

Contents

1 Development and Characterization of an ITO Nanocomposite Film Sensor for Damage Detection	1
Breno Ebinuma Takiuti, Vicente Lopes Júnior, Michael J. Brennan, Walter Katsumi Sakamoto, José Antônio Malmonge, and Marcelo Ornaghi Orlandi	
2 Fiber Optic Sensor Arrays for Real-Time Virtual Instrumentation and Control of Flexible Structures	9
Hector Gutierrez, Behzad Shariati Javani, Daniel Kirk, Weihua Su, Michael Wolf, and Edwin Griffin	
3 On the Output-Only Vibration-Based Damage Detection of Frame Structures	23
Giacomo Bernagozzi, Luca Landi, and Pier Paolo Diotallevi	
4 On the Influence of Sample Length and Measurement Noise on the Stochastic Subspace Damage Detection Technique	35
Saeid Allahdadian, Michael Döhler, Carlos E. Ventura, and Laurent Mevel	
5 Quantification of Structural Damage with Self-Organizing Maps	47
Osama Abdeljaber, Onur Avci, Ngoan Tien Do, Mustafa Gul, Ozan Celik, and F. Necati Catbas	
6 Accuracy Enhancement of a Device for Automated Underbridge Inspections	59
Hermes Giberti, Marco Tarabini, Federico Cheli, and Marco Garozzo	
7 A Brief Overview of Mechatronics	67
A.L. Wicks	
8 Enhanced Vibration Damping by Means of a Negative Capacitance	75
Marta Berardengo, Riccardo Bonsignori, Alfredo Cigada, and Stefano Manzoni	
9 Vehicle Tracking for Bridge Load Dynamics Using Vision Techniques	83
Ryan Brown and Al Wicks	
10 Model Based System Testing: Bringing Testing and Simulation Close Together	91
Fábio Luis Marques dos Santos, Roland Pastorino, Bart Peeters, Cassio Faria, Wim Desmet, Luiz Carlos Sandoval Góes, and Herman Van Der Auweraer	
11 Time-varying System Identification Using a Hybrid Blind Source Separation Method	99
F. Musafere, A. Sadhu, and K. Liu	
12 An Energy Measure for Mode Localization	105
Michael I. Friswell, Arun Chandrasher, and Sondipon Adhikari	

13	Vibration Control on a Space Flexible Structure with a PZT Stack Actuator Using Strain and MPPF Control	111
	Oscar Alejandro Garcia-Perez, Gerardo Silva-Navarro, and Juan Fernando Peza-Solis	
14	Multi-Reference Time-Frequency Active Control of Vehicle Interior Road Noise	121
	Tao Feng, Guohua Sun, Mingfeng Li, and Teik C. Lim	
15	Wireless Monitoring of the Dynamic Behavior of Railway Catenary Systems	129
	Anders Rønnquist and Petter N��vik	
16	Functional Series TARMA Models for Non-stationary Tool Vibration Signals Representation and Wear Estimation	141
	Behrang Hosseini Aghdam and Ender Cigeroglu	

Structural Health Monitoring, Damage Detection &
Mechatronics, Volume 7

Proceedings of the 34th IMAC, A Conference and
Exposition on Structural Dynamics 2016

Wicks, A.; Niezrecki, C. (Eds.)

2016, VIII, 151 p. 130 illus., 102 illus. in color.,

Hardcover

ISBN: 978-3-319-29955-6