TUESDAY, November 30

	ROOM A	ROOM B
8:45	Registration (8:45-17:30)	
9:30	Opening Ceremony	
	Plenary Sessions (Chair: ***N. Takeda*** and ***W. K. Chiu***)	
9:40	PL-1 Sensor, Database and Analysis Platform for Structural Health Monitoring of Buildings **Akira Mita (Keio University)**	
10:20	PL-2 Structural Health Monitoring on Civil Infrastructures Through Output-Only Measurements **Chin-Hsiung Loh (National Taiwan University)**	
11:00	PL-3 Insights to Structural Health Monitoring Research at the Air Force Office of Scientific Research **David Stargel (AFOSR)**	
11:40	Lunch	
	Session: Aerospace 1 Chair: ***C. G. Kim*** and ***R.P. Rulli***	Session: Civil Infrastructure 1 Chair: ***A. Mita*** and ***Chin-Hsiung Loh***
12:50	1A1 Monitoring of Buckling Behaviors in Composite Stiffened Panel with Impact Damages Using Fiber-Optic Sensors **S.Takeda (JAXA), Y. Aoki, Y. Nagao**	1B1 Smart Railways in Italy **A. Cusano (Univ Sannio), A. Iele, F.A. Bruno, A. Laudati, G. Parente, M. Giordano, N. Mazzino, G. Bocchetti**
13:10	1A2 Identification of Impact Force Acting on CFRP Structures Using Experimental Transfer Matrices **S. Atobe (Tohoku Univ), N. Hu, H. Fukunaga**	1B2 Fiber Optic FBG-based Inclinometer for Monitoring of Soil Slope Movement **G.-H. Jin (KRISS), I.-B. Ihn, G.-J. Kim, D.-C. Seo**
13:30	1A3 Impact Damage Monitoring of CFRP Structures Using Hierarchical Fiber-optic-based Sensing System **H. Tsukamoto (Univ Tokyo), H. Banshoya, S. Minakuchi, N. Takeda**	1B3 Sensor Agent Robot for Structural Health Monitoring of Buildings **N. Lee (Keio Uinv), Y. Kaji, A. Mita**
13:50	1A4 Detection of Impact Locations on Composite Wing Structure Using FBG Sensors **Y.-G. Lee (KAIST), B.-W. Jang, Y.-Y. Kim, C.-G. Kim, C.-Y. Park, B.-W. Lee**	1B4 High-throughput Multihop Wireless Sensor Network Using Multiple RF Channels and Its Application to Suspension Bridge Monitoring **T. Nagayama (Univ Tokyo), M. Ushita, Y. Fujino**
14:10	1A5 Effects of the Self Distortion of Embedded FBG Sensors on the Spectral Response due to Torsional and Combined Loads **G.C. Kahandawa (University of Southern Queensland, Australia), J.A. Eppaarachchi, H. Wang, J. Canning**	1B5 A Novel Method of Damage Quantification for Flexural Structures with Distributed Long-gage Fiber Optic Sensors **Y. Tang (Sotheast Univ), Z. Wu, C. Yang, C. Wan, G. Wu**
14:30	1A6 Topology Holistic Design of a Wireless SHM System for Implementation in the Aft Pylon Fairing of a Commercial Jet Airplane **R. Montheard (CNRS-LAAS), C. Renard, M. Bafleur, J.M. Dilhac**	1B6 Long-distance Remote Measurement of Static and Dynamic Displacement for Large-scale Structures Using a Vision Inspection System **Y.Q. Ni (Hong Kong Polytec Univ)**

	ROOM A	ROOM B
14:50	Coffee	
	Session: Aerospace 2 Chair: ***J.M. Dilhac*** and ***T. Kosaka***	Session: Civil Infrastructure 2 Chair: ***Z.S. Wu*** and ***C. Rainieri***
15:20	1A7 Intelligent Health Monitoring for Aerospace Vehicles (IHMAV) Program **P.T. Birt (Boeing R&T Australia), I.S. Cole, S. Galea**	1B7 Assessment of Structural Performance of Steel Building on Shake Table Using Multi-Input Multi-Output Models **H.T. Hien (Keio Univ), A. Mita**
15:40	1A8 A Study on Low-velocity Impact Induced Damage Assessment of Composite Laminates using Fiber Bragg Grating Sensors **B.-W. Jang (KAIST), Y.-G. Lee, Y.-Y. Kim, C.-G. Kim, C.-Y. Park, B.-W. Lee**	1B8 Monitoring and Modeling of a Flexible Retaining Wall **C. Rainieri (Univ Molise), A. Dey, G. Fabbrocino, F. Santucci de Magistris**
16:00	1A9 Development of Fiber Optic Sensors for Measuring Low-frequency AE Signals **T. Kosaka (Kochi Univ Tech), K. Osaka, Y. Sawada**	1B9 A New Type of Intelligent Wireless Sensing Network for Health Monitoring of Long Span Bridges **Y. Lei (Xiamen Univ), Z.L. Lai, Y.L. Tang, J.X. Wang**
16:20	1A10 Acoustic Emission Analysis for Impact Damage Detection of CFRP Pressure Vessels **S. Sugimoto (Tokyo Inst Tech), Y. Mizutani, A. Todoroki, R. Matsuzaki**	1B10 Bridge Health Monitoring, Damage Detection and Safety Assessment——Research and Practice from Bridge Dynamic Lab in SE.U **Z. Zong (Southeast Univ), Z. Xia**
16:40	1A11 Development of a Fiber Bragg Grating Acoustic Emission Measurement System for Space Rockets **T. Nakajima (IHI Insp & Instr), E. Sato, H. Tsuda, A, Sato, N. Kawai, N. Tanaka, Y. Tsurui, N. Sakyo**	1B11 Active Debonding Detection for a Concrete-filled Steel Tube Specimen with Piezoceramics **B. Xu (Hunan Univ), T. Zhang, G. Song, H. Gu**
17:00	1A12 A Fundamental Study of Failure Monitoring Cone Washers for CFRP Single-lap Bolted Joints. **T. Katsumata (Tokyo Inst Tech), Y. Mizutani, A. Todoroki, R. Matsuzaki**	1B12 Structural Monitoring Utilizing Smart Sensors and Inspection Robot **Y. Nitta (Ashikaga Inst Tech), A. Nishitani, M. Watanabe, S. Inai, I. Ohdomari**
17:20	1A13 Shape Reconstruction of Unsymmetric CFRP Laminates for Accurate Manufacturing of Composite Structures **M. Nishio (Univ Tokyo), N. Takeda**	1B13 Structural System Identification Using a Self-adaptive Differential Evolution Algorithm **F. Li (Ibaraki Uinv), Z. Wu, H. Tang, C. Wan**
17:40	End of Day	
17:50 19:00	Welcome Reception	

WEDNESDAY, December 1

	ROOM A	ROOM B
8:45	Registration (8:45-16:30)	
	Session: Aerospace 3 Chair: ***A. Todoroki*** and ***P. Foote***	Session: Structural Identification Chair: ***Y.Q. Ni*** and ***H. Sohn***
9:00	2A1 Memorization and Detection of Arrested Crack in Foam Core Sandwich Structures using Embedded Plastic Materials and Fiber-optic Sensors **S. Minakuchi (Univ Tokyo), I. Yamauchi, N. Takeda, Y. Hirose**	2B1 Localized Detection of Structural Damage Using Distance Measures of ARX and ARMAX Models **Z. Xing (Keio Univ), A. Mita**
9:20	2A2 Embedded Blade Microsystem and Events Recorder for Drone Structural Health Monitoring **M. Lastapis (CNRS-LAAS), C. Escriba, G. Aurioil, J.L. Boizard, J.M. Dilhac, J.Y. Fourniols**	2B2 System Identification Under Different Ambient Excitations **M. Döhler (INRIA, Centre Rennes), D. Siringoringo, L. Mevel**
9:40	2A3 Monitoring of Dimensional Stability of CFRP Mirrors for Satellite Telescopes due to Moisture Absorption Using FBG Sensors **S. Utsunomiya (JAXA), T. Kamiya, R. Shimizu**	2B3 Nonlinerar Restoring Force Identification with a Power Series Polynominal Under Incomplete Excitations **B. Xu (Hunan Univ), J. He, S.F. Masri**
10:00	2A4 Optical-fiber-based Distributed Sensing of Strain Development in Carbon/Epoxy Composite During Cure **Y. Ito (Univ Tokyo), K. Fujimoto, S. Minakuchi, T. Mizutani, N. Takeda, H. Koinuma, T. Shimizu**	2B4 Modal Parameter Monitoring in the Presence of Dynamic Interaction Effects **C. Rainieri (Univ Molise), G. Fabbrocino, G. Manfredi, M. Dolce**
10:20	2A5 Full-field Monitoring of Resin Flow Using an Area-sensor Array in a VaRTM Process **R. Matsuzaki (Tokyo Inst Tech), S. Kobayashi, A. Todoroki, Y. Mizutani**	2B5 Evaluation of Limit of Detection of Statistical Damage Diagnosis Method Under Unsteady Vibration Condition **Y. Nakazawa (Gunma Univ), A. Iwasaki**
10:40	2A6 Life Cycle Monitoring of CFRP VARTM Structure by Distributed Fiber-optic Sensors **S. Minakuchi (Univ Tokyo), N. Takeda, S. Takeda, Y. Nagao, X. Liu**	2B6 Impedance-based Bolt Loosening Detection Under Varying Temperature and Loading **M.-K. Kim (KAIST), H.-J. Lim, H. Sohn, C.-Y. Park**
11:00	2A7 Piezoelectric Sensor/Actuator Network for SHM and Damage Detection on Airplane Door **H. Boukabache (CNRS-LAAS), S. Ksouri, C. Escriba, J.Y. Fourniols**	2B7 A Structural Health Monitoring System for the RAPTOR Telescopes **J. Wren (Los Alamos Nat Lab), D. Mascareñas, C. Farrar**
	Plenary Sessions (Chair: ***F.K. Chang*** and ***S. Galea***)	
11:20	PL-4 Self-sensing Composites Using Electrical Resistance Changes **Akira Todoroki (Tokyo Institute of Technology)**	

	ROOM A	ROOM B
11:50	Lunch	
12:50	PL-5 The Aerospace Industry Steering Committee on Structural Health Monitoring and Management: Progress on SHM Guidelines for Aerospace. **Peter Foote (BAE Systems)**	
13:20	PL-6 Airbus View on SHM for Aircraft Application **Clemens Bockenheimer (Airbus)**	
14:00	Coffee	
	Session: Project Research Chair: ***C. Bockenheimer*** and ***T. Ogisu***	Session: Damage Assessment 1 Chair: ***M. Enoki*** and ***L.W. Salvino***
14:30	2A8 Overview of the JASTAC(The Japan Airbus SHM Technology for Aircraft Composite) Project Activities **Y. Koshioka (RIMCOF), C. Bockenheimer, N. Takeda**	2B8 Acoustic Emission Behavior During Low-cycle Fatigue Testing of Nuclear Component Materials **M. Ohta (Tokyo Inst Tech), Y. Mizutani, A. Todoroki, R. Matsuzaki**
14:50	2A9 Material Qualification for SHM Technologies Implementation in Aerospace Field **T. Ogisu (Fuji Heavy Ind), H. Soejima, N. Takeda, Y. Koshioka**	2B9 Monitoring Crack Growth in Thick Aluminium Plates **Gurjiwan Singh (Florida Int Univ), Gurjashan Singh, L.W. Salvino, B.L. Grisso, I.N. Tansel**
15:10	2A10 Damage Detection of Bolted Composite Joints Using BOCDA Measurement **T. Yari (Mitsubishi Heavy Ind), S. Hasegawa, K. Nagai, Y. Koshioka**	2B10 Development of Smart Stress-memory Patch for Measurement of Fatigue Loading History **T. Shiraiwa (Univ Tokyo), M. Enoki**
15:30	2A11 Practical Application Study of Impact Damage Detection for Composite Airframe Structures Using Optical Fiber Sensors **N. Hirano (Kawasaki Heavy Ind), H. Tsutsui, J. Kimoto, T, Akatsuka, H. Sashukuma, T. Itoh, N. Takeda, Y. Koshioka**	2B11 Cyclic Behavior of Piezoresistive Strain Sensor by Using Carbon Nanofiber/Flexible Epoxy Composite **Y. Shimamura (Shizuoka Univ), K. Kageyama, K. Tohgo, T. Fujii**
15:50	2A12 Development of the Lamb-wave-based SHM System Using FBG/PZT Hybrid Sensor System **H. Soejima (Fuji Heavy Ind), N. Nakamua, T. Ogisu, Y. Okabe, N. Takeda, Y. Koshioka**	2B12 Compression Damage Monitoring Using Electrical Resistance Change for CFRP **A. Todoroki (Tokyo Inst Tech), K, Suzuki, R. Matsuzaki, Y. Mizutani**
16:10	2A13 Structural Health Monitoring of CFRP Airframe Structures by Strain Mapping Using FBG Sensors Through Life Cycle **I. Takahashi (Mitsubishi Electric Co), K. Sekine, H. Takeya, Y. Iwahori, S. Minakuchi, N. Takeda, Y. Koshioka**	2B13 Unsupervised Delamination Detection in CFRP Plates Using Statistical Analysis of Change in Temperature Characteristic of Resistance **Y.Suzuki (Tokyo Inst Tech), A. Todoroki, Y. Mizutani, R. Matsuzaki**
16:30 16:40	End of Day Ride bus to Banquet (Keio Plaza Hotel)	
18:00 20:00	Banquet (Keio Plaza Hotel)	

THURSDAY, December 2

	ROOM A	ROOM B
8:45	Registration (8:45-16:30)	
	Session: Ultrasonics 1 Chair: ***N. Hu*** and ***V. Giurgiutiu***	Session: Damage Assessment 2 Chair: ***K. Koyama*** and ***Gyuhae Park***
9:00	3A1 Study on Interaction of Lamb Wave with Various Damages in Metallic Plates **N. Hu (Chiba Univ), H. Fukunaga, Y. Liu, Y. Li**	3B1 Evaluation of Damage Allowance in the Metal-core PZT Fiber/Aluminum Composite by Acoustic Emission **S. Ikeda (Univ Tokyo), P. Chivavibul, M. Enoki, J. Kunikata, T. Suzuki, H. Asanuma**
9:20	3A2 Modelling the Scattered Wave Field Due to The Presence of a Sub-surface Defect **C. Doherty (Monash Univ), W.-K. Chiu**	3B2 Eddy Current Nondestructive Testing for Carbon Fiber-Reinforced Plastics (CFRP) Using Cross Point Probe **K. Koyama (Nihon Univ), H. Hoshikawa, G. Kojima**
9:40	3A3 Predictive Simulation of Piezoelectric Wafer Active Sensors for Structural Health Monitoring **V. Giurgiutiu (Univ South Calorina)**	3B3 Electrical Resistance Change Method for Dent Monitoring of Thick CFRP Plate **A. Todoroki (Tokyo Inst Tech), Y. Shimazu, Y. Mizutani, R. Matsuzaki**
10:00	3A4 Mechanical Durability of Piezoceramic Transducers for Structural Health Monitoring Applications. **K.A. Tsoi (DSTO), N. Rajic**	3B4 Identification of Gage Factors of Unidirectional CFRP Laminate by Multipoint Voltage Measurement **T. Ohno (Nihon Univ), M. Ueda, T. Nishimura**
10:20	3A5 Impact Detection in Composite Laminates by High-Speed FBG Measurement System Using AWG Filters **N. Watanabe (Univ. Tokyo), M. Shimazaki, Y. Okabe, H. Soejima, T. Ogisu**	3B5 Damage Detection of Large CFRP Structures Using TDR **H. Kurokawa (Tokyo Inst Tech), Y. Mizutani, A. Todoroki, R. Matsuzaki**
	Plenary Sessions (Chair: ***M. Todd***)	
10:40	PL-7 In Situ Structural Health Monitoring Approaches for Military Aircraft Structures **S. Galea (DSTO), N. Rajic, C. Davies, K. Tsoi, C. Rosalie, I. Powlesland**	
	Session: SHM Perspective Chair: ***C.R. Farrar*** and ***L. Cheng***	
11:10	3A7 Embraer Perspective for Maintenance Plan Improvements by Using SHM **R.P. Rulli (Embraer)**	
11:30	3A8 The Needs for SHM Technology Classification **Ingolf Mueller (Stanford Univ), F.K. Chang**	
11:50	Lunch	

	ROOM A	ROOM B
12:50	3A9 SHMTools: A general-purpose Software Tool for SHM Applications **E..B. Flynn (UC San Diego), S. Kpotufe, D. Harvey, E. Figueiredo, S. Taylor, D. Dondi, T. Mollov, M.D. Todd, T. Rosing, G. Park, C.R. Farrar**	
13:10	3A10 Gaussian-DPSM a Modification on Conventional Distributed Point Source Method (DPSM) for Ultrasonic Field Modeling **E.K. Rahani (Univ Arizona), T. Kundu**	
13:30	3A11 Composite Adhesive Joint Health Evaluation Using Chaotically-Modulated Ultrasonic Interrogation **M. Todd (UC San Diego), T. Fasel**	
13:50	3A12 Application of Piezoelectric Active-Sensors for SHM of Wind Turbine Blades **Gyuhae Park (Los Alamos Nat Lab), S.G. Taylor, K.M. Farinholt, C.R. Farrar**	
14:10	3A13 A Novel Damage Identification Approach Based on Structural Dynamic Equilibrium **H. Xu (Hong Kong Polytech Univ), L. Cheng, Z. Su, J.L. Guyader**	
14:30	Coffee	
	Session: Ultrasonics 2 Chair: ***T. Kundu*** and ***Y. Okabe***	Session: Damage Identification and Fiber Optics Chair: ***H. Murayama*** and ***A. Cusano***
15:00	3A14 Wireless Guided Wave-based Monitoring Using Laser Based Actuation and Sensing **H.J. Park (KAIST), H. Sohn, C.-B. Yun, J.Chung**	3B14 Formulation of Sensor Performance on Self-sensing Carbon Fiber Slip in Low Level Strains **H. Huang (Ibaraki Univ), Z. Wu, C. Yang**
15:20	3A15 Bragg Wavelength Insensitive Fiber Bragg Grating Ultrasound-sensing System **H. Tsuda (AIST, Japan), E. Sato, T. Nakajima, A. Sato**	3B15 Application of the Identification via the GLMM to the Delamination Identification of the CFRP Structure **A. Iwasaki (Gunma Univ)**
15:40	3A16 Artificial Neural Network Based Local Damage Detection in Aging Steel Bridge Joints **S.K.Yadav (Univ Arizona), S. Banerjee, T. Kundu**	3B16 Reflection and Transmission Analysis of Lamb Wave in Delaminated CF/EP Composite Beams **H. Peng (Shanghai Jiao Tong Univ), F. Li , G. Meng**
16:00	3A17 Damage Characterisation Using Pulse-echo and Pitch-catch Active Senor Network **C. Zhou (Hong Kong Polytech Univ), Z. Su, L. Cheng**	3B17 Local Detection of Dynamic Mechanical Transients Using an All-Fiber Bragg Grating Sensor Network **Yinian Zhu (Northwestern Univ), Yan Zhu, O. Balogun, S. Krishnaswamy**

	ROOM A	ROOM B
16:20	3A18 Delamination Detection in Composite Laminates Using Dispersion Changes of Broadband Lamb Waves by Mode Conversions **Y. Okabe (Univ Tokyo), K. Fujibayashi, M. Shimazaki, H. Soejima, T. Ogisu**	3B18 Simultaneous Strain and Temperature Distribution Sensing Technique Using Polarization Maintaining Fiber Bragg Grating **D. Wada (Univ Tokyo), H. Murayama, H. Igata, K. Omichi, K. Kageyama**
16:40	3A19 Guided Wave Generation and Sensing Under High-temperature Environment **J. Yang (KAIST), H. Lee, H. Sohn, J.-R. Lee**	3B19 A Temperature Compensation Method for the Distributed Sensitive Fibre Optic Sensors Based on Brillouin Scattering **S. Shen (Southeast Univ), Z. Wu, C. Yang, C. Wan, S. Song**
17:00	3A20 An Optical Approach to Guiding Lamb Waves in Plates for Design for Structural Health Monitoring **W. Ong (Monash Univ), W.-K. Chiu**	3B20 Structural Health Monitoring for Bonded Joints by Using Embedded Fiber Bragg Grating **H. Murayama (Univ Tokyo), K. Kageyama, K. Uzawa, I. Ohsawa, M. Kanai, I. Igata**
17:20	3A21 Signal Denosing Method with PARAFAC for Ultrasonic Measurement Using FBG Sensor System Based on AWG Filter **R. Ohashi (Univ Tokyo), K. Nakano, H. Nakamura, Y. Okabe. M. Shimazaki, N. Watanabe**	3B21 A Measurement Method to Determine Strain and Temperature Coefficients in Fiber Optic Sensors **Y. Yamauchi (Neubrex Co.)**
17:40	Closing Ceremony	
17:50 19:00	Farewell Drink	

December 1 evening, 3rd ĀPUSHĀ BANQUET GALA featured
celebrating EDO TEZUMA performance by Mr. Shintaro Fujiyama えどてづま
藤山 新太郎　江戸手妻公演