

1. Record Nr.	UNINA9911019412803321
Titolo	Microgel suspensions : fundamentals and applications / / edited by Alberto Fernandez-Nieves ... [et al.]
Pubbl/distr/stampa	Weinheim, : Wiley-VCH, c2011
ISBN	9786612944550 9781282944558 128294455X 9783527633012 3527633014 9783527632992 3527632999 9783527633005 3527633006
Descrizione fisica	1 online resource (485 p.)
Altri autori (Persone)	Fernandez-NievesAlberto
Disciplina	541.34513
Soggetti	Colloids Suspensions (Chemistry)
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographic references and index.
Nota di contenuto	Microgel Suspensions: Fundamentals and Applications; Contents; Preface; List of Contributors; Part One: Synthesis; 1 Microgels and Their Synthesis: An Introduction; 2 Polymerization Kinetics of Microgel Particles; 3 New Functional Microgels from Microfluidics; Part Two: Physical Properties of Microgel Particles; 4 Swelling Thermodynamics of Microgel Particles; 5 Determination of Microgel Structure by Small-Angle Neutron Scattering; 6 Interactions and Colloid Stability of Microgel Particles; Part Three: Phase Behavior and Dynamics of Microgel Suspensions 7 Structure and Thermodynamics of Ionic Microgels 8 Elasticity of Soft Particles and Colloids Near the Jamming Threshold 9 Crystallization of Microgel Spheres 10 Melting and Geometric Frustration in Temperature-Sensitive Colloids; Part Four: Mechanical Properties; 11 Yielding, Flow, and Slip in Microgel Suspensions: From Microstructure

to Macroscopic Rheology; 12 Mechanics of Single Microgel Particles; 13 Rheology of Industrially Relevant Microgels; Part Five: Applications 14 Exploiting the Optical Properties of Microgels and Hydrogels as Microlenses and Photonic Crystals in Sensing Applications 15 Microgels in Drug Delivery; 16 Microgels for Oil Recovery; 17 Applications of Biopolymer Microgels; Index

Sommario/riassunto

Providing a vital link between chemistry and physics on the nanoscale, this book offers concise coverage of the entire topic in five major sections, beginning with synthesis of microgel particles and continuing with their physical properties. The phase behavior and dynamics of resulting microgel suspensions feature in the third section, followed by their mechanical properties. It concludes with detailed accounts of numerous industrial, commercial and medical applications. Edited by David Weitz, Professor at Harvard and one of the world's pre-eminent experts in the field.