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Nota di contenuto	Introduction historical perspective and present development -- Synthesis techniques and measurements for various physical properties of multiferroic and magnetoelectric materials -- Sustainable Multiferroic and Magnetoelectric materials for energy harvesting applications -- Photovoltaic performance of sustainable multiferroic and magnetoelectric materials in green energy technology -- Magnetoelectric Multiferroics for Spintronic Applications -- Latest Updates on Magnetoelectric Coupling Based Devices and Applications in Surface Acoustic Wave Device Technology and Bio-medical Field -- Conclusion and future outlook on sustainable multiferroic and magnetoelectric materials based technologies.
Sommario/riassunto	This book comprehensively introduces the multiferroic and magnetoelectric materials, details the structural aspect and majorly

focuses on the applicability part of the newly emerging non-toxic magnetoelectric and multiferroic materials, green synthesis techniques and energy harvesting applications. It covers in detail applications pertaining to energy harvesting, spintronic, photovoltaic and photo-catalysis, sensors, gyrators, gradiometer, transducers and memory storage devices. Eco-friendly lead free multiferroic-based smart materials are being increasingly used as sensors and actuators in nano- or micro-electromechanical systems (N/MEMS) devices. Magnetoelectric coupling-based N/MEMS devices are found to exhibit high-quality factor and can be integrated with radio frequency integrated circuits. The non-toxic magnetoelectric antenna has biomedical applications as well, especially in neurology. Further, the book classifies and describes the magnetoelectric and multiferroic materials-based applications into three types on the basis of direct magnetoelectric coupling, converse magnetoelectric coupling and combination of both direct and converse magnetoelectric coupling. Overall, the book concludes by summarizing the much-needed detailed analysis of green, non-toxic and viable commercial technology on magnetoelectric and multiferroic materials. Emerging concepts of quantum electromagnets, quantum criticality and cosmic string lab stimulation have also been briefly summarized.