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Nota di contenuto	Coupled electricity and magnetism in solids : multiferroics and beyond / Daniel I. Khomskii -- Single phase type-I multiferroics : resolving the seemingly contradictive requirements for ferroelectricity and magnetism / Jan-Chi Yang, Yen-Lin Huang, and Ying-Hao Chu -- Single phase type-I multiferroics : charge order driven multiferroicity / Manuel Angst -- Single phase type-II multiferroics : frustrated magnetism triggered ferroelectricity / Shuai Dong and Jun-Ming Liu -- Multiferroics for spintronics / Xiaoli Lu, Heng Li, Xin Li, Jiwen Zhang, Jincheng Zhang, Yue Hao, and Marin Alexe -- Bulk magnetoelectric composites : direct and converse magnetoelectric effects / Jia-Mian Hu and Ce-Wen Nan -- Multiferroic nanocomposite thin films / Aiping Chen and Quanxi Jia -- Applications of multiferroic magnetoelectric composites / Yuan Zhou, Jong-Woo Kim, Shuxiang Dong, Shashank Priya, Junling Wang, and Jungho Ryu -- Landau theory of multiferroics / Chuanwei Huang and Lang Chen -- First-principles calculations for multiferroic BiFeO / Jian-Xin Zhu -- Interface coupling in multiferroic heterojunctions / Jason T. Haraldsen -- Topological structures in multiferroics : domain walls, vortices and skyrmions / Jan Seidel -- Topological vortex defects in an improper ferroelectric / Seung Chul Chae and San-Wook Cheong -- Multiferroics and beyond / Lu You, Yang Zhou, and Junling Wang.

Sommario/riassunto	"This book offers a dedicated overview of multiferroic materials, which are defined as single phase materials possessing at least two ferroic or antiferroic simultaneously. It summarizes the major advances in the last decade along with the fundamentals underlying various multiferroic systems. It begins with an introduction to foundational studies followed by chapters devoted to phenomena unique to the main classes: type-I, type-II, and composite multiferroic materials. Next, the chapters address theoretical approaches: phenomenological, first principles calculations, and symmetry analysis. Finally, the book turns to practical applications and emerging studies"--