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The CID Number appears on each page of the manuscript. The complete citation is used on the first page, and an abbreviated version on subsequent pages. Numbers in the index correspond to the last two digits of the six-digit CID Number.

Contents

Part One

- xiii *Conference Committee*
xvii *Introduction*

GUIDED WAVES FOR SHM: COMPOSITES I

- 8695 02 **Monitoring of corrosion damage using high-frequency guided ultrasonic waves** [8695-1]
P. Fromme, Univ. College London (United Kingdom)
- 8695 03 **Characterization of Lamb wave attenuation mechanisms** [8695-2]
D. Schmidt, H. Sadri, A. Szewieczek, M. Sinapius, P. Wierach, German Aerospace Ctr. (DLR) (Germany); I. Siegert, A. Wendemuth, Otto-von-Guericke-Univ. Magdeburg (Germany)
- 8695 04 **Structural health monitoring and damage prognosis in composite repaired structures through the excitation of guided ultrasonic waves** [8695-3]
S. Pavlopoulou, K. Worden, The Univ. of Sheffield (United Kingdom); C. Soutis, Univ. of Manchester (United Kingdom)
- 8695 05 **Lamb waves in a honeycomb composite sandwich plate** [8695-4]
H. Samajder, Univ. of California, Los Angeles (United States); H. Baid, AlphaSTAR Corp. (United States); F. Ricci, Univ. degli Studi di Napoli Federico II (Italy); A. Mal, Univ. of California, Los Angeles (United States)
- 8695 06 **Detection of impact damage in composite panels using guided ultrasonic waves** [8695-6]
B. I. S. Murat, P. Fromme, Univ. College London (United Kingdom)

CIVIL ENGINEERING APPLICATIONS: BRIDGES AND BUILDINGS

- 8695 07 **Structural health monitoring of bridges using digital image correlation** [8695-7]
C. Nonis, C. Niezrecki, T.-Y. Yu, S. Ahmed, C.-F. Su, Univ. of Massachusetts Lowell (United States); T. Schmidt, Trilion Quality Systems (United States)
- 8695 08 **Real-time structural health monitoring of live loads on a flat commercial roof** [8695-8]
O.-Y. Yu, S. Moore, Appalachian State Univ. (United States)
- 8695 09 **Applications of inter-digitized transducers (IDTs) for structural health monitoring (SHM) of bridge structures** [8695-9]
J. K. Na, S. T. Gleeson, Edison Welding Institute (United States)

GUIDED WAVES FOR SHM: COMPOSITES II

- 8695 0D **Damage detection in reusable launch vehicle components using guided ultrasonic waves and 3D laser vibrometry** [8695-13]
D. Barnoncel, Astrium SAS (France); W. J. Staszewski, AGH Univ. of Science and Technology (Poland); J. Schell, Polytec GmbH (Germany); P. Peres, Astrium SAS (France)
- 8695 0E **NDE of composite structures using ultrasonic guided waves** [8695-15]
A. Mal, Univ. of California, Los Angeles (United States); F. Ricci, Univ. degli Studi di Napoli Federico II (Italy); H. Samajder, Univ. of California, Los Angeles (United States); H. Baid, AlphaSTAR Corp. (United States)
- 8695 0F **Predictive modeling of PWAS-coupled shear horizontal waves** [8695-16]
A. Kamal, B. Lin, V. Giurgiutiu, Univ. of South Carolina (United States)
- 8695 0H **A new temperature compensation method for guided wave-based structural health monitoring** [8695-18]
Y. Wang, Beijing Aeronautical Science and Technology Research Institute (China) and Dalian Univ. of Technology (China); L. Qiu, Nanjing Univ. of Aeronautics and Astronautics (China); L. Gao, Beijing Aeronautical Science and Technology Research Institute (China); S. Yuan, Nanjing Univ. of Aeronautics and Astronautics (China); X. Qing, Beijing Aeronautical Science and Technology Research Institute (China)
- 8695 0I **Advanced signal processing for high temperatures health monitoring of condensed water height in steam pipes** [8695-130]
S.-S. Lih, Y. Bar-Cohen, H. J. Lee, N. Takano, X. Bao, Jet Propulsion Lab. (United States)

ISSUES AND PRACTICAL CONSIDERATIONS RELATED TO SHM I

- 8695 0J **Automated extraction of damage features through genetic programming** [8695-19]
D. Y. Harvey, M. D. Todd, Univ. of California, San Diego (United States)
- 8695 0K **Technological challenges of developing wireless health and usage monitoring systems** [8695-20]
C. S. Ling, D. Hewitt, S. G. Burrow, L. Clare, D. A. W. Barton, Univ. of Bristol (United Kingdom); D. M. Wells, AgustaWestland (United Kingdom); N. A. J. Lieven, Univ. of Bristol (United Kingdom)
- 8695 0L **Integrated nondestructive testing approach for damage detection and quantification in structural components** [8695-21]
P. A. Vanniamparambil, F. Khan, R. Carmi, S. Rajaram, E. Schwartz, A. Kontsos, I. Bartoli, Drexel Univ. (United States)
- 8695 0M **Error analysis of the extended Kalman filter applied to the simultaneous localization and mapping problem** [8695-22]
R. Jaci, N. Chopra, B. Balachandran, Univ. of Maryland, College Park (United States); H. Karki, The Petroleum Institute (United Arab Emirates)

GUIDED WAVES FOR SHM: NONLINEAR ULTRASONICS

- 8695 0P **Nonlinear guided waves in solids under constrained thermal expansion** [8695-25]
C. Nucera, F. Lanza di Scalea, Univ. of California, San Diego (United States)
- 8695 0Q **Monitoring ageing of alkali resistant glass fiber reinforced cement (GRC) using guided ultrasonic waves** [8695-26]
J. N. Eiras, Univ. Politècnica de València (Spain); U. Amjad, E. Mahmoudabadi, The Univ. of Arizona (United States); J. Payá, M. Bonilla, Univ. Politècnica de València (Spain); T. Kundu, The Univ. of Arizona (United States)
- 8695 0R **Fatigue crack detection using guided waves nonlinear modulation** [8695-27]
H. Sohn, H. J. Lim, KAIST (Korea, Republic of); M. P. DeSimio, Univ. of Dayton Research Institute (United States); K. Brown, M. Derriso, Air Force Research Lab. (United States)
- 8695 0S **Cumulative second harmonics in weakly nonlinear plates and shells** [8695-28]
Y. Liu, C. J. Lissenden, J. L. Rose, The Pennsylvania State Univ. (United States)

ISSUES AND PRACTICAL CONSIDERATION RELATED TO SHM II

- 8695 0W **Numerical and experimental analysis of guided waves propagation in composite plates** [8695-32]
M. Carrara, M. Ruzzene, Georgia Institute of Technology (United States)
- 8695 0Z **A design for autonomous self-building blocks** [8695-35]
Z. Lu, C.-L. Tsui, J. Thorn, Univ. of Washington (United States); W.-C. Wang, Univ. of Washington (United States) and National Cheng Kung Univ. (Taiwan)

OPTICAL TECHNIQUES FOR SHM

- 8695 11 **Structural dynamic characterization of small-scale multipurpose payloads using conventional and fiber optic sensors** [8695-37]
R. Clemens, A. Zagrai, J. Schlavin, New Mexico Institute of Mining and Technology (United States); V. Sotoudeh, R. J. Black, J. Costa, L. Oblea, F. Faridian, B. Moslehi, Intelligent Fiber Optic Systems Corp. (United States); J. M. Oliveira, NASA Kennedy Space Ctr. (United States)
- 8695 12 **Life cycle strain monitoring of composite airframe structures by FBG sensors** [8695-38]
I. Takahashi, K. Sekine, M. Kume, H. Takeya, Mitsubishi Electric Corp. (Japan); S. Minakuchi, N. Takeda, The Univ. of Tokyo (Japan); K. Enomoto, SOKEIZAI Ctr. (Japan)
- 8695 13 **Structural health monitoring of concrete elements with embedded arrays of optical fibers** [8695-39]
S. Khotiaintsev, A. Beltrán-Hernández, J. González-Tinoco, H. Guzmán-Olguín, G. Aguilar-Ramos, Univ. Nacional Autónoma de México (Mexico)

SHM FOR PIPES

- 8695 14 **High temperatures health monitoring of the condensed water height in steam pipe systems** [8695-40]
H. J. Lee, Y. Bar-Cohen, S.-S. Lih, M. Badescu, X. Bao, S. Sherrit, N. Takano, P. Ostlund, J. Bloziu, Jet Propulsion Lab. (United States)
- 8695 15 **Change in time-of-flight of longitudinal (axisymmetric) wave modes due to lamination in steel pipes** [8695-41]
U. Amjad, C. H. Nguyen, S. K. Yadav, E. Mahmoudabadi, T. Kundu, The Univ. of Arizona (United States)

GUIDED WAVES FOR SHM: LOCALIZATION ISSUES

- 8695 17 **Localization of defects in irregular waveguides by dispersion compensation and pulse compression** [8695-43]
L. De Marchi, A. Marzani, M. Miniaci, A. Perelli, N. Testoni, Univ. degli Studi di Bologna (Italy)
- 8695 18 **Adaptive unscented Kalman filter (UKF) for acoustic emission (AE) source localization in noisy environment** [8695-44]
E. Dehghan Niri, A. Farhidzadeh, S. Salamone, Univ. at Buffalo (United States)
- 8695 19 **Guided waves-based damage localization in riveted aircraft panel** [8695-45]
T. Wandowski, P. Malinowski, W. Ostachowicz, Institute of Fluid-Flow Machinery (Poland)
- 8695 1A **Signal processing for the inspection of immersed structures** [8695-46]
E. Pistone, A. Bagheri, K. Li, P. Rizzo, Univ. of Pittsburgh (United States)
- 8695 1B **Design of a low-power structural monitoring system to locate impacts based on dispersion compensation** [8695-47]
A. Perelli, C. Caione, L. De Marchi, Univ. degli Studi di Bologna (Italy); D. Brunelli, Univ. degli Studi di Trento (Italy); A. Marzani, L. Benini, Univ. degli Studi di Bologna (Italy)
- 8695 1C **Quantitative monitoring of two-dimensional damage using envelope locating curves method** [8695-48]
C. Du, Beijing Aeronautical Science and Technology Research Institute (China) and Peking Univ. (China); Y. Wang, Beijing Aeronautical Science and Technology Research Institute (China) and Dalian Univ. of Technology (China); J. Cai, X. Qing, Beijing Aeronautical Science and Technology Research Institute (China)

SHM FOR BIOMEDICAL APPLICATIONS I

- 8695 1D **Smart materials for high power applications (Invited Paper)** [8695-49]
S. Zhang, H. J. Lee, T. R. Shrout, The Pennsylvania State Univ. (United States)
- 8695 1H **Design, fabrication, and test of a small aperture, dual frequency ultrasound transducer** [8695-53]
J. Ma, Z. Wang, X. Jiang, North Carolina State Univ. (United States)

GUIDED WAVES FOR SHM: DISTRIBUTED SENSORS AND SENSOR NETWORK

- 8695 1I **Implementation of a novel imaging technique in an existing structural health monitoring system** [8695-54]
P. Masson, N. Quaegebeur, A. Brunel, Univ. de Sherbrooke (Canada); N. Mrad, Defence Research and Development Canada (Canada)
- 8695 1J **Guided ultrasonic wave propagation through inaccessible damage in a folded plate using sensor-actuator network** [8695-55]
G. Kolappan Geetha, D. Roy Mahapatra, S. Gopalakrishnan, Indian Institute of Science (India)
- 8695 1L **Evaluation of the Lamb waves approach to detect simulated damage in orthogonal plane of the sensor network surface for corrosion detection application** [8695-57]
F. Dotta, L. B. Ceresetti, Embraer S.A. (Brazil)

SHM FOR RAILWAY TRACK, ENERGY HARVESTING, AND OTHER ISSUES

- 8695 1M **On the self-powering of SHM techniques using seismic energy harvesting** [8695-58]
Y.-C. Wu, M. Lallart, L. Yan, D. Guyomar, C. Richard, Institut National des Sciences Appliquées de Lyon (France)
- 8695 1N **Axial stress determination using Impedance-based method and its application on the thermal stresses measurement in continuous welded rail** [8695-59]
X. Zhu, R. Phillips, F. Lanza di Scalea, Univ. of California, San Diego (United States)
- 8695 1O **Experiment study on structure health monitoring with high-order resonant circuit** [8695-60]
W. Zhou, Y. Wu, L. Zuo, Stony Brook Univ. (United States)
- 8695 1P **Multiscale analysis of wave-damage interaction in two and three dimensional isotropic plates** [8695-61]
F. Casadei, Harvard Univ. (United States); J. J. Rimoli, M. Ruzzene, Georgia Institute of Technology (United States)

Part Two

GUIDED WAVES FOR SHM: MODELING ASPECTS

- 8695 1R **Piezoelectric coupled LISA for guided wave generation and propagation** [8695-63]
K. S. Nadella, C. E. S. Cesnik, Univ. of Michigan (United States)
- 8695 1S **Modeling of guided waves for detection of linear and nonlinear structural damage** [8695-64]
Y. Shen, V. Giurgiutiu, Univ. of South Carolina (United States)
- 8695 1T **A coupled SAFE-BEM formulation for dispersion data extraction of leaky guided waves in waveguides of arbitrary cross-section** [8695-65]
M. Mazzotti, A. Marzani, Univ. degli Studi di Bologna (Italy); I. Bartoli, Drexel Univ. (United States); E. Viola, Univ. degli Studi di Bologna (Italy)

- 8695 1U **Simulation of Lamb waves using the spectral cell method** [8695-66]
S. Duczek, Otto-von-Guericke-Univ. Magdeburg (Germany); M. Joulaian, A. Duster,
Hamburg Univ. of Technology (Germany); U. Gabbert, Otto-von-Guericke-Univ.
Magdeburg (Germany)
- 8695 1V **A guided wave approach for the detection of damage in a structure having elements with periodic damage** [8695-67]
S. Mukherjee, S. Gopalakrishnan, Indian Institute of Science (India)
- 8695 1W **Fully coupled electromechanical elastodynamic model for guided wave propagation analysis** [8695-68]
L. Borkowski, K. Liu, A. Chattopadhyay, Arizona State Univ. (United States)

NOVEL INSTRUMENTATION FOR SENSING AND ACTUATION

- 8695 1Y **A flexible insert for wireless strain sensing** [8695-70]
I. J. Oppenheim, Carnegie Mellon Univ. (United States); D. W. Greve, Carnegie Mellon Univ.
(United States) and National Energy Technology Lab. (United States); A. F. Chen, Univ. of
Pittsburgh (United States)
- 8695 20 **Liquid viscosity measurement using super-harmonic resonance** [8695-72]
W.-C. Wang, Univ. of Washington (United States) and National Cheng Kung Univ. (Taiwan);
C.-S. Liu, Univ. of Washington (United States)
- 8695 21 **Effects of fastener load on wave propagation through lap joint** [8695-73]
J. Bao, V. Giurgiutiu, Univ. of South Carolina (United States)
- 8695 23 **Forward light scattering method for structural characterization of electrospun fibers**
[8695-75]
W.-C. Wang, Univ. of Washington (United States) and National Cheng Kung Univ. (Taiwan);
C.-S. Liu, Univ. of Washington (United States); Z.-R. You, J.-J. Hu, National Cheng Kung Univ.
(Taiwan)
- 8695 24 **Spectroscopic ellipsometry investigation of gold nanoparticles embedded in PDMS for bio-sensing applications** [8695-76]
M. T. Yaseen, Academia Sinica (Taiwan) and National Tsing Hua Univ. (Taiwan);
Y.-C. Chang, Academia Sinica (Taiwan)

SHM FOR COMPOSITE MATERIALS

- 8695 25 **Guided wave propagation in carbon composite laminate using piezoelectric wafer active sensors** [8695-77]
M. Gresil, V. Giurgiutiu, Univ. of South Carolina (United States)
- 8695 26 **Sensing capability for a delamination in carbon fiber reinforced polymer laminates via embedded Terfenol-D particles** [8695-78]
J. Rudd, D. Spayde, O. Myers, Mississippi State Univ. (United States)

GUIDED WAVES FOR SHM: TEMPERATURE AND TEXTURE ISSUES

- 8695 28 **Nonlinear guided waves for neutral temperature measurement in continuous welded rails: results from laboratory and field tests** [8695-80]
C. Nucera, R. Phillips, P. Zhu, S. Mariani, F. Lanza di Scalea, Univ. of California, San Diego (United States); M. Fateh, G. Carr, Federal Railroad Administration (United States)
- 8695 2A **Temperature-independent localization algorithm using guided wave interrogation methods** [8695-82]
K. Hensberry, N. Kovvali, A. Chattopadhyay, Arizona State Univ. (United States)
- 8695 2B **Studies of texture in nuclear graphites using laser ultrasonic line source measurements** [8695-83]
J. B. Spicer, L. R. Lindamood, The Johns Hopkins Univ. (United States)
- 8695 2C **Temperature effect modelling of piezoceramic transducers used for Lamb wave propagation in damage detection applications** [8695-84]
P. Kijanka, P. Packo, W. J. Staszewski, T. Uhl, AGH Univ. of Science and Technology (Poland)
- 8695 2D **Cointegration and wavelet-analysis-based approach for Lamb-wave-based structural damage detection** [8695-85]
P. B. Dao, W. J. Staszewski, AGH Univ. of Science and Technology (Poland)

SHM FOR BIOMEDICAL APPLICATIONS II

- 8695 2E **In-vivo muscle length-force-joint angle relationship for quasi-static muscle action of the biceps muscle** [8695-86]
M. Zakir Hossain, Univ. of Leipzig (Germany); M. Pluta, Wrocław Univ. of Technology (Poland); W. Grill, Univ. of Leipzig (Germany) and ASI Analog Speed Instruments GmbH (Germany)
- 8695 2F **A 2D piezoelectric actuated scanning image acquisition** [8695-87]
K. Gu, C.-J. Lee, Univ. of Washington (United States); C.-W. Wu, C.-H. Chien, National Cheng Kung Univ. (Taiwan); W.-C. Wang, Univ. of Washington (United States) and National Cheng Kung Univ. (Taiwan)
- 8695 2G **Quantitative simulation of wave propagation in a human leg to support the ultrasonic noninvasive assessment of human bones** [8695-88]
G. Castellazzi, L. De Marchi, Univ. degli Studi di Bologna (Italy); P. Krysl, Univ. of California, San Diego (United States); A. Marzani, Univ. degli Studi di Bologna (Italy)
- 8695 2I **Electromagnetic coil/inductance-based nondestructive methods for locating distal screw-holes of an intramedullary interlocking-nail** [8695-90]
T.-K. Chung, H.-J. Chu, National Chiao Tung Univ. (Taiwan); T.-H. Wong, National Taiwan Univ. Hospital (Taiwan); Y.-W. Cheng, W. Hsu, M.-S. Lee, National Chiao Tung Univ. (Taiwan)

METAMATERIAL

- 8695 2J **An elastic metamaterial beam for broadband vibration suppression** [8695-91]
R. Zhu, Univ. of Arkansas at Little Rock (United States); G. K. Hu, Beijing Institute of Technology (China); M. Reynolds, Univ. of Arkansas at Fort Smith (United States); G. L. Huang, Univ. of Arkansas at Little Rock (United States)
- 8695 2K **High stiffness, high damping chiral metamaterial assemblies for low-frequency applications** [8695-92]
E. Baravelli, Georgia Institute of Technology (United States) and Univ. degli Studi di Bologna (Italy); M. Carrara, M. Ruzzene, Georgia Institute of Technology (United States)
- 8695 2L **Novel split ring metamaterial for multiple band gaps and vibration control** [8695-93]
R. Ahmed, S. Banerjee, Univ. of South Carolina (United States)
- 8695 2M **Actual working mechanisms of smart metamaterial structures** [8695-94]
P. F. Pai, Univ. of Missouri-Columbia (United States); M. J. Sundareshan, North Carolina A&T State Univ. (United States)
- 8695 2P **Focusing flexural Lamb waves by designing elastic metamaterials bonded on a plate** [8695-97]
X. Yan, North Carolina State Univ. (United States); R. Zhu, G. L. Huang, Univ. of Arkansas at Little Rock (United States); F. G. Yuan, North Carolina State Univ. (United States)

GUIDED WAVE FOR SHM: SENSING, EXCITATION AND RELATED ISSUES

- 8695 2V **Stability of guided wave signals from bonded piezoelectric sensors** [8695-103]
K. A. Vehorn, M. P. DeSimio, S. E. Olson, Univ. of Dayton Research Institute (United States); K. S. Brown, M. S. Leonard, Air Force Research Lab. (United States)
- 8695 2W **Uncertainty quantification of a guided wave structural health monitoring system for composite bolted joints** [8695-104]
C. Haynes, M. Todd, Univ. of California, San Diego (United States)
- 8695 2X **Pressure mapping system based on guided waves reflection** [8695-105]
N. Quaegebeur, P. Masson, L.-P. Brault, N. Beaudet, P. Sarret, Univ. de Sherbrooke (Canada)
- 8695 2Y **Wavelet best basis compressed sensing of ultrasonic guided waves** [8695-106]
A. Perelli, L. De Marchi, L. Flamigni, A. Marzani, N. Speciale, Univ. degli Studi di Bologna (Italy)
- 8695 2Z **Crack detection with Lamb wave wavenumber analysis** [8695-107]
Z. Tian, Univ. of South Carolina (United States); C. Leckey, M. Rogge, NASA Langley Research Ctr. (United States); L. Yu, Univ. of South Carolina (United States)

VIBRATION BASED SHM SYSTEMS

- 8695 31 **Bolted joint loosening detection by using laser excitation** [8695-109]
F. Huda, Hokkaido Univ. (Japan) and Univ. of Riau (Indonesia); I. Kajiwara, Hokkaido Univ. (Japan); N. Hosoya, Shibaura Institute of Technology (Japan); S. Kawamura, Toyohashi Univ. of Technology (Japan)
- 8695 32 **Damage-patterns-based method to locate discontinuities in beams** [8695-110]
G.-R. Gillich, Z.-I. Praisach, Univ. Eftimie Murgu Resita (Romania)
- 8695 33 **Dynamic characteristics and vibration-based damage inspection of structures with actual fatigue cracks** [8695-111]
P. F. Pai, Univ. of Missouri-Columbia (United States); J. Liu, Northwestern Polytechnical Univ. (China); M. J. Sundaresan, North Carolina A&T State Univ. (United States)
- 8695 34 **Monitoring the fracture healing of an internally fixated pelvis using vibration analysis** [8695-112]
L. C. Y. Wong, W. K. Chiu, Monash Univ. (Australia); M. Russ, S. Liew, The Alfred (Australia)

SIGNAL PROCESSING FOR SHM

- 8695 35 **Frequency response feature selection in a Bayesian framework** [8695-113]
Z. Mao, M. Todd, Univ. of California, San Diego (United States)
- 8695 36 **Abnormal behavior detection in the Jeremiah Morrow Bridge based on the long term measurement-data patterns** [8695-114]
M. Norouzi, V. Hunt, A. Helmicki, Univ. of Cincinnati (United States)
- 8695 37 **Multiscale characterization of damage in plates based on 2D Mexican wavelet** [8695-116]
M. Cao, Institute of Fluid-Flow Machinery (Poland) and Hohai Univ. (China); M. Radziński, Institute of Fluid-Flow Machinery (Poland); W. Ostachowicz, Institute of Fluid-Flow Machinery (Poland) and Warsaw Univ. of Technology (Poland); W. Xu, Hohai Univ. (China)
- 8695 38 **The PRICONA algorithm for biological spectra normalization** [8695-117]
R. Romano, R. Canonico, F. Acernese, Univ. degli Studi di Salerno (Italy); P. L. Indovina, Univ. degli Studi di Napoli Federico II (Italy); F. Barone, Univ. degli Studi di Salerno (Italy)
- 8695 39 **Detection of damage in beams using Teager energy operator** [8695-118]
W. Xu, Hohai Univ. (China); W. Ostachowicz, Institute of Fluid-Flow Machinery (Poland) and Warsaw Univ. of Technology (Poland); M. Cao, Hohai Univ. (China) and Institute of Fluid-Flow Machinery (Poland); Z. Su, The Hong Kong Polytechnic Univ. (Hong Kong, China)
- 8695 3A **Phased array design for optimized directivity behavior in guided wave applications** [8695-5]
A. Dantele, PROFACTOR GmbH (Austria); H. Steiner, Austrian Academy of Sciences (Austria); J. Korak, C. Feyrer, H. Wernick, PROFACTOR GmbH (Austria)

POSTER SESSION

- 8695 3B **Tissue characterization using an acoustic wave tactile sensor array** [8695-119]
K. Kim, X. Jiang, North Carolina State Univ. (United States)
- 8695 3C **Sensitivity-based optimal sensor placement of multi-type sensor** [8695-120]
X. Sun, G. Hou, Z. Wang, Harbin Engineering Univ. (China)
- 8695 3D **Bi-probability structural risk management for container cranes** [8695-121]
X. Mei, D. Dong, C. Wang, X. Wang, Shanghai Maritime Univ. (China)
- 8695 3E **Damage detection using vector auto-regressive models** [8695-122]
Z. Huang, G. Liu, Chongqing Univ. (China); M. Todd, Z. Mao, Univ. of California, San Diego (United States)
- 8695 3H **Damage detection of a prototype building structure under shaking table testing using outlier analysis** [8695-125]
J.-H. Hwang, B.-C. Joo, Y.-J. Yoo, K.-T. Park, C.-H. Lee, Korea Institute of Construction Technology (Korea, Republic of)
- 8695 3I **Piezo-composites for energy harvesting from low-frequency noises** [8695-126]
Y. Zhang, X. Zhou, G. Hu, Beijing Institute of Technology (China); G. Huang, Univ. of Arkansas at Little Rock (United States)
- 8695 3M **Development of locally resonant structures for sonic barriers** [8695-131]
A. Hall, Callaghan Innovation (New Zealand) and Univ. of Auckland (New Zealand); E. Calius, Callaghan Innovation (New Zealand); G. Dodd, Univ. of Auckland (New Zealand); K. L. Chan, Callaghan Innovation (New Zealand)

Author Index

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Session Chairs

- 1 Guided Waves for SHM: Composites I
Tribikram Kundu, The University of Arizona (United States)
Wolfgang Grill, Universität Leipzig (Germany)
- 2 Civil Engineering Applications: Bridges and Buildings
Irving J. Oppenheim, Carnegie Mellon University (United States)
- 3 Guided Waves for SHM: Composites II
Hoon Sohn, KAIST (Korea, Republic of)
Francesco Lanza di Scalea, University of California, San Diego (United States)
- 4 Issues and Practical Considerations Related to SHM I
Xiaoning Jiang, North Carolina State University (United States)
Kalyan S. Nadella, University of Michigan (United States)
- 5 Guided Waves for SHM: Nonlinear Ultrasonics
Francesco Lanza di Scalea, University of California, San Diego (United States)
Hoon Sohn, KAIST (Korea, Republic of)
- 6 Issues and Practical Consideration Related to SHM II
Daniel Guyomar, Institut National des Sciences Appliquées de Lyon (France)
Andrei N. Zagrai, New Mexico Institute of Mining and Technology (United States)

- 7 Optical Techniques for SHM
Ichiya Takahashi, Mitsubishi Electric Corporation (Japan)
Wolfgang Grill, Universität Leipzig (Germany)
- 8 SHM for Pipes
Paul Fromme, University College London (United Kingdom)
Tribikram Kundu, The University of Arizona (United States)
- 9 Guided Waves for SHM: Localization Issues
Shivan Haran, Arkansas State University (United States)
Piervincenzo Rizzo, University of Pittsburgh (United States)
- 10 SHM for Biomedical Applications I
Xiaoning Jiang, North Carolina State University (United States)
Shujun Zhang, The Pennsylvania State University (United States)
- 11 Guided Waves for SHM: Distributed Sensors and Sensor Network
Jennifer E. Michaels, Georgia Institute of Technology (United States)
Paul Fromme, University College London (United Kingdom)
- 12 SHM for Railway Track, Energy Harvesting, and Other Issues
Francesco Lanza di Scalea, University of California, San Diego
(United States)
- 13 Guided Waves for SHM: Modeling Aspects
Hoon Sohn, KAIST (Korea, Republic of)
X. Peter Qing, Commercial Aircraft Corporation of China, Ltd.
(China)
- 14 Novel Instrumentation for Sensing and Actuation
Wei-Chih Wang, University of Washington (United States)
Wolfgang Grill, Universität Leipzig (Germany)
- 15 SHM for Composite Materials
Victor Giurgiutiu, University of South Carolina (United States)
Sourav Banerjee, University of South Carolina (United States)
- 16 Guided Waves for SHM: Temperature and Texture Issues
Sourav Banerjee, University of South Carolina (United States)
Lingyu Yu, University of South Carolina (United States)
- 17 SHM for Biomedical Applications II
George Zentai, Varian Medical Systems, Inc. (United States)
Wei-Chih Wang, University of Washington (United States)

- 18 Metamaterial
Guoliang Huang, University of Arkansas at Little Rock (United States)
Xiaoming Zhou, Beijing Institute of Technology (China)
- 19 SHM based on Nonlinear Techniques
Sridhar Krishnaswamy, Northwestern University (United States)
Andrei N. Zagrai, New Mexico Institute of Mining and Technology
(United States)
- 20 Guided Wave for SHM: Sensing, Excitation and Related Issues
Lingyu Yu, University of South Carolina (United States)
Jennifer E. Michaels, Georgia Institute of Technology (United States)
- 21 Vibration Based SHM Systems
Perngjin F. Pai, University of Missouri-Columbia (United States)
Alireza Farhidzadeh, University at Buffalo (United States)
- 22 Signal Processing for SHM
Michael D. Todd, University of California, San Diego (United States)
Wolfgang Grill, Universität Leipzig (Germany)

Introduction

In the year 2001 the SPIE conference (Conf. #4335) on Health Monitoring of Structural and Biological Systems brought engineers, materials scientists, medical doctors, and biologists together to exchange their ideas on this important issue. After having a positive experience at that conference, yearly conferences were organized on the same topic and the next one has been planned for the year 2014. This volume contains papers presented at the 2013 conference. Papers presented in the earlier conferences can be found in Proceedings of SPIE volumes 4335 (2001), 4702 (2002), 5047 (2003), 5394 (2004), 5768 (2005), 6177 (2006), 6532 (2007), 6935 (2008), 7295 (2009), 7650 (2010), 7984 (2011), and 8348 (2012).

The emphasis of this conference is to recognize that sensing by nondestructive evaluation, sensor array design, signal acquisition and transmission, signal processing, energy harvesting etc. are integral parts of health monitoring for both structural and biological systems. I believe that biological and physical science communities are learning from each other by coming to this conference and exchanging ideas. Some of the recent advances in the science and technology of health monitoring techniques that go beyond the traditional nondestructive testing for internal flaw detection are presented in these proceedings. New diagnosis, prognosis and rehabilitation techniques applied to engineering structures made of metal, concrete, and composites, as well as biological systems are presented. The papers published here cover a wide range of technologies. It is hoped that this conference will stimulate further interactions between physical and life science communities resulting in newer development of more innovative techniques for health monitoring applications.

I am thankful to the conference cochair, program committee members, authors, session chairs, and the SPIE staff for putting together this excellent conference.

Tribikram Kundu

