Part Two

8345 2M Exploring efficiencies of SISO, multi-SISO, and MIMO AVC schemes for floor vibration control [8345-90]
D. S. Nyawako, The Univ. of Sheffield (United Kingdom); P. Reynolds, The Univ. of Sheffield (United Kingdom) and Full Scale Dynamics Ltd. (United Kingdom); M. J. Hudson, The Univ. of Sheffield (United Kingdom)

8345 2N Development and testing of a newly proposed continuously variable stiffness/damping device for vibration control [8345-91]
K. K. Walsh, K. D. Grupenhof, Ohio Univ. (United States); K. L. Little, A. Martin, C. A. Moore, Jr., FAMU-FSU College of Engineering (United States)

8345 2O A framework for advanced methods of control of human-induced vibrations [8345-92]
P. Reynolds, The Univ. of Sheffield (United Kingdom) and Full Scale Dynamics Ltd. (United Kingdom)

SESSION 13B SMART STRUCTURES AND MONITORING II

8345 2P Assessment of dynamic and long-term performance of an innovative multi-story timber building via structural monitoring and dynamic testing [8345-93]
P. Omenzetter, H. Morris, M. Worth, A. Gaul, S. Jager, Y. Desgeorges, The Univ. of Auckland (New Zealand)

8345 2Q Sensor agent robot with servo-accelerometer for structural health monitoring [8345-94]
N. Lee, A. Mita, Keio Univ. (Japan)

8345 2R Active evacuation guidance using sensor agent robot [8345-95]
D. Ise, A. Mita, Keio Univ. (Japan)
8345 2S  Estimation of uncomfortable feeling based on observation of unconscious behavior of residents for homeostasis control [8345-96]
M. Takase, A. Mita, Keio Univ. (Japan)

SESSION 14A  MULTIFUNCTIONAL MATERIALS FOR SMART STRUCTURES

8345 2T  Sensing of electrically conductive textiles and capacitance sensor-embedded fabrics for parachutes [8345-97]
M. Damplo, C. Niezrecki, D. Willis, J. Chen, E. Niemi, S. Agnihotra, S. K. Manohar, Univ. of Massachusetts Lowell (United States); K. Desabrais, C. Charette, U.S. Army Natick Soldier Research, Development and Engineering Ctr. (United States)

8345 2U  MEMS-based spectral decomposition of acoustic signals [8345-98]
M. Kranz, EngeniusMicro, LLC. (United States); M. G. Allen, Georgia Institute of Technology (United States); T. Hudson, U.S. Army AMRDEC (United States)

8345 2V  In situ damage detection in SMA reinforced CFRP [8345-99]
F. Pinto, F. Ciampa, U. Polimeno, M. Meo, Univ. of Bath (United Kingdom)

8345 2W  Characterization of damping in microfibrous material [8345-100]
P. Soobramaney, G. T. Flowers, R. N. Dean, Auburn Univ. (United States)

SESSION 14B  ADVANCES IN FIBER OPTIC TECHNOLOGY

8345 2X  The connection technology based on high temperature silica fiber optic sensor [8345-101]
C. Du, W. Xie, S. Meng, Y. Yin, L. Jiao, L. Song, Harbin Institute of Technology (China)

8345 2Y  Fiber optic shape sensing for monitoring of flexible structures [8345-102]
E. M. Lally, M. Reaves, E. Horrell, S. Klute, M. E. Froggatt, Luna Innovations Inc. (United States)

8345 2Z  Coaxial cable Bragg grating sensors for large strain measurement with high accuracy [8345-103]
J. Huang, T. Wei, X. Lan, J. Fan, H. Xiao, Missouri Univ. of Science and Technology (United States)

8345 30  Enhancing active vibration control performances in a smart structure by using fiber Bragg gratings sensors [8345-104]
G. Cazzulani, S. Cinquemani, L. Comolli, Politecnico di Milano (Italy)

8345 31  Structural health monitoring of CFRP airframe structures using fiber-optic-based strain mapping [8345-105]
I. Takahashi, K. Sekine, M. Kume, H. Takeya, Mitsubishi Electric Corp. (Japan); Y. Iwahori, Japan Aerospace Exploration Agency (Japan); S. Minakuchi, N. Takeda, The Univ. of Tokyo (Japan); K. Enomoto, The Materials Process Technology Ctr. (Japan)
SESSION 15A  NEXT-GENERATION SENSING SYSTEMS FOR SHM: APPLICATIONS

8345 32 A preliminary study on the use of optical navigation sensor for two dimensional crack propagation monitoring [8345-106]
C.-C. Chang, S.-H. Man, C. Z. Ng, M. Hassan, A. Bermak, Hong Kong Univ. of Science and Technology (Hong Kong, China)

8345 33 Experimental study on impact force identification of ship-bridge collision using smart piezoelectric sensors [8345-107]
X. W. Ye, Z. G. Guo, Y. Q. Ni, Y. Chen, The Hong Kong Polytechnic Univ. (Hong Kong, China)

8345 34 Structural health monitoring of wind turbine blade using fiber Bragg grating sensors and fiber optic rotary joint [8345-108]
Y. Chen, Y. Q. Ni, X. W. Ye, H. X. Yang, S. Zhu, The Hong Kong Polytechnic Univ. (Hong Kong, China)

8345 35 Real-time monitoring of bridge scouring using ultrasonic sensing technology [8345-109]
B. Wu, W. Chen, H. Li, Harbin Institute of Technology (China)

8345 36 Dense vibration measurement of an arch bridge before and after its seismic retrofit using wireless smart sensors [8345-110]
T. Nagayama, The Univ. of Tokyo (Japan); A. Urushima, Taisei Corp. (Japan); Y. Fujino, The Univ. of Tokyo (Japan); T. Miyashita, Nagaoka Univ. of Technology (Japan); T. Yoshioka, Nippon Engineering Consultants Co. Ltd. (Japan); M. leiri, JIP Techno Science Corp. (Japan)

SESSION 15B  DAMAGE ASSESSMENT AND MONITORING

8345 37 A damage detection technique for reinforced concrete structures [8345-122]
A.-L. Wu, J. N. Yang, Univ. of California, Irvine (United States); C.-H. Loh, National Taiwan Univ. (Taiwan)

8345 38 Triboluminescence multifunctional cementitious composites with in situ damage sensing capability [8345-112]
D. O. Olawale, T. Dickens, M. J. Uddin, O. I. Okoli, FAMU-FSU College of Engineering (United States)

8345 39 Development of damage assessment package for building with isolation system and its application to 2011 Tohoku earthquake [8345-113]
A. Mita, K. Ichimura, Kelo Univ. (Japan)

8345 3A Bridge scour monitoring system based on active thermometry [8345-114]
Q. Ba, X.-F. Zhao, L. Li, Dalian Univ. of Technology (China)
8345 3C  A new control approach for the design and implementation of low frequency large band mechanical suspensions and inertial platforms [8345-116]
F. Acernese, Univ. degli Studi di Salerno (Italy) and INFN, Univ. degli Studi di Napoli (Italy); R. De Rosa, INFN, Univ. degli Studi di Napoli (Italy) and Univ. degli Studi di Napoli Federico II (Italy); G. Giordano, Univ. degli Studi di Salerno (Italy); R. Romano, F. Barone, Univ. degli Studi di Salerno (Italy) and INFN, Univ. degli Studi di Napoli (Italy)

8345 3D  Long term seismic noise acquisition and analysis with tunable monolithic horizontal sensors at the INFN Gran Sasso National Laboratory [8345-117]
F. Acernese, Univ. degli Studi di Salerno (Italy) and INFN, Sezione di Napoli (Italy); R. De Rosa, INFN, Sezione di Napoli (Italy) and Univ. degli Studi di Napoli Federico II (Italy); G. Giordano, Univ. degli Studi di Salerno (Italy); R. Romano, F. Barone, Univ. degli Studi di Salerno (Italy) and INFN, Sezione di Napoli (Italy)

8345 3E  Mechanical monolithic tiltmeter for low frequency measurements [8345-118]
F. Acernese, Univ. degli Studi di Salerno (Italy) and INFN, Sezione di Napoli (Italy); R. De Rosa, INFN, Sezione di Napoli (Italy) and Univ. degli Studi di Napoli Federico II (Italy); G. Giordano, Univ. degli Studi di Salerno (Italy); R. Romano, F. Barone, Univ. degli Studi di Salerno (Italy) and INFN, Sezione di Napoli (Italy)

8345 3F  Low frequency/high sensitivity horizontal monolithic sensor [8345-119]
F. Acernese, Univ. degli Studi di Salerno (Italy) and INFN, Sezione di Napoli (Italy); R. De Rosa, INFN, Sezione di Napoli (Italy) and Univ. degli Studi di Napoli Federico II (Italy); G. Giordano, Univ. degli Studi di Salerno (Italy); R. Romano, F. Barone, Univ. degli Studi di Salerno (Italy) and INFN, Sezione di Napoli (Italy)

8345 3G  State of the art of IT-based high precision patch/implant system technology development for building/large structure safety management in Korea [8345-120]
K.-T. Park, Y.-J. Yu, B. Lee, J.-H. Lee, Korea Institute of Construction Technology (Korea, Republic of)

8345 3I  Applicability of mode-based damage assessment methods to severely damaged steel building [8345-124]
H. HoThu, A. Mita, Keio Univ. (Japan)

8345 3J  Research of a real-time overload monitoring and response system of bridges and roads [8345-125]
Y. Yu, Y. Shi, X. Zhao, J. Qu, Dalian Univ. of Technology (China)

8345 3K  Homeostasis control of building environment using sensor agent robot [8345-126]
E. Nagahama, A. Mita, Keio Univ. (Japan)

8345 3L  Concept and design of a fiber-optic and an I2C hybrid sensor bus system for telecommunication satellites [8345-127]
P. Putzer, Technische Univ. München (Germany); A. Hurni, M. Manhart, C. Tiefenbeck, M. Plattner, Kayser-Threde GmbH (Germany); A. W. Koch, Technische Univ. München (Germany)
8345 3M Music recommendation system for biofied building considering multiple residents
T. Ito, A. Mita, Keio Univ. (Japan)

8345 3O Distributed multifunctional sensor network for composite structural state sensing
X. P. Qing, Beijing Aeronautical Science and Technology Research Institute (China);
Y. Wang, Beijing Aeronautical Science and Technology Research Institute (China) and Dalian Univ. of Technology (China); L. Gao, Beijing Aeronautical Science and Technology Research Institute (China); A. Kumar, Acellent Technologies, Inc. (United States)

8345 3P A statistical approach of fatigue crack detection for a structural hotspot
P. Jin, L. Zhou, Nanjing Univ. of Aeronautics and Astronautics (China)

8345 3Q Genetic mechanism for designing new generation of buildings from data obtained by sensor agent robots
C. Ono, A. Mita, Keio Univ. (Japan)

8345 3R Frequency response analysis of multi-degree-of-freedom system with harmonically varying damping
S. Hirohata, D. Iba, Kyoto Institute of Technology (Japan)

8345 3S Optimal sensor placement based on substructure sensitivity
S. Zhou, Y. Bao, H. Li, Harbin Institute of Technology (China)

8345 3T Development of the damage assessment methodology for ceiling elements
Y. Nitta, A. Iwasaki, Ashikaga Institute of Technology (Japan); A. Nishitani, Waseda Univ. (Japan); M. Wakatabe, S. Inai, Toda Corp. (Japan); I. Ohdomari, Waseda Univ. (Japan); H. Tsutsumi, Maebashi Institute of Technology (Japan)

8345 3V Large substructure identification using substructure isolation method
J. Hou, Dalian Univ. of Technology (China); Ł. Jankowski, Institute of Fundamental Technological Research (Poland); J. Ou, Dalian Univ. of Technology (China) and Harbin Institute of Technology (China)

8345 3X Damage Identification using substructural virtual distortion method
Q. Zhang, Dalian Nationalities Univ. (China) and Institute of Fundamental Technological Research (Poland); Ł. Jankowski, Institute of Fundamental Technological Research (Poland); Z. Duan, Harbin Institute of Technology (China)

8345 3Y Acoustic emission characterization of the onset of corrosion in reinforced concrete
M. Di Benedetti, E. De Cais, Z. Karim, G. Loreto, Univ. of Miami (United States); F. Presuel, Florida Atlantic Univ. (United States); A. Nanni, Univ. of Miami (United States)

8345 3Z Study of the compact fiber optic photoacoustic ultrasonic transducer
N. Wu, Y. Tian, X. Zou, X. Wang, Univ. of Massachusetts Lowell (United States)

8345 40 New regulations on railroad bridge safety: opportunities and challenges for railroad bridge monitoring
F. Moreu, J. M. LaFave, B. F. Spencer, Univ. of Illinois at Urbana-Champaign (United States)
8345 41 **Self-sensing tracking control for piezoelectric actuators based on sensor fusion** [8345-144]
M. N. Islam, R. J. Seethaler, The Univ. of British Columbia (Canada)

8345 42 **Computer-vision based crack detection and analysis** [8345-145]
P. Prasanna, K. Dana, N. Gucunski, B. Basily, Rutgers, The State Univ. of New Jersey (United States)

8345 43 **Characterization of corrosion damage in prestressed concrete using acoustic emission** [8345-146]
J. Mangual, M. K. ElBatanouny, W. Vélez, P. Ziehl, F. Matta, Univ. of South Carolina (United States); M. González, MISTRAS Group, Inc. (United States)

8345 44 **Failure study of SnO2 room temperature gas sensors fabricated on nanospike substrates** [8345-147]
P. Wang, H. Ren, H. Huo, M. Shen, H. Sun, M. Ruths, Univ. of Massachusetts Lowell (United States)

8345 46 **Damage assessment of small-scale wind turbine blade using piezoelectric sensors** [8345-149]
M.-S. Rim, S.-W. Kim, E.-H. Kim, I. Lee, KAIST (Korea, Republic of)

8345 47 **Multiscale model updating of a curved highway bridge** [8345-150]
P. Mensah-Bonsu, S. Jang, Univ. of Connecticut (United States)

8345 48 **Decision support system for integrating remote sensing in bridge condition assessment and preservation** [8345-151]
A. Endsley, C. Brooks, Michigan Tech Research Institute (United States); D. Harris, T. Ahlborn, K. Vaghefi, Michigan Technological Univ. (United States)

8345 49 **A study on Q-factor of CCBG sensors by coupled mode theory** [8345-152]
S. Wu, T. Wei, J. Huang, H. Xiao, J. Fan, Missouri Univ. of Science and Technology (United States)

8345 4A **Comparison of passive and active mass dampers for control of floor vibrations** [8345-153]
M. J. Hudson, The Univ. of Sheffield (United Kingdom); P. Reynolds, The Univ. of Sheffield (United Kingdom) and Full Scale Dynamics Ltd. (United Kingdom); D. S. Nyawako, The Univ. of Sheffield (United Kingdom)

8345 4C **An innovating method to measure bridge deflection using interference-based sensors** [8345-156]
P. Kung, L. Wang, QPS Photronics Inc. (Canada); M. I. Comanici, McGill Univ. (Canada)

8345 4F **Real-time vision-based modal parameters estimation at 10000 fps** [8345-159]
H. Yang, I. Ishii, T. Takaki, Hiroshima Univ. (Japan)

8345 4G **Seismic performance of RC shear wall structure with novel shape memory alloy dampers in coupling beams** [8345-160]
C. Mao, China Earthquake Administration (China) and Harbin Institute of Technology (China); J. Dong, Tongji Univ. (China); H. Li, Harbin Institute of Technology (China); J. Ou, Dalian Univ. of Technology (China)
8345 4H Integrated dynamic and static tactile sensor: focus on static force sensing [8345-161]
N. Wettels, Univ. of Southern California (United States); B. Pletner, IPTRADE, Inc. (United States)

8345 4J Hybrid SHM of cable-anchorage system in cable-stayed bridge using smart sensor and interface [8345-164]
K.-D. Nguyen, D.-D. Ho, D.-S. Hong, J.-T. Kim, Pukyong National Univ. (Korea, Republic of)

8345 4K Wireless vibration-based SHM of caisson-type breakwater under foundation damage [8345-165]
S.-Y. Lee, K.-D. Nguyen, J.-T. Kim, Pukyong National Univ. (Korea, Republic of); J.-H. Yi, Korea Ocean Research Institute (Korea, Republic of)

8345 4L Full-scale laboratory validation of a wireless MEMS-based technology for damage assessment of concrete structures [8345-166]
D. Trapani, D. Zonta, M. Molinari, Univ. of Trento (Italy); A. Amditis, M. Bimpas, Institute of Communication and Computer Systems (Greece); N. Bertsch, MEMSCAP SA (France); V. Spiering, C2V (Netherlands); J. Santana,IMEC-NL (Netherlands); T. Sterken, T. Torfs, IMEC Belgium (Belgium); D. Bairaktaris, M. Bairaktaris, Bairaktaris and Associates Ltd. (Greece); S. Camarinopulos, M. Frondistou-Yannas, RISA Sicherheitsanalysen GmbH (Germany); D. Ulieru, SITEX 45 SRL (Romania)

8345 4N Mechanical design of a Langmuir probe for a QuadSat PnP satellite [8345-168]
J. Klepper, A. Zagrai, A. Jorgensen, New Mexico Institute of Mining and Technology (United States)

8345 4O Electromechanical impedance-based health diagnosis for tendon and anchorage zone in a nuclear containment structure [8345-169]
J. Min, H. Shim, C.-B. Yun, KAIST (Korea, Republic of)

8345 4P Inductively coupled corrosion potential sensor for steel reinforced concrete with time domain gating interrogation [8345-171]
D. J. Thomson, K. Perveen, G. E. Bridges, S. Bhadra, Univ. of Manitoba (Canada)

8345 4R Dispersion monitoring of carbon nanotube modified epoxy systems [8345-174]
G. Gkikas, Ch. Saganas, S. A. Grammatikos, Univ. of Ioannina (Greece); G. M. Maistros, ADVISE E.E. (Greece); N.-M. Barkoula, A. S. Paipetis, Univ. of Ioannina (Greece)

8345 4S Comprehensive property retrieval and measurement of concrete spalling using machine vision for post-earthquake safety assessments [8345-175]
S. German, I. Brilakis, R. DesRoches, Georgia Institute of Technology (United States)

8345 4T Effects of surface electric field on SnO2 room temperature gas sensors fabricated on nanospike substrates [8345-176]
H. Ren, P. Wang, H. Huo, M. Shen, M. Ruths, H. Sun, Univ. of Massachusetts Lowell (United States)

8345 4U Ultrasonic gas accumulation detection and evaluation in nuclear cooling pipes [8345-177]
L. Yu, B. Lin, Y.-J. Shin, J. Wang, Z. Tian, Univ. of South Carolina (United States)
Miniature fiber optic temperature sensor for concrete structural health monitoring [8345-178]
X. Zou, A. Chao, N. Wu, Y. Tian, T.-Y. Yu, X. Wang, Univ. of Massachusetts Lowell (United States)

Experimental and theoretical characterization of non-bending ionic polymer transducer sensing [8345-181]
B. Kocer, U. T. Zanglili, L. M. Weiland, Univ. of Pittsburgh (United States)

Swell-based in situ oxide removal methods for PDMS-copper particle composite corrosion sensing elements [8345-182]
T. Yang, F. Pan, J. Hutson, K. Srinivas, J. King, D. Spearot, A. Huang, Univ. of Arkansas (United States)

Author Index