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Sommario/riassunto	In recent years, micro- and nanosystems with magnetic properties have been extensively investigated in many fields, ranging from physics to medicine. The research in these areas has lately shown that if the magnetic compounds are opportunely functionalized and modified with moieties and specific functional groups, a plethora of challenging multidisciplinary applications is available, including the development of magnetically controlled particles, stimuli-responsive materials, magnetically guided chemical/drug-delivery systems, sensors, spintronics, separation and purification of contaminated groundwater and soils, ferrofluids and magnetorheological fluids, contrast agents for MRI, and internal sources of heat for the thermoablation of cancer. Magnetic compounds have been found to be highly selective and effective in all these application fields, from the molecular level to the microscale. This book aims at underlining the latest advances in the field of magnetic compounds, nanosystems, and materials, covering a large variety of topics related to novel synthesis and functionalization methods and the properties, applications, and use of magnetic systems in chemistry, materials science, diagnostics, and medical therapy.