

1. Record Nr.	UNISA996466678603316
Titolo	Colloidal Magnetic Fluids [[electronic resource]] : Basics, Development and Application of Ferrofluids // edited by Stefan Odenbach
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2009
ISBN	3-540-85387-1
Edizione	[1st ed. 2009.]
Descrizione fisica	1 online resource (X, 430 p. 253 illus., 18 illus. in color.)
Collana	Lecture Notes in Physics, , 0075-8450 ; ; 763
Classificazione	UD 8220 33.75 35.20
Disciplina	538.4322gerDNB
Soggetti	Fluids Fluid mechanics Mechanical engineering Magnetism Magnetic materials Amorphous substances Complex fluids Chemical engineering Fluid- and Aerodynamics Engineering Fluid Dynamics Mechanical Engineering Magnetism, Magnetic Materials Soft and Granular Matter, Complex Fluids and Microfluidics Industrial Chemistry/Chemical Engineering Aufsatzsammlung
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.
Nota di contenuto	Synthesis and Characterization -- Thermodynamics, Electrodynamics, and Ferrofluid Dynamics -- Surface Instabilities of Ferrofluids -- Ferrofluid Structure and Rheology -- Biomedical Applications of Magnetic Nanoparticles -- Technical Applications.

Research into the fascinating properties and applications of magnetic fluids - also called ferrofluids - is rapidly growing, making it necessary to provide at regular intervals a coherent and tutorial account of the combined theoretical and experimental advances in the field. This volume is an outgrowth of seven years of research by some 30 interdisciplinary groups of scientists: theoretical physicists describing the behaviour of such complex fluids, chemical engineers synthesizing nanosize magnetic particles, experimentalists measuring the fluid properties and mechanical engineers exploring the many applications such fluids offer, in turn providing application-guided feedback to the modellers and requests for the preparation of new fluid types to chemists, in particular those providing optimum response to given magnetic field configurations. Moreover, recent developments towards biomedical applications widens this spectrum to include medicine and pharmacology. Consisting of six large chapters on synthesis and characterization, thermo- and electrodynamics, surface instabilities, structure and rheology, biomedical applications as well as engineering and technical applications, this work is both a unique source of reference for anyone working in the field and a suitable introduction for newcomers to the field.
