multi-Scale Modeling to Determine Damage Paths in Fiber-Reinforced Composites Erdogan Madenci(UA), Nam Phan(NAVAIR)
11:00~11:20		Fiber Architecture-Driven Failure Mechanics of Woven Composites Pavana Prabhakar(UW-Madison), Hridyesh Tewani(UW-Madison), Jackson Cyvas(UW-Madison)		Recession Behavior of Si Free Ultra-High Temperature Ceramic Matrix Composites Yutaro Arai(TUS), R. Inoue(TUS)
11:20~11:40		Application of Tilted FBG Sensors to Monitor the Molding Process of CFRP Laminates Shin-ichi TAKEDA(JAXA), Shinsaku Hisada(JAXA), Toshio Ogasawara(TUAT)		Damage Tolerancing in Carbon Fiber Composites Under Impact Fatigue Leslie Lamberson(Colorado School of Mines), Isabella Mendoza (Colorado School of Mines)
11:40~12:00		Multiscale Bulk and Frontal Polymerization Modeling of Carbon Fiber/Polydicyclopentadiene Woven Composites and Its Experimental Validation Juhyeong Lee(USU), Dong-Jun Kwon (GNU)		Full-field Strain Measurement of Composite Materials at Micro and Millimeter Scales by the Sampling Moiré Method Shien Ri(AIST), M. J. Mohammad Fikry(TUS), Shinji Ogihara(TUS)
12:00~12:20		A New Method for Predicting Residual Strength and Residual Lifetime of CFRP Based on Entropy Damage Criteria Jun Koyanagi(TUS)		Multiscale Process Modeling of Polymer-Derived Composites Marianna Maiaru(UMass), Michael Olaya (UMass)
12:20~	Closing (Jun Koyanagi)			

June 16th	JAXA Special Tour Contact person: Dr. Mio Sato (JAXA), sato.mio@jaxa.jp
9:00~9:45	Meet at west entrance of JR Iidabashi sta. and go to JR Mitaka sta.. Dr.Sato will wait for everyone at meeting point (the bakery shop will be a landmark). Bakery shop ↓ https://goo.gl/maps/TyvjMmZBifwHVHzC8
9:45~10:00	Ride the shuttle bus
10:00~11:30	Lab. Tour at JAXA Chofu Aerospace Center, Aerodrome Branch
11:30~12:00	Ride the shuttle bus (to JR Mitaka sta.)

POSTER SESSION	
1	Impact Damage Behavior of Thin-ply CFRP Laminates with Defects Naoki Takatsuka(KU), B. Kötter(KU), K. Yamada(Industrial Technology Center of Fukui Prefecture), M. Nishikawa(KU)
2	Evaluation Of Molding Accuracy of Continuously Twisted Fiber Composites Keigo Nakajima(TUS), Ryosuke Matsuzaki(TUS)
3	Development of Automatic Three-Point Bending Test Mechanism For PEEK90G/CF 3D Printer Yuichiro Yuge(TUS), Ryosuke Matsuzaki(TUS)
4	Fiber orientation analysis of recycled CF nonwoven and elastic modules estimation of recycled CFRP Hiroshi Maeda(HU), Masumi Higashide (Hosei University, JAXA) Mio Sato(JAXA), Yuichi Ishida(JAXA), Sunao Sugimoto (JAXA)
5	Shape Design of Reinforcement For 3D Printer by Applying Traveling Salesman Problem DanielYuki Matsushima(TUS), Ryosuke Matsuzaki(TUS)
6	Development of Carbon Fiber/Carbon Nanotube/Shape-Memory Polymer Composites and Experiment of Shape Fixity and Recovery Hisaki Ogatsu(TMU), A. Torisaka(TMU)
7	Comparison of Fatigue Lifetimes Predicted by Kinetic Crack Growth Theory and Micro Scale Numerical Simulation Based on Entropy Damage Criterion Keitaro Toda(TUS), Deng Huachao (TUS), Jun Koyanagi (TUS)
8	Damage Detection by Thermal Property Measurement for CFRP Subjected to Different Load Histories Natsuko Kudo(TUS), Ryohei Fujita (NU), Shun Abe (TUS), M. Fikry (TUS), Shinji Ogihara (TUS), Hosei Nagano (NU), Jun Koyanagi
9	Comprehensive Evaluation of Bond Strength in Ultrasonic Welding of Thermoplastic CFRP With Mesh Energy Director Maruri Takamura(TUS), Minori Isozaki(TUS), Shinichi Takeda(JAXA), Jun Koyanagi(TUS)
10	A Hybrid Molecular Dynamics-Monte Carlo Simulation for Covalent Bond Dissociation in Thermosetting Polymers Naoki Yamada(TUS), Yutaka Oya(TUS), Jun Koyanagi(TUS)