1. Record Nr. UNINA9910790868103321 Photonics for safety and security / / editors, Antonello Cutolo, Titolo University of Sannio, Italy, Anna Grazia Mignani, CNR - Institute of Applied Physics 'Nello Carrara', Italy, Antonella Tajani, CNR, Italy New Jersey: .: World Scientific. . [2014] Pubbl/distr/stampa 2014 **ISBN** 981-4412-97-X Descrizione fisica 1 online resource (xii, 422 pages): illustrations (some color) Collana Gale eBooks 621.365 Disciplina Soggetti **Photonics** Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Nota di bibliografia Includes bibliographical references and index. Nota di contenuto Preface; Contents; 1. What is Photonics? B. Culshaw; 1. Introduction; 2. Photons - Waves or Particles?; 3. Manipulating Photons: Structures and Materials; 4. Photonics and Materials; 5. Some other Manifestations of Photonics; 6. Some Final Observations; References; 2. Structural Health Monitoring in Buildings, Bridges and Civil Engineering A. Martone, M. Zarrelli, M. Giordano and J. M. Lopez-Higuera; 1. Challenges for Structural Health Monitoring; 1.1. Implementation of SHM; 2. Optical Sensor for Structural Health Monitoring; 2.1. Strain Measurement using **FBG Sensors** 2.1.1. Temperature Compensation 2.1.2. Multiplexing and Networking of FBG Sensors; 2.2. FBG-based Sensors; 2.2.1. Accelerometers; 2.2.2. Inclinometers; 2.3. Distributed Strain Sensing; 3. Applications of FBG in Structural Sensing; 3.1. Civil Construction; 3.2. Bridges; 3.3. Geodynamic; 4. OFS Market; Acknowledgments; References; 3. Remote Sensing Monitoring D. Riccio; 1. Introduction; 2. Global Monitoring for Environment and Security; 2.1. Land; 2.2. Water; 2.3. Atmosphere; 3. Space Segment; 3.1. Synthetic Aperture Radars; 3.2. Optical Sensors; 3.2. Radiometers: 3.3. Spectrometers 3.4. Altimeters 3.5. Scatterometers; 4. Conclusions; Acknowledgments; References; 4. Photonic Technologies for the Safeguarding of Cultural Assets C. Cucci and V. Tornari; 1. Introduction; 2. Optical Sensors and

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Sommario/riassunto

This volume aims to illustrate the state-of-the-art as well as the newest and latest applications of photonics in safety and security. The contributions from renowned and experienced Italian and international scientists, both from the academic and industrial community, present a multidisciplinary and comprehensive overview of this popular topic. The volume is self-contained and offers a broad survey of the various emerging technologies, as well as their applications in the real world. It spans from applications in cultural heritage, to environment, space, monitoring of coasts, quantum cryptogr