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Sommario/riassunto	Mesoporous materials are capturing great interest thanks to their exceptional surface area, uniform and tunable pore size, ease surface functionalization, thus enabling broad series of intervention in the field of nanomedicine. Since many years, these aspects foster a deep investigation on mesoporous nanoparticles, to design and fabricate biocompatible, smart and stimuli-responsive nanotools for controlled drug- or gene-delivery, theranostics applications, in particular for cancer therapy, and tissue engineering. This Book is thus dedicated to the most recent advances in the field, collecting research papers and reviews. It spans from the synthesis and characterization of the mesoporous material, especially those made of silica, silicon and bioactive glasses, to their functionalization with smart gate-keepers, reporter molecules or targeting ligands, up to their in-vitro applications in the nanomedicine field.