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Nota di contenuto	Chapter 1. From Si towards SiC technology for Harsh Environment Sensing -- Chapter 2. Electro-Thermal-Mechanical modeling of gas sensor hotplates -- Chapter 3. Miniaturized Photo-Acoustic Gas Sensor for CO ₂ -- Chapter 4. Multipath raytracing-based modelling of Time-of-Flight cameras: method and applications to semi-transparent and scattering media -- Chapter 5. Computational intelligence for simulating a LiDAR sensor -- Chapter 6. A Smart Phone based Virtual White Cane Prototype featuring Time-of-Flight 3D Imaging -- Chapter 7. Power consumption minimization of Wireless Sensor Networks in the Internet of Things era -- Chapter 8. Model-based Design of Secured Power Aware Smart Sensors -- Chapter 9. A Software Toolkit for Complex Sensor Systems in Fog Environments -- Chapter 10 Sensor System Optimization under Uncertainty -- Chapter 11. Reliability of IoT sensor systems -- Chapter 12. Sensor testing for Smart Mobility scenarios: From Parking Assistance to Automated Parking -- Chapter 13. Health monitoring for lighting applications -- Chapter 14.

Sommario/riassunto

This book describes for readers various technical outcomes from the EU-project IoSense. The authors discuss sensor integration, including LEDs, dust sensors, LIDAR for automotive driving and 8 more, demonstrating their use in simulations for the design and fabrication of sensor systems. Readers will benefit from the coverage of topics such as sensor technologies for both discrete and integrated innovative sensor devices, suitable for high volume production, electrical, mechanical, security and software resources for integration of sensor system components into IoT systems and IoT-enabling systems, and IoT sensor system reliability. Describes from component to system level simulation, how to use the available simulation techniques for reaching a proper design with good performance; Explains how to use simulation techniques such as Finite Elements, Multi-body, Dynamic, stochastics and many more in the virtual design of sensor systems; Demonstrates the integration of several sensor solutions (thermal, dust, occupancy, distance, awareness and more) into large-scale system solutions in several industrial domains (Lighting, automotive, transport and more); Includes state-of-the-art simulation techniques, both multi-scale and multi-physics, for use in the electronic industry.