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Note generali	"Represents one of the eight volumes of technical papers presented at the 32nd IMAC, a Conference and Exposition on Structural Dynamics, 2014 organized by the Society for Experimental Mechanics, and held in Orlando, Florida, February 3-6, 2014"--Preface.
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Assessment and Localization of Active Discontinuities Using Energy Distribution Between Intrinsic Modes -- Wave Analyses in Structural Waveguides Using a Boundary Element Approach -- Spectral Element Based Optimization Scheme for Damage Identification -- Nonlinear Dynamic Behaviour of Cantilever Piezoelectric Energy Harvesters: Numerical and Experimental Investigations -- Nonlinear Dynamics of a Hybrid Piezo-electromagnetic Vibrating Energy Harvester -- Numerical Modeling of Steel-framed Floors for Energy Harvesting Applications -- Identification of Tie-rods Tensile Axial Force in Civil Structures -- A

New Measure of Shape Difference -- Non-destructive Examination of Multiphase Material Distribution in Uranium Hexafluoride Cylinders Using Steady-state Laser Doppler Vibrometery -- Damage Detection Using Large-Scale Covariance Matrix -- Load Identification of Offshore Platform for Fatigue Life Estimation -- Monitoring Proximity Tunneling Effects Using Blind Source Separation Technique -- Endowing Structures With a Nociceptive Sense Enabled by a Graphene-oxide Sensing Skin -- Modal Strain Energy Based Damage Detection Using Multi-objective Optimization -- Development of Vibration Damper for Energy Harvesting -- Structural Damage Detection Using Soft Computing Methods -- Multiple Crack Detection in Structures Using Residual Operational Deflection Shape -- Numerical Enhancement of NMT for Predicting Fatigue Failure -- Subspace-based Damage Detection on Steel Frame Structure Under Changing Excitation -- Real-time Structural Damage Identification of Time-Varying Systems -- Wavelet Transformation for Damage Identification in Wind Turbine Blades -- Vision Device Applied to Damage Identification in Civil Engineer Structures -- Damage Detection and Quantification Using Thim Film of ITO Nanocomposites -- The use of Orbitals and Full Spectra to Identify Misalignment -- Damage Detection Based On Wavelet Packet Transform and Entropy -- Identification of Localized Damage in Structures Using Highly Incomplete Modal Information -- Damage Detection Using Derringer's Function Based Weighted Model Updating Method -- Energy Harvesting in a Coupled System Using Nonlinear Impact -- Spatiotemporal Sensing for Pipeline Leak Detection Using Thermal Video -- Vibration-based Continuous Monitoring of Tensile Loads in Cables and Rods: System Development and Application -- Non-model-based Crack Identification Using Measured Mode Shapes.

Sommario/riassunto	This critical collection examines a range of structural health monitoring, from damage detection to energy harvesting, as presented in early findings and case studies from the Proceedings of the 32nd IMAC, A Conference and Exposition on Structural Dynamics, 2014. The collection includes papers in the following general technical research areas: · Structural Health Monitoring · Damage Detection · Energy Harvesting.