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Nota di contenuto	Preface -- Acknowledgments -- Quantum Approach to Sensory Information Processing for Modeling of Disasters -- Digital radiation sensors and nanosensory systems -- Sensors for magnetic fields measurement in high level of penetrating radiation in accelerators and new generation fusion reactors -- Formation and annealing of nano-sized atomic clusters in n-Si crystals irradiated with high-energy protons -- Luminescence Efficiency of Cadmium Selenide/Zinc Sulfide (CdSe/ZnS) Quantum Dot Nanoparticle sensors under X-ray excitation -- Nitride and sulfide chemisorbed layers as the surface passivants for A3B5 semiconductors -- Efficiency of luminescence of (Lu,Gd)2SiO5:Ce

(LGSO:Ce) crystal sensory material in the X-ray imaging range -- Microwave in environmental technologies and synthesis of nanomaterials: The Georgian experience -- Microwave enhanced producing of high-purity metallic manganese and composite manganese based alloys -- From Chernobyl to Fukushima. The Environment is acting as a friend or an enemy? -- Oscillation and optical properties of viruses and other pathogenic microorganisms: A review article -- Subject Index -- Author Index.

Sommario/riassunto

This collection of selected review papers focuses on topics such as digital radiation sensors and nanosensory systems for nanotechnology applications and integrated X-ray/PET/CT detectors; nanophosphors and nanocrystal quantum dots as X-ray radiation sensors; the luminescence efficiency of CdSe/ZnS QD and UV-induced luminescence efficiency distribution; investigations devoted to the quantum and multi-parametrical nature of disasters and the modeling thereof using quantum search and quantum query algorithms; sum-frequency-generation, IR fourier and raman spectroscopy methods; as well as investigations into the vibrational modes of viruses and other pathogenic microorganisms aimed at creating optical biosensory systems. This is followed by a review of radiation resistant semiconductor sensors and magnetic measurement instrumentation for magnetic diagnostics of high-tech fission and fusion set-ups and accelerators; the evaluation of the use of neutron-radiation, ^{10}B -enriched semiconducting materials as thin-film, highly reliable, highly sensitive and fast-acting robust solid-state electronic neutron-detectors; and the irradiation of n-Si crystals with protons, which converts the "metallic" inclusions to "dielectric" ones in isochronous annealing, therefore leading to opto/micro/nanoelectronic devices, including nuclear radiation nanosensors. The book concludes with a comparative study of the nitride and sulfide chemisorbed layers; a chemical model that describes the formation of such layers in hydrazine-sulfide and water sodium sulfide solution; and recent developments in the microwave-enhanced processing and microwave-assisted synthesis of nanoparticles and nanomaterials using $\text{Mn}(\text{OH})_2$.
