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Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Cover; Title Page; Copyright Page; Contents; Preface; Contributors; PART I CIVIL AND ENVIRONMENTAL ENGINEERING; 1 New and Emerging Technologies in Structural Health Monitoring; 1.1 Introduction; 1.2 Background; 1.3 New and Emerging Technologies; 1.3.1 General; 1.3.2 Fiber-Optic Sensors (FOS); 1.3.3 The Global Positioning System (GPS); 1.3.4 Microelectromechanical Systems (MEMS); 1.3.5 Corrosion Monitoring; 1.3.6 B-WIM, WIM; 1.3.7 Nondestructive Testing (NDT); 1.3.8 Interferometric Radar; 1.3.9 Photogrammetry; 1.3.10 Smart Technical Textiles 1.3.11 Specific Issues Around Usage of New Technologies 1.3.12 Chosen Technologies and Motivation; 1.4 Fiber-Optic Technology; 1.4.1 General; 1.4.2 Sensors Based on Sagnac, Michelson, and Mach-Zehnder Interferometers; 1.4.3 Sensor Based on the Fiber Bragg

Gratings; 1.4.4 Sensors Based on Fabry-Perot Interferometry; 1.4.5 Best Performances of Discrete FOS; 1.4.6 Distributed Sensors; 1.5 Acoustic Emission; 1.5.1 Theory of Acoustic Emission; 1.5.2 Sources of Acoustic Emission; 1.5.3 The Development of Acoustic Emission in Industry and Civil Engineering; 1.5.4 Acoustic Emission Systems  
1.5.5 Codes, Standards, and Recommended Practice in Acoustic Emission  
1.6 Radar Technology; 1.6.1 General; 1.6.2 Ground-Penetrating Radar; 1.6.3 Interferometric Radar; 1.7 Global Positioning System; 1.8 Corrosion Monitoring Systems; 1.9 Weigh-in-Motion (WIM) Systems; 1.9.1 Weigh-in-Motion; 1.9.2 Railway Weigh-in-Motion; 1.9.3 Bridge Weigh-in-Motion; 1.10 Components of Structural Health Monitoring System; 1.10.1 Sensory System; 1.10.2 Data Acquisition System; 1.10.3 Data Processing and Control System; 1.10.4 User Interface; 1.10.5 Maintenance Tools  
1.11 Structural Health Monitoring System Design  
1.11.1 Structural Analysis for New Structure; 1.11.2 Structural Analysis for Existing Structure; 1.11.3 Sensor Selection; 1.11.4 Data Acquisition Issues; 1.11.5 Responsibilities and Installation Planning; 1.12 System Procurement and Installation; 1.12.1 System Procurement; 1.12.2 Commissioning; 1.12.3 Installation; 1.12.4 Lifetime Support; 1.12.5 System Efficiency and Redundancy; 1.12.6 Dismantling Environmental Issues; 1.13 Application of Structural Health Monitoring Systems; 1.13.1 High-Rise Building, Singapore-2001  
1.13.2 The New Arsta Railway Bridge, Sweden-2005  
1.13.3 Stonecutters Bridge, Hong Kong-2010; 1.13.4 Severn River Crossing, UK-2010; 1.13.5 A4 Hammersmith Flyover, UK-2010; 1.13.6 Streicker Bridge, United States-2010; 1.13.7 Messina Bridge, Italy-2018; 1.14 Discussion; 1.14.1 Development of New and Emerging Technologies; 1.14.2 Obstacles; 1.14.3 Need for Education and Collaboration; 1.14.4 Future Use and Development; 1.15 Conclusion; Acknowledgments; References; 2 Applications of GIS in Engineering Measurements; 2.1 Introduction; 2.2 Background; 2.2.1 Measurement-Based GIS  
2.3 Basic Principles of GIS

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