Record Nr. UNINA9911046532803321 Autore Marques Carlos **Titolo** Advanced Optical Sensors for Aerospace Applications / / edited by Carlos Marques, Raja V. L. N. Sridhar, Santosh Kumar Singapore:,: Springer Nature Singapore:,: Imprint: Springer,, 2025 Pubbl/distr/stampa **ISBN** 9789819516261 Edizione [1st ed. 2025.] Descrizione fisica 1 online resource (545 pages) Collana Progress in Optical Science and Photonics, , 2363-510X;; 37 Disciplina 535 Soggetti **Optics** Aerospace engineering **Astronautics** Materials **Detectors** Materials - Analysis Imaging systems **Optics and Photonics** Aerospace Technology and Astronautics Sensors and biosensors **Imaging Techniques** Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia 1. Introduction to Optical Sensors in Aerospace Engineering -- 2. Basic Nota di contenuto Concepts of Light and Optics for Aerospace Sector -- 3. Optical Sensors for Structural Health Monitoring -- 4. FBG Sensor Applications in Aerospace Engineering -- 5. Optical Sensors for Aircraft Structural Health Monitoring. This book presents the intricate world of advanced optical sensors Sommario/riassunto specifically tailored for aerospace applications. Starting with the fundamental principles of optical sensing technology, it navigates through the latest innovations and advancements that have shaped the industry. Readers will discover how optical sensors play a pivotal role in avionics, remote sensing, and structural health monitoring, enhancing both safety and efficiency. The book also addresses the challenges and limitations of currently available technologies while exploring future trends, including the integration of artificial intelligence. In addition to theoretical insights, the book includes case studies that showcase successful implementations, providing practical examples of how optical sensors are transforming aerospace operations. Ultimately, this book serves as a resource for engineers, researchers, and industry professionals looking to understand and advance the application of optical sensor technology in the aerospace sector.