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**Masayoshi Tomizuka
Chung-Bang Yun
Victor Giurgiutiu
Jerome P. Lynch**
Editors

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Contents

Part One

xix	<i>Conference Committee</i>
xxv	<i>introduction</i>

WIRELESS SENSORS FOR SHM

7647 04	Feasibility of embedded wireless sensors for monitoring of concrete curing and structural health [7647-03] B. Quinn, G. Kelly, Cork Institute of Technology (Ireland)
7647 06	Development of high-sensitivity accelerometer board for structural health monitoring [7647-05] H. Jo, Univ. of Illinois at Urbana-Champaign (United States); J. A. Rice, Texas Tech Univ. (United States); B. F. Spencer, Jr., Univ. of Illinois at Urbana-Champaign (United States); T. Nagayama, Univ. of Tokyo (Japan)
7647 07	Structural health monitoring system of a cable-stayed bridge using a dense array of scalable smart sensor network [7647-06] S. Cho, Korea Advanced Institute of Science and Technology (Korea, Republic of); S. A. Jang, H. Jo, K. Mechtov, Univ. of Illinois at Urbana-Champaign (United States); J. A. Rice, Texas Tech Univ. (United States); H- J. Jung, C.-B. Yun, Korea Advanced Institute of Science and Technology (Korea, Republic of); B. F. Spencer, Jr., Univ. of Illinois at Urbana-Champaign (United States); T. Nagayama, The Univ. of Tokyo (Japan); J. Seo, Hyundai Instruction of Construction Technology (Korea, Republic of)
7647 08	Issues of signal strength of wireless sensors for civil infrastructure monitoring [7647-07] L. S. Bryson, T. Lutz, A. Barnes, Univ. of Kentucky (United States)

DAMAGE DETECTION

7647 09	An experimental study on AEKF method for damage detection of base-isolated structures [7647-08] Q. Yin, L. Zhou, Nanjing Univ. of Aeronautics and Astronautics (China); J. N. Yang, Univ. of California, Irvine (United States)
7647 0A	Experimental verifications of a structural damage identification technique using reduced order finite-element model [7647-09] R. Li, L. Zhou, Nanjing Univ. of Aeronautics and Astronautics (China); J. N. Yang, Univ. of California, Irvine (United States)
7647 0B	Damage detection using magnetic impedance approach with circuitry integration: sensor optimization [7647-10] X. Wang, J. Tang, Univ. of Connecticut (United States)

- 7647 OC **Delamination detection using embedded BOCDA optical fiber sensor** [7647-11]
S. Hasegawa, T. Yari, M. Toyama, K. Nagai, Mitsubishi Heavy Industries, Ltd. (Japan);
Y. Koshioka, RIMCOF (Japan)
- 7647 OD **Monitoring of fatigue crack growth using guided ultrasonic waves** [7647-12]
B. Masserey, Univ. of Applied Sciences, Fribourg (Switzerland); E. Kostson, P. Fromme, Univ.
College London (United Kingdom)

NEXT-GENERATION WIRELESS SENSING DEVICES AND TECHNIQUES

- 7647 OE **Embedded EMD algorithm within an FPGA-based design to classify nonlinear SDOF systems** [7647-13]
J. D. Jones, J.-S. Pei, Univ. of Oklahoma (United States); J. P. Wright, Weidlinger Associates,
Inc. (United States); M. P. Tull, Univ. of Oklahoma (United States)
- 7647 OF **Passive wireless sensors for monitoring particle movement at soil-structure interfaces** [7647-14]
B. Liea, K. J. Loh, Univ. of California, Davis (United States)
- 7647 OG **Development of smart sensing system for structural health monitoring** [7647-15]
K.-C. Lu, C.-H. Loh, J. H. Weng, National Taiwan Univ. (Taiwan)
- 7647 OH **Development of a wireless power transmission system for guided wave generation and sensing via a laser** [7647-16]
H.-J. Park, H. Sohn, C.-B. Yun, Korea Advanced Institute of Science and Technology (Korea, Republic of); J. Chung, CyTroniq Co., Ltd., Hoseo Univ. (Korea, Republic of)
- 7647 OI **Pipelining in structural health monitoring wireless sensor network** [7647-17]
X. Li, S. Dorvash, L. Cheng, S. Pakzad, Lehigh Univ. (United States)
- 7647 OJ **Automated wind load characterization of wind turbine structures by embedded model updating** [7647-18]
R. A. Swartz, Michigan Technological Univ. (United States); A. T. Zimmerman, J. P. Lynch, Univ. of Michigan (United States)
- 7647 OK **Long term wireless ambient monitoring of heritage buildings** [7647-19]
H. Wu, M. Pozzi, D. Zonta, P. Zanon, Univ. degli Studi di Trento (Italy); M. Ceriotti, Fondazione Bruno Kessler (Italy); L. Mottola, Swedish Institute of Computer Science (Sweden);
G. P. Picco, Univ. degli Studi di Trento (Italy); A. L. Murphy, Fondazione Bruno Kessler (Italy);
S. Guna, Univ. degli Studi di Trento (Italy); M. Corrà, Tretac S.r.l. (Italy)

STRUCTURAL CONTROL

- 7647 OL **A mobile gait monitoring system as an assistive tool for rehabilitation: design and experimentation** [7647-20]
J. Bae, K. Kong, M. Tomizuka, Univ. of California, Berkeley (United States)
- 7647 OM **Data filtering for robust modal identification using SOD and DSPI** [7647-21]
K. D'Souza, B. I. Epureanu, Univ. of Michigan (United States)

- 7647 0O **Fast estimation of bifurcation conditions using noisy response data** [7647-23]
N. Miller, Michigan State Univ. (United States); C. Burgner, Univ. of California, Santa Barbara (United States); M. Dykman, S. Shaw, Michigan State Univ. (United States); K. Turner, Univ. of California, Santa Barbara (United States)
- 7647 0P **A new approach to tackle noise issue in miniature directional microphones: bio-inspired mechanical coupling** [7647-24]
H. Liu, M. Yu, Univ. of Maryland, College Park (United States)
- 7647 0Q **Adaptive damping of piezoelectric structures via digital implementation of an electrical impedance** [7647-25]
T. Rittenschober, J. Korak, Profactor Produktionsforschungs GmbH (Austria)

INNOVATIVE EXCITATION AND SENSING TECHNOLOGIES

- 7647 0R **Guided wave generation and sensing system using a single laser source and optical fibers** [7647-27]
H. Lee, H.-J. Park, H. Sohn, Korea Advanced Institute of Science and Technology (Korea, Republic of); I.-B. Kwon, Korea Research Institute of Standards and Science (Korea, Republic of)
- 7647 0S **Laser induced highly nonlinear solitary waves for structural NDE** [7647-28]
X. Ni, R. Garden, P. Rizzo, Univ. of Pittsburgh (United States)
- 7647 0T **Magnetic nanoparticle (MNP) enhanced biosensing by surface plasmon resonance (SPR) for portable devices** [7647-192]
J. Wang, Z. Zhu, A. Munir, H. S. Zhou, Worcester Polytechnic Institute (United States)

SENSORS I

- 7647 0U **Optical fiber sensors for high temperature harsh environment applications** [7647-30]
H. Xiao, T. Wei, X. Lan, Y. Zhang, H. Duan, Y. Han, H.-L. Tsai, Missouri Univ. of Science and Technology (United States)
- 7647 0V **Micro-machinable polymer-derived ceramic sensors for high-temperature applications** [7647-31]
J. Liu, C. Xu, L. An, Univ. of Central Florida (United States)
- 7647 0W **Non-contact torque measurement using rolled single crystal-like Galfenol patches** [7647-32]
D. Douglas, S.-M. Na, J.-H. Yoo, A. B. Flatau, Univ. of Maryland, College Park (United States)

SMART SENSORS AND MATERIALS I

- 7647 0X **Smart pavement sensor based on thermoelectricity power** [7647-33]
X. Yu, B. Zhang, J. Tao, Z. Liu, Case Western Reserve Univ. (United States)

- 7647 0Y **Experimental testing of a smart FRP-concrete composite bridge superstructure** [7647-34]
Y. Wang, Dalian Univ. of Technology (China); Q. Hao, Harbin Institute of Technology (China);
J. Ou, Dalian Univ. of Technology (China) and Harbin Institute of Technology (China)
- 7647 0Z **Foot angle determination using conductive polymer sensors** [7647-35]
L. M. Castano, A. E. Winkelmann, A. B. Flatau, Univ. of Maryland, College Park (United States)

SENSORS II

- 7647 11 **Multifunctional sensor network for structural state sensing and structural health monitoring** [7647-37]
X. P. Qing, R. Ikegami, S. J. Beard, D. Zhang, S. Das, S. Banerjee, Acellent Technologies, Inc. (United States); F.-K. Chang, Stanford Univ. (United States)
- 7647 12 **SMART composite high pressure vessels with integrated optical fiber sensors** [7647-38]
W. Blazejewski, Wroclaw Univ. of Technology (Poland); A. Czulak, Technische Univ. Dresden (Germany); P. Gasior, J. Kaleta, R. Mech, Wroclaw Univ. of Technology (Poland)
- 7647 13 **On electrostatically actuated microsensors** [7647-193]
D. I. Caruntu, M. W. Knecht, Univ. of Texas-Pan American (United States)
- 7647 14 **Magnetostrictive unimorph transducer network model** [7647-40]
U. Marschner, Technische Univ. Dresden (Germany); S. Datta, Univ. of Maryland, College Park (United States); E. Starke, G. Pfeifer, W.-J. Fischer, Technische Univ. Dresden (Germany);
A. B. Flatau, Univ. of Maryland, College Park (United States)

EMBEDDED DATA PROCESSING IN SENSOR NETWORKS FOR STRUCTURAL HEALTH MONITORING I

- 7647 15 **Energy efficient wireless sensor network for structural health monitoring using distributed embedded piezoelectric transducers** [7647-41]
P. Li, C. Olmi, G. Song, Univ. of Houston (United States)
- 7647 16 **The combined use of low-cost smart sensors and high accuracy sensors to apprehend structural dynamic behavior** [7647-42]
T. Nagayama, M. Ushita, Y. Fujino, The Univ. of Tokyo (Japan); M. Ieiri, N. Makihata, JIP Techno Science Corp. (Japan)
- 7647 17 **SHMTools: a new embeddable software package for SHM applications** [7647-43]
E. B. Flynn, S. Kpotufe, Univ. of California, San Diego (United States); D. Harvey, Los Alamos National Lab. (United States); E. Figueiredo, Univ. of Porto (Portugal); S. Taylor, Univ. of California, San Diego (United States) and Los Alamos National Lab. (United States); D. Dondi, T. Mollov, M. D. Todd, T. Simunic Rosing, Univ. of California, San Diego (United States);
G. Park, C. Farrar, Los Alamos National Lab. (United States)
- 7647 18 **Efficient decentralized data aggregation in wireless smart sensor networks** [7647-44]
S.-H. Sim, Univ. of Illinois at Urbana-Champaign (United States); J. F. Carbonell-Marquez, Univ. of Granada (Spain); B. F. Spencer, Jr., Univ. of Illinois at Urbana-Champaign (United States)

- 7647 19 **Validation of a wireless sensor network using local damage detection algorithm for beam-column connections** [7647-45]
S. Pakzad, S. N. Dorvash, E. Labuz, M. Chang, X. Li, L. Cheng, Lehigh Univ. (United States)

SENSORS III

- 7647 1A **Compact sensitive piezoelectric mass balance for measurement of unconsolidated materials in space** [7647-46]
S. Sherrit, A. Trebi-Ollennu, R. Bonitz, Y. Bar-Cohen, Jet Propulsion Lab. (United States); J. T. Yen, Univ. of Southern California (United States)
- 7647 1B **Mechanisms of sliding friction studied with an array of industrial conical piezoelectric sensors** [7647-47]
G. C. McLaskey, S. D. Glaser, Univ. of California, Berkeley (United States)
- 7647 1C **Direct measurement sensor of the boundary shear stress in fluid flow** [7647-48]
M. Badescu, X. Bao, Y. Bar-Cohen, Z. Chang, Jet Propulsion Lab. (United States); K. Kerényi, Federal Highway Administration (United States); S.-S. Lih, S. Sherrit, B. P. Trease, B. Chen, S. Widholm, Jet Propulsion Lab. (United States)

SHM/DAMAGE DETECTION METHOD I

- 7647 1G **Corrosion monitoring of reinforcing steel in concrete by electrochemical sensors** [7647-52]
G. Qiao, Y. Hong, Harbin Institute of Technology (China); J. Ou, Harbin Institute of Technology (China) and DaLian Univ. of Technology (China)
- 7647 1H **Prestress-force monitoring of PSC girder bridges using wireless impedance sensor nodes** [7647-53]
J.-H. Park, S.-Y. Lee, D.-E. Hong, J.-T. Kim, Pukyong National Univ. (Korea, Republic of)
- 7647 1I **Application of smart BFRP bars with distributed fiber optic sensors into concrete structures** [7647-54]
Y. Tang, Southeast Univ. (China); Z. Wu, Southeast Univ. (China) and Ibaraki Univ. (Japan); C. Yang, G. Wu, L. Zhao, S. Song, Southeast Univ. (China)
- 7647 1J **Coordinated sensing and autonomous repair of pressure vessels and structures** [7647-55]
D. R. Huston, D. A. Hurley, K. Gollins, A. Gervais, The Univ. of Vermont (United States)
- 7647 1L **Detection and assessment of wood decay in glulam beams using a decay rate approach** [7647-57]
A. Sendlik, Univ. of Illinois at Urbana-Champaign (United States); F. C. Beall, Univ. of California, Berkeley (United States); H. Reis, Univ. of Illinois at Urbana-Champaign (United States)

SIGNAL PROCESSING

- 7647 1M **An emerging time-domain sensing technique for large scale, multi-function fiber optic sensor networks** [7647-58]
C. Wang, C. Herath, Mississippi State Univ. (United States)

- 7647 1N **Noise effects on localization of mobile sensor platforms** [7647-59]
N. Chopra, B. Balachandran, Univ. of Maryland, College Park (United States); H. Karki, The Petroleum Institute (United Arab Emirates)
- 7647 1Q **Object identification by multispectral fusion and Haar classification** [7647-62]
A. Manohar, F. Lanza di Scaleda, Univ. of California, San Diego (United States)
- 7647 1R **A survey to control uncertainties by comprehensive monitoring of load-carrying structures** [7647-63]
J. F. Koenen, Technische Univ. Darmstadt (Germany); R. Platz, Fraunhofer-Institut für Betriebsfestigkeit und Systemzuverlässigkeit (Germany); H. Hanselka, Technische Univ. Darmstadt (Germany) and Fraunhofer-Institut für Betriebsfestigkeit und Systemzuverlässigkeit (Germany)

SIGNAL PROCESSING AND DAMAGE DETECTION I

- 7647 1S **Detecting seismic response signals using singular spectrum analysis** [7647-64]
C.-H. Loh, C.-H. Chen, C.-H. Mao, National Taiwan Univ. (Taiwan)
- 7647 1T **Support vector machine for abnormality detection on a cable-stayed bridge** [7647-65]
D. Vines-Cavanaugh, Y. Cao, M. L. Wang, Northeastern Univ. (United States)
- 7647 1U **Adaptive noise variance identification for data fusion using subspace-based technique** [7647-66]
Z. Li, C. C. Chang, Hong Kong Univ. of Science and Technology (Hong Kong, China)

NANO AND MEMS

- 7647 1V **Design and fabrication of a sensor integrated MEMS/NANO-skin system for human physiological response measurement** [7647-67]
H. Leng, Y. Lin, Northeastern Univ. (United States)
- 7647 1W **DNA decorated carbon nanotube sensors on CMOS circuitry for environmental monitoring** [7647-68]
Y. Liu, C.-L. Chen, Northeastern Univ. (United States); V. Agarwal, Tufts Univ. (United States); X. Li, Northeastern Univ. (United States); S. Sonkusale, Tufts Univ. (United States); M. R. Dokmeci, M. L. Wang, Northeastern Univ. (United States)
- 7647 1X **Reconfigurable multivariable MEMS sensor array** [7647-69]
S. van der Velden, I. Powlesland, Defence Science and Technology Organisation (Australia); J. Singh, La Trobe Univ. (Australia)

PIEZO SENSORS AND APPLICATIONS

- 7647 1Y **Steel bridge fatigue crack detection with piezoelectric wafer active sensors** [7647-70]
L. Yu, V. Giurgiutiu, P. Ziehl, Univ. of South Carolina (United States); D. Ozevin, Univ. of Illinois at Chicago (United States); P. Pollock, Univ. of South Carolina (United States)

- 7647 12 **Monitoring concrete by means of embedded sensors and electromechanical impedance technique** [7647-71]
V. G. M. Annamdas, P. Rizzo, Univ. of Pittsburgh (United States)
- 7647 21 **Impedance-based monitoring of bonding between steel rebar and concrete** [7647-73]
R. Tawie, H.-K. Lee, Korea Advanced Institute of Science and Technology (Korea, Republic of)

STRUCTURAL LIFE PROGNOSIS

- 7647 22 **Estimation of fatigue life using electromechanical impedance technique** [7647-74]
Y. Y. Lim, C. K. Soh, Nanyang Technological Univ. (Singapore)
- 7647 23 **Life cycle structural health monitoring of airframe structures by strain mapping using FBG sensors** [7647-75]
I. Takahashi, K. Sekine, H. Takeya, Mitsubishi Electric Corp. (Japan); Y. Iwahori, Japan Aerospace Exploration Agency (Japan); N. Takeda, The Univ. of Tokyo (Japan); Y. Koshioka, RIMCOF (Japan)
- 7647 24 **In-situ determination of stress intensity factors for the prediction of fatigue crack growth using piezoelectric polymer coatings** [7647-76]
A. Ricoeur, Univ. Kassel (Germany); D. Bäcker, M. Kuna, Technische Univ. Bergakademie Freiberg (Germany)
- 7647 25 **Continuous piezoelectric health monitoring systems based on ultrasonic guided waves** [7647-77]
C. J. Lissenden, S. Li, J. L. Rose, The Pennsylvania State Univ. (United States)

EMBEDDED DATA PROCESSING IN SENSOR NETWORKS FOR STRUCTURAL HEALTH MONITORING II

- 7647 26 **Autonomous smart sensor network for full-scale structural health monitoring** [7647-78]
J. A. Rice, Texas Tech Univ. (United States); K. A. Mechitov, B. F. Spencer, Jr., G. A. Agha, Univ. of Illinois at Urbana-Champaign (United States)
- 7647 27 **Discovery of emerging patterns with immune network theory** [7647-79]
B. Chen, C. Zang, Michigan Technological Univ. (United States)
- 7647 28 **Development of multi-functional wireless impedance sensor nodes for structural health monitoring** [7647-80]
J. Min, Korea Advanced Institute of Science and Technology (Korea, Republic of); S. Park, Sungkyunkwan Univ. (Korea, Republic of); C.-B. Yun, Korea Advanced Institute of Science and Technology (Korea, Republic of); B. Song, Korea Electronics Technology Institute (Korea, Republic of)
- 7647 29 **Embedded transmissibility function analysis for damage detection in a mobile sensor network** [7647-81]
X. Yi, D. Zhu, Y. Wang, J. Guo, K.-M. Lee, Georgia Institute of Technology (United States)

- 7647 2A **Automated mode shape estimation in agent-based wireless sensor networks** [7647-82]
A. T. Zimmerman, J. P. Lynch, Univ. of Michigan (United States)

Part 2

SMART MATERIALS

- 7647 2B **Pressure adaptive honeycomb: a new adaptive structure for aerospace applications** [7647-83]
R. Vos, The Univ. of Kansas (United States) and Delft Univ. of Technology (Netherlands);
R. Barrett, The Univ. of Kansas (United States)
- 7647 2C **Detailed studies on the formation of piezoelectric β -phase of PVDF at different hot-stretching conditions** [7647-84]
A. Jain, J. Kumar S., National Aerospace Labs. (India); D. R. Mahapatra, Indian Institute of Science (India); H. H. Kumar, Armament R&D Estt. (India)
- 7647 2D **Thermodynamic modeling of martensitic phase transformations** [7647-85]
V. S. Guthikonda, R. S. Elliott, Univ. of Minnesota (United States)
- 7647 2F **Novel fabrication technology for three-dimensional high surface area pyrolyzed structures** [7647-87]
V. Ho, M. Shimada, D. Szeto, Univ. of California, Irvine (United States); P. P. Mukherjee, Oak Ridge National Lab. (United States); Q. Kang, Los Alamos National Lab. (United States);
L. Kulinsky, M. J. Madou, Univ. of California, Irvine (United States)

FIBER OPTIC SENSORS AND APPLICATIONS I

- 7647 2G **Pavement roughness monitoring method using fiber optic vibration sensors** [7647-88]
K.-S. Kim, Hongik Univ. (Korea, Republic of); Y. Baek, I.-K. Yoo, Korea Institute of Construction Technology (Korea, Republic of)
- 7647 2I **Measures for identifying cracks within reinforced concrete beams using BOTDR** [7647-90]
A. Klar, Y. Goldfeld, Z. Charas, Technion-Israel Institute of Technology (Israel)
- 7647 2J **Monitoring of stress distribution along a ground anchor using BOTDA** [7647-91]
M. Iten, A. M. Puzrin, ETH Zürich (Switzerland)
- 7647 2M **Study on the creep properties of distributed optical fiber sensors** [7647-159]
S. Song, C. Yang, Southeast Univ. (China); Z. Wu, Southeast Univ. (China) and Jiangsu Transportation Research Institute (China); Y. Zhang, Jiangsu Transportation Research Institute (China); S. Shen, Southeast Univ. (China)

MULTI-DOMAIN MODELING

- 7647 2N **Modeling and simulation of heterogeneous electronic system based on smart sensors for aerospace structures health monitoring** [7647-95]
P. L. Álvarez, R. Aragonés, J. Oliver, Univ. Autònoma de Barcelona (Spain); C. Ferrer, Univ. Autònoma de Barcelona (Spain) and CNM-IMB (CSIC) (Spain)

- 7647 2O **On the combination of asymptotic and direct approaches to the modeling of plates with piezoelectric actuators and sensors** [7647-96]
Y. Vetyukov, M. Krommer, Johannes Kepler Univ. Linz (Austria)
- 7647 2P **Modeling of power and energy transduction of embedded piezoelectric wafer active sensors for structural health monitoring** [7647-97]
B. Lin, V. Giurgiutiu, Univ. of South Carolina (United States)
- 7647 2Q **Shear lag solution for structurally attached active sensors** [7647-98]
G. Santoni-Bottai, V. Giurgiutiu, Univ. of South Carolina (United States)
- 7647 2R **Conductor width independence case of the self-resonance quality factor of semiadditive planar coils on a magnetoelastic substrate** [7647-99]
U. Marschner, A. Jahn, E. Starke, N. Liu, U. Vogel, C. Wenzel, U. Merkel, Technische Univ. Dresden (Germany); A. B. Flatau, Univ. of Maryland, College Park (United States); W.-J. Fischer, Technische Univ. Dresden (Germany)
- 7647 2S **Electromechanical network modeling applied to magnetoelastic gyro sensor design** [7647-100]
U. Marschner, Technische Univ. Dresden (Germany); J.-H. Yoo, Univ. of Maryland, College Park (United States); E. Starke, Technische Univ. Dresden (Germany); F. Graham, C. Mudivarthi, Univ. of Maryland, College Park (United States); W.-J. Fischer, Technische Univ. Dresden (Germany); A. B. Flatau, Univ. of Maryland, College Park (United States)
- 7647 2T **Optical fiber chemical sensors with sol-gel derived nanomaterials for monitoring high temperature/high pressure reactions in clean energy technologies** [7647-191]
S. Tao, West Texas A&M Univ. (United States)

ENERGY HARVESTING

- 7647 2U **Modeling and analysis of hybrid energy storage systems for wireless sensor networks** [7647-101]
H. Yang, Y. Zhang, Georgia Institute of Technology (United States)
- 7647 2V **Microbial power house: design and optimization of a single chamber microbial fuel cell** [7647-102]
P. G. Frank, Westminster College (United States); C. McFadden, X. Yu, Case Western Reserve Univ. (United States)

SMART SENSORS AND MATERIALS II

- 7647 2X **New tunable mechanical monolithic horizontal seismometer for low frequency seismic noise measurement** [7647-104]
F. Acernese, Univ. degli Studi di Salerno (Italy) and Univ. di Monte S. Angelo Via Cintia (Italy); R. De Rosa, Univ. di Monte S. Angelo Via Cintia (Italy) and Univ. degli Studi di Napoli Federico II (Italy); G. Giordano, Univ. degli Studi di Salerno (Italy); R. Romano, S. Vilasi, Univ. degli Studi di Salerno (Italy) and Univ. di Monte S. Angelo Via Cintia (Italy); F. Barone, Istituto Nazionale di Fisica Nucleare (Italy) and Univ. di Monte S. Angelo Via Cintia (Italy)

- 7647 22 **Development of nanowell based sensors for the detection of improvised explosive devices** [7647-158]
B. Zientek, Univ. of Illinois at Chicago (United States) and Argonne National Lab. (United States); H. H. Wang, Argonne National Lab. (United States); J. E. Indacochea, Univ. of Illinois at Chicago (United States); Y. Liu, Northeastern Univ. (China); M. L. Wang, Northeastern Univ. (United States)

MODELING AND MECHANICS

- 7647 31 **Field vibration tests-based model update for system identification of railway bridge** [7647-108]
D.-D. Ho, J.-J. Kim, J.-H. Park, D.-S. Hong, Pukyong National Univ. (Korea, Republic of)
- 7647 32 **Application of nonlinear observers in hysteretic model updating** [7647-109]
W. Song, S. J. Dyke, Purdue Univ. (United States)

SIGNAL PROCESSING AND DAMAGE DETECTION II

- 7647 33 **Damage identification of a plane steel truss with incomplete measurements** [7647-110]
H. Huang, Tongji Univ. (China); J. N. Yang, Univ. of California, Irvine (United States)
- 7647 36 **Identification of modal macro-strain vector based on distributed long-gage FBG sensors under ambient vibration** [7647-113]
W. Hong, C. Yang, Southeast Univ. (China); Z. Wu, Southeast Univ. (China) and Jiangsu Transportation Research Institute (China); Y. Zhang, Jiangsu Transportation Research Institute (China); C. Wan, G. Wu, Southeast Univ. (China)

ACTUATORS

- 7647 37 **Haptic interfaces using dielectric electroactive polymers** [7647-114]
M. Y. Ozsecen, M. Sivak, C. Mavroidis, Northeastern Univ. (United States)
- 7647 38 **Design of a quick response SMA actuated segmented nut for space release applications** [7647-115]
X. Zhang, X. Yan, BeiHang Univ. (China); Q. Yang, China Academy of Space Technology (China)
- 7647 39 **Ultrasonic/sonic drill for high temperature application** [7647-116]
X. Bao, Y. Bar-Cohen, J. Scott, S. Sherit, S. Widholm, M. Badescu, Jet Propulsion Lab. (United States); T. Shrout, B. Jones, Pennsylvania State Univ. (United States)
- 7647 3A **Shape memory polymer (SMP) actuation technology** [7647-117]
F. Auffinger, M. Fisher, M. Maddux, Cornerstone Research Group, Inc. (United States)

FIBER OPTIC SENSORS AND APPLICATIONS II

- 7647 3D **A high speed, portable, multi-function, weigh-in-motion (WIM) sensing system and a high performance optical fiber Bragg grating (FBG) demodulator** [7647-120]
H. Zhang, Z. Wei, L. Fan, Stevens Institute of Technology (United States); S. Yang, Yantai Univ. (China); P. Wang, H.-L. Cui, Stevens Institute of Technology (United States)
- 7647 3E **Study on the wavelet decomposed details of impact induced AE signals in composite laminates using fiber Bragg grating sensors** [7647-121]
H. Bang, Korea Institute of Energy Research (Korea, Republic of); C. Kim, Korea Advanced Institute of Science and Technology (Korea, Republic of)

BRIDGE INSPECTION AND MONITORING SYSTEMS

- 7647 3F **Dynamic characteristics of a thousands-meter scale cable-stayed bridge** [7647-122]
J. Liu, Q. Zhang, Tongji Univ. (China)
- 7647 3G **Small-format fly-over photography for highway bridge monitoring** [7647-123]
S.-E. Chen, C. Rice, The Univ. of North Carolina at Charlotte (United States); C. Boyle, Boyle Consulting Inc. (United States); E. Hauser, B. Philbrick, The Univ. of North Carolina at Charlotte (United States)
- 7647 3H **A computer vision-based approach for structural displacement measurement** [7647-124]
Y. Ji, Tongji Univ. (China)
- 7647 3I **Decentralized bridge health monitoring using wireless smart sensors** [7647-125]
S. Jang, S. H. Sim, H. Jo, B. F. Spencer, Jr., Univ. of Illinois at Urbana-Champaign (United States)
- 7647 3J **US-Korea collaborative research for bridge monitoring test beds** [7647-126]
C. B. Yun, H. Sohn, Korea Advanced Institute of Science and Technology (Korea, Republic of); J. J. Lee, Sejong Univ. (Korea, Republic of); S. Park, Sungkyunkwan Univ. (Korea, Republic of); M. L. Wang, Northeastern Univ. (United States); Y. F. Zhang, Univ. of Maryland, College Park (United States); J. P. Lynch, Univ. of Michigan (United States)

IMAGE-BASED SENSING

- 7647 3K **Luminescent photoelastic coating image analysis and strain separation on a three-dimensional grid** [7647-127]
E. Esirgemez, J. P. Hubner, The Univ. of Alabama (United States)
- 7647 3L **Progress on developing acoustic-infrared imaging NDE: studying motions in crack faces** [7647-128]
X. Han, M. S. Islam, Wayne State Univ. (United States)
- 7647 3M **Broad-area detection of structural irregularities in composites using fibre Bragg gratings** [7647-129]
C. E. Davis, P. Norman, S. Moss, Defence Science and Technology Organisation (Australia); C. Ratcliffe, U.S. Naval Academy (United States); R. Crane, Naval Surface Warfare Ctr. (United States)

- 7647 3N **Real time NDE 3D image sensor for harsh electromagnetic environment** [7647-130]
M. Bodnar, J. Prokop, Czech Technical Univ. in Prague (Czech Republic); G. Dovgalenko, ITT Technical Institute (United States); Y. Wu, Shanghai Jing Na Luo Décor Design Engineering Co. (China)
- 7647 3O **An optical fiber-based corrosion sensor based on laser light reflection** [7647-39]
M. Shenoy, H. Huang, The Univ. of Texas at Arlington (United States)

WAVE PROPAGATION AND DAMAGE DETECTION

- 7647 3P **Experimental research on crack damage detection of concrete beam based on PZT wave method** [7647-131]
Y. Meng, Dalian Univ. (China), Beihua Univ. (China), and Shenyang Jianzhu Univ. (China); S. Yan, Dalian Univ. (China) and Shenyang Jianzhu Univ. (China); W. Sun, N. Zhao, Shenyang Jianzhu Univ. (China); G. Qiu, Beihua Univ. (China)
- 7647 3R **Experimental validations of a baseline-free crack detection technique using dual-PZTs** [7647-133]
Y.-K. An, H. Sohn, Korea Advanced Institute of Science and Technology (Korea, Republic of)
- 7647 3S **Time reversal for damage detection in pipes** [7647-134]
Y. Ying, J. Harley, J. H. Garrett, Jr., Carnegie Mellon Univ. (United States); Y. Jin, Univ. of Maryland, Eastern Shore (United States); J. M. F. Moura, N. O'Donoghue, I. J. Oppenheim, L. Soibelman, Carnegie Mellon Univ. (United States)
- 7647 3T **Cognitive sensor networks for structure defect monitoring and classification using guided wave signals** [7647-135]
Y. Jin, Univ. of Maryland, Eastern Shore (United States); N. O'Donoghue, J. M. F. Moura, J. Harley, J. H. Garrett, I. J. Oppenheim, L. Soibelman, Y. Ying, Carnegie Mellon Univ. (United States); L. He, Harbin Institute of Technology (China)

DAMPING AND RESPONSE MODIFICATION

- 7647 3V **An experimental study of active base isolation control for seismic protection** [7647-137]
C.-M. Chang, B. F. Spencer, Jr., Univ. of Illinois at Urbana-Champaign (United States)
- 7647 3X **Performance evaluation of shape memory alloy/rubber-based isolation systems for seismic response mitigation of bridges** [7647-139]
O. E. Ozbulut, S. Hurlbaas, Texas A&M Univ. (United States)
- 7647 3Z **Controllable outrigger damping system for high rise building with MR dampers** [7647-141]
Z. Wang, Hunan Univ. (China); C.-M. Chang, B. F. Spencer, Jr., Univ. of Illinois at Urbana-Champaign (United States); Z. Chen, Hunan Univ. (China)
- 7647 40 **A general numerical solution to optimal nonlinear stochastic structural control problem** [7647-142]
W. Song, S. J. Dyke, Purdue Univ. (United States)

WIRELESS SENSORS AND ENERGY HARVESTING

- 7647 41 **Design of a miniature wind turbine for powering wireless sensors** [7647-143]
F. J. Xu, Donghua Univ. (China) and North Carolina State Univ. (United States); F. G. Yuan, J. Z. Hu, North Carolina State Univ. (United States); Y. P. Qiu, Donghua Univ. (China)
- 7647 42 **Unpowered antenna sensor for crack detection and measurement** [7647-144]
S. Deshmukh, I. Mohammad, X. Xu, H. Huang, The Univ. of Texas at Arlington (United States)
- 7647 43 **Surface acoustic wave devices for wireless strain measurement** [7647-145]
T.-L. Chin, P. Zheng, I. J. Oppenheim, D. W. Greve, Carnegie Mellon Univ. (United States)
- 7647 44 **Composite materials with self-contained wireless sensing networks** [7647-146]
K. Schaaf, R. Kim, S. Nemat-Nasser, Univ. of California, San Diego (United States)
- 7647 45 **Detachable acoustic electric feedthrough** [7647-147]
S. Moss, J. Skippen, M. Konak, I. Powlesland, S. Galea, Defence Science and Technology Organisation (Australia)
- 7647 46 **Infrasonic energy harvesting for embedded structural health monitoring micro-sensors** [7647-148]
C. Huang, N. Lajnef, S. Chakrabartty, Michigan State Univ. (United States)
- 7647 47 **Feasibility study of wind generator for smart wireless sensor node in cable-stayed bridge** [7647-172]
J. Park, H. Jung, Korea Advanced Institute of Science and Technology (Korea, Republic of); H. Jo, S. Jang, B. F. Spencer, Jr., Univ. of Illinois at Urbana-Champaign (United States)

SHM/DAMAGE DETECTION METHODS II

- 7647 48 **Environmental urban runoff monitoring** [7647-149]
B. Yu, P. K. Behera, S. H. Kim, J. F. Ramirez Rochac, T. Branham, Univ. of the District of Columbia (United States)
- 7647 49 **Magneto-inductive waveguide as a passive wireless sensor net for structural health monitoring** [7647-150]
Y. Chen, S. Munukutla, P. Pasupathy, D. P. Neikirk, S. L. Wood, The Univ. of Texas at Austin (United States)
- 7647 4A **Impedance-based damage identification: a numerical study using spectral elements** [7647-151]
Z. Guo, Z. Sun, Tongji Univ. (China)
- 7647 4B **Detection and assessment of wood decay using x-ray computer tomography** [7647-152]
M. McGovern, A. Senalik, Univ. of Illinois at Urbana-Champaign (United States); G. Chen, U.S. Dept. of Agriculture (United States); F. C. Beall, Univ. of California, Berkeley (United States); H. Reis, Univ. of Illinois at Urbana-Champaign (United States)

- 7647 4C **Experimental demonstration of the AQSSE damage detection technique based on finite-element approach** [7647-153]
J. N. Yang, Y. Xia, Univ. of California, Irvine (United States); C.-H. Loh, National Taiwan Univ. (Taiwan)
- 7647 4D **A study on building an experimental system of PVDF sensor for structural local monitoring on a bridge model** [7647-154]
Y. Yu, Y. Wang, Y. An, Dalian Univ. of Technology (China); J. Ou, Harbin Institute of Technology (China) and Dalian Univ. of Technology (China)
- 7647 4E **Experimental research on damage detection of large thin aluminum plate based on Lamb wave** [7647-155]
N. Zhao, Shenyang Jianzhu Univ. (China) and Dalian Univ. of Technology (China); S. Yan, Shenyang Jianzhu Univ. (China)

POSTERS

- 7647 4F **Mechanical monolithic tiltmeter for low frequency measurements** [7647-156]
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, S. Vilasi, F. Barone, Univ. degli Studi di Salerno (Italy) and INFN Sezione di Napoli (Italy)
- 7647 4G **Low frequency seismic noise acquisition and analysis in the Homestake Mine with tunable monolithic horizontal sensors** [7647-157]
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); R. De Salvo, California Institute of Technology (United States); G. Giordano, Univ. degli Studi di Salerno (Italy); J. Harms, V. Mandic, Univ. of Minnesota, Twin Cities (United States); A. Sajeve, Univ. di Pisa (Italy); T. Trancynger, South Dakota Science and Technology Authority (United States); F. Barone, Univ. degli Studi di Salerno (Italy) and INFN Sezione di Napoli (Italy)
- 7647 4H **Structural health monitoring of a composite wind turbine blade using fiber Bragg grating sensors** [7647-160]
H. Bang, H. Shin, Y. Ju, Korea Institute of Energy Research (Korea, Republic of)
- 7647 4I **Adaptive optics system for fast automatic control of laser beam jitters in air** [7647-161]
S. Grasso, Univ. degli Studi di Roma Tre (Italy); F. Acernese, R. Romano, F. Barone, Univ. degli Studi di Salerno (Italy) and Complesso Univ. di Monte S. Angelo (Italy)
- 7647 4K **Development of NDT system with image reconstruction capabilities of flaws** [7647-163]
Y. Nishimura, S. Akira, T. Suzuki, National Institute of Advanced Industrial Science and Technology (Japan)
- 7647 4L **Oblique excitation of nearly-longitudinal waves in thick plates** [7647-164]
Y. Ying, I. J. Oppenheim, J. H. Garrett, Jr., D. W. Greve, L. Soibelman, Carnegie Mellon Univ. (United States)
- 7647 4M **Development and performance research of FBG strain sensor for monitoring on asphalt concrete pavement** [7647-165]
Q. Hu, C. Wang, J. Ou, Harbin Institute of Technology (China)

- 7647 4O **An optimal design of magnetostrictive material (MsM) based energy harvester** [7647-167]
J. Hu, F.-G. Yuan, North Carolina State Univ. (United States); F. Xu, North Carolina State Univ. (United States) and Donghua Univ. (China); A. Q. Huang, North Carolina State Univ. (United States)
- 7647 4P **Structural phase transition path-following and stable phase scouting through a coupled DFT-BFB algorithm** [7647-168]
D. B. Ghosh, M. Cococcioni, R. S. Elliott, Univ. of Minnesota (United States)
- 7647 4Q **In-situ geo-characterization using wireless functional signals** [7647-169]
X. Li, Lehigh Univ. (United States); T. S. Yun, Yonsei Univ. (Korea, Republic of); L. Cheng, S. Pamukcu, Y. Dong, Lehigh Univ. (United States)
- 7647 4R **Low-cost self-cleaning room temperature SnO₂ thin film gas sensor on polymer nanostructures** [7647-170]
H. Huo, F. Yan, C. Wang, H. Ren, M. Shen, Univ. of Massachusetts Lowell (United States)
- 7647 4S **Classification of damage in structural systems using time series analysis and supervised and unsupervised pattern recognition techniques** [7647-171]
P. Omenzetter, O. R. de Lautour, The Univ. of Auckland (New Zealand)

Author Index

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Hiroyuki Yamanouchi, Building Research Institute (Japan)
Jian Zhang, Drexel University (United States)
Li Zhou, Nanjing University of Aeronautics and Astronautics (China)

Session Chairs

- 1 Keynote Session
 - Chung-Bang Yun**, Korea Advanced Institute of Science and Technology (Korea, Republic of)
 - Victor Giurgiutiu**, University of South Carolina (United States)
 - Jerome P. Lynch**, University of Michigan (United States)

- 2a Wireless Sensors for SHM
Jeong-Tae Kim, Pukyong National University (Korea, Republic of)
Lindsey S. Bryson, University of Kentucky (United States)
- 2b Damage Detection
Yang Wang, Georgia Institute of Technology (United States)
Paul Fromme, University College London (United Kingdom)
- 3a Next-Generation Wireless Sensing Devices and Techniques
Yang Wang, Georgia Institute of Technology (United States)
Kenneth J. Loh, University of California, Davis (United States)
- 3b Structural Control
Steven W. Shaw, Michigan State University (United States)
Masayoshi Tomizuka, University of California, Berkeley (United States)
- 4a Innovative Excitation and Sensing Technologies
Hoon Sohn, Korea Advanced Institute of Science and Technology
(Korea, Republic of)
- 4b Sensors I
Chengying Xu, University of Central Florida (United States)
Alison B. Flatau, University of Maryland, College Park (United States)
- 5a Smart Sensors and Materials I
Xiong Yu, Case Western Reserve University (United States)
Baoguo Han, Harbin Institute of Technology (China)
- 5b Sensors II
Dumitru Curatu, Accelent Technologies (United States)
X. Peter Qing, Accelent Technologies (United States)
- 6a Embedded Data Processing in Sensor Networks for Structural Health
Monitoring I
Jerome P. Lynch, University of Michigan (United States)
Billie F. Spencer, Jr., University of Illinois at Urbana-Champaign
(United States)
- 6b Sensors III
Stewart Sheritt, Jet Propulsion Laboratory (United States)
Steven D. Glaser, University of California, Berkeley (United States)
- 7a SHM/Damage Detection Method I
Charles R. Farrar, Los Alamos National Laboratory (United States)
Dryver R. Huston, The University of Vermont (United States)

- 7b Signal Processing
Nesrin Sarigul-Klijn, University of California, Davis (United States)
Balakumar Balachandran, University of Maryland, College Park (United States)
- 8a Signal Processing and Damage Detection I
Jeong-Tae Kim, Pukyong National University (Korea, Republic of)
- 8b Nano and MEMS
Ming L. Wang, Northeastern University (United States)
Jugdutt J. Singh, La Trobe University (Australia)
- 9a Piezo Sensors and Applications
Haeng-Ki Lee, Korea Advanced Institute of Science and Technology (Korea, Republic of)
Venu Gopal Madhav Annamdas, Nanyang Technological University (Singapore)
- 9b Structural Life Prognosis
Andreas Ricoeur, Universität Kassel (Germany)
Cliff J. Lissenden, The Pennsylvania State University (United States)
- 10a Embedded Data Processing in Sensor Networks for Structural Health Monitoring II
Jerome P. Lynch, University of Michigan (United States)
Jennifer Rice, Texas Tech University (United States)
- 10b Smart Materials
Ryan S. Elliott, University of Minnesota (United States)
Jiong Tang, University of Connecticut (United States)
- 11a Fiber Optice Sensors and Applications I
Ki Soo Kim, Hongik University (Korea, Republic of)
Assaf Klar, Technion-Israel Institute of Technology (Israel)
- 11b Multi-domain Modeling
Uwe Marschner, Technische Universität Dresden (Germany)
Victor Giurgiutiu, University of South Carolina (United States)
- 12a Energy Harvesting
Christian U. Grosse, Universität Stuttgart (Germany)
- 12b Smart Sensors and Materials II
Fausto Acernese, Università degli Studi di Salerno (Italy)
- 12c Modeling and Mechanics
Jeong-Tae Kim, Pukyong National University (Korea, Republic of)

- 13a Signal Processing and Damage Detection II
Hongwei Huang, Tongji University (China)
Hong Wan, Southeast University (China)

- 13b Actuators
Mircea Badescu, Jet Propulsion Laboratory (United States)
Constantinos Mavroidis, Northeastern University (United States)
Muzaffer Y. Uzsecen, Northeastern University (United States)

- 13c Fiber Optic Sensors and Applications II
Hyung-Joon Bang, Korea Institute of Energy Research
(Korea, Republic of)

- 14a Bridge Inspection and Monitoring Systems
Chung-Bang Yun, Korea Advanced Institute of Science and
Technology (Korea, Republic of)
Shenen Chen, The University of North Carolina at Charlotte
(United States)

- 14b Image-based Sensing
Anjana Jain, National Aerospace Laboratories (India)

- 14c Wave Propagation and Damage Detection
Shuang Hou, Dalian University of Technology (China)
Yuanwei Jin, University of Maryland (United States)
Irving J. Oppenheim, Carnegie Mellon University (United States)

- 15a Damping and Response Modification
Bin Wu, Harbin Institute of Technology (China)
Norman Werely, University of Maryland (United States)

- 15b Wireless Sensors and Energy Harvesting
Irving J. Oppenheim, Carnegie Mellon University (United States)

- 15c SHM/Damage Detection Methods II
Henrique L. Reis, University of Illinois at Urbana-Champaign
(United States)
Jann N. Yang, University of California, Irvine (United States)

Introduction

This volume is a collection of technical papers presented at the 2010 SPIE conference held in San Diego, California, on Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems. This conference is unique in the emerging area of sensors and smart structures technologies because of its multidisciplinary representations from the aerospace, civil and mechanical engineering communities. Participants were from more than 23 countries over the globe. The conference also served as the *de-facto* grantees' conference of the Sensors and Sensing Systems (SSS) program of the Civil, Mechanical and Manufacturing Innovation (CMMI) Division of the National Science Foundation (NSF). The participation of the Asian-Pacific Network of Centers for Research in Smart Structure Technology (ANCRiSST) as the conference co-sponsor strengthened international participations. As you find in the roster of the program committee, members of the program committee represented almost all the sub-disciplines of the engineering field. The conference showed approximately 10% growth from the previous year in terms of the number of papers accepted. The conference started with a plenary session with two excellent keynote presentations: "Bio-informed framework enabling multimetric infrastructure monitoring" by Professor Bill F. Spencer, Jr., University of Illinois at Urbana-Champaign, and "Learning from plants: bio-inspired multifunctional adaptive structural systems" by Professor Kon-Well Wang, University of Michigan. The opening plenary session was followed by 33 topical sessions and one poster session. The papers in these sessions covered a wide range of topics in: fiber optics and other novel sensors, structural health monitoring, signal processing, damage detection and assessment, wireless technologies, modeling and analysis of smart systems and applications to civil, mechanical and aerospace systems. Research papers supported by the NSF SSS program were presented at both respective topical sessions and the NSF poster session. Lively discussions among Dr. Shih-Chi Liu, CMMI Program Director in charge of the SSS program, principal investigators of the NSF projects and other participants took place during the poster session.

In conjunction with the broad technical base of the current conference program and its objectives, it is apparent that we must continue to develop and build a large, diverse constituency. In light of the increased number of submissions to this conference that we witnessed in recent years, we are optimistic in this regard. We would like to thank authors and presenters of this year's conference for their contributions. The outstanding conference program was put together by the fine effort of the program committee, and we are thankful to the members of the program committee for their unyielding commitment to making the conference a great success.

We trust that readers will find this conference volume useful and informative.

**Masayoshi Tomizuka
Chung-Bang Yun
Victor Giurgiutiu
Jerome P. Lynch**