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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Radiation Interactions with Matter -- Photon counting X-ray detectors.-, LYSO-GAPD Photon Counting Detectors for DEXA Applications.-Duo-Spectral Imaging with Multi-Layered Energy-Integrating Detectors -- A novel algorithm to create quantitative X-ray images based on precise analysis of polychromatic X-ray attenuation -- Characterization of noise and noise correlation in photon-counting CT for multi-material decomposition-based spectral imaging .-,Photon-counting computed tomography (PCCT) for radiation therapy.-,New approaches for metal artifact reduction in computed tomography -- Recent advances and clinical applications of low-dose dental cone-beam computed tomography -- High efficient Compton scattering computed tomography based on a Thomson scattering X-ray source -- Machine Learning for Contaminant Detection using X-ray Photon Counting -- Gamma Ray and Cosmic Ray Muon Modalities for Cargo Inspection.
Sommario/riassunto	This book provides readers an overview of emerging trends in the radiation detection field. Detailed in many of the chapters are specific aspects of radiation detectors, including comprehensive reviews of the historical development, and current state of each topic. The authors

particularly cover emerging detection materials and detectors. High-Z materials like CdTe, CZT and GaAs offer the best implementation possibility of direct conversion X-ray detectors and are covered in this book. The authors discuss material challenges, detector operation physics and technology, and readout integrated circuits required to detect signals processes by high-Z sensors. Authors also contrast these emerging technologies with more established ones based on scintillator materials. Provides an overview of some of the most recent advances in the field of X-ray and Gamma-ray detection technologies; Includes coverage of the conversion of the X-ray signal into analogue/digital value; Covers a range of topics, including X-ray and Gamma-ray detector technologies and electronics for X-ray detection.