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Nota di contenuto	ProProgress in ferrites materials: The past, present, future and their applications -- Modern applications of ferrites: An important class of ferrimagnetic system -- Granular Spinel nanoferrites: understanding finite size, surface effects, dipolar interactions through magnetometry experiment -- Nanostructured ferrites based materials probed by synchrotron radiations based X-ray absorption method -- Low loss soft ferrites nanoparticles for applications up to S-band -- Wet chemical synthesis and processing of nanoferrites in terms of controlling their shape, size and physio-chemical properties -- Exchange bias in soft nanoferrites embedded in non-magnetic/antiferromagnetic hosts -- Magnetic soft/hard and hard/soft spinel core-shell nanoferrites with diverse application -- Design, synthesis, and formation mechanism of magnetic nanoflowers for hyperthermia applications -- Progress in ferrite based nanoparticle for magnetic and photothermal therapy for cancer treatment -- Iron oxide based superparamagnetic nanoparticles for the T2-weighted bioimaging -- Nanocrystalline based spinel ferrites for therapeutics: synthesis, design, properties, and importance in in-vivo applications -- Rare earth substituted soft nanoferrites: synthesis, characterizations and their importance in magnetic

resonance imaging for dual T1 and T2-weighted imaging.-Toxicity assessment of soft nanoferrites for the safe utilization for in-vivo applications -- Magnetic ferrites based hybrids structures for the water purifications: removal of heavy metals.

Sommario/riassunto

This book highlights the complexity of spinel nanoferrites, their synthesis, physio-chemical properties and prospective applications in the area of advanced electronics, microwave devices, biotechnology as well as biomedical sciences. It presents an overview of spinel nanoferrites: synthesis, properties and applications for a wide audience: from beginners and graduate-level students up to advanced specialists in both academic and industrial sectors. There are 15 chapters organized into four main sections. The first section of the book introduces the readers to spinel ferrites and their applications in advanced electronics industry including microwave devices, whereas the second section mainly focus on the synthesis strategy and their physio-chemical properties. The last sections of the book highlight the importance of this class of nanomaterials in the field of biotechnology and biomedical sector with a special chapter on water purification.