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Titolo	Ferrofluids : Magnetically Controllable Fluids and Their Applications / / edited by Stefan Odenbach
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Descrizione fisica	1 online resource (XII, 256 p.)
Collana	Lecture Notes in Physics, , 0075-8450 ; ; 594
Disciplina	530.4/2
Soggetti	Fluids Fluid mechanics Amorphous substances Complex fluids Chemical engineering Fluid- and Aerodynamics Engineering Fluid Dynamics Soft and Granular Matter, Complex Fluids and Microfluidics Industrial Chemistry/Chemical Engineering
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Synthesis and Characterization -- The Preparation of Magnetic Fluids -- Magnetic Spectroscopy as an Aide in Understanding Magnetic Fluids -- Magnetic and Crystalline Nanostructures in Ferrofluids as Probed by Small Angle Neutron Scattering -- Basic Theory -- Basic Equations for Magnetic Fluids with Internal Rotations -- Ferrohydrodynamics: Retrospective and Issues -- Ferrofluid Dynamics -- Heat and Mass Transfer Phenomena -- Rheological Properties -- Statistical Physics of Non-dilute Ferrofluids -- Magnetic Fluid as an Assembly of Flexible Chains -- Magnetoviscous Effects in Ferrofluids -- Magnetorheology: Fluids, Structures and Rheology -- Applications -- Targeted Tumor Therapy with “Magnetic Drug Targeting”: Therapeutic Efficacy of Ferrofluid Bound Mitoxantrone.
Sommario/riassunto	Magnetic control of the properties and the flow of liquids is a challenging field for basic research and for applications. This book is

meant to be both an introduction to and a state-of-the-art review on this topic. Written in the form of a set of lectures and tutorial reviews, the book addresses the synthesis and characterization of magnetic fluids, their hydrodynamical description and their rheological properties. The book closes with an account of magnetic drug targeting.