Record Nr. UNINA9910876722503321 Microgel suspensions: fundamentals and applications / / edited by **Titolo** Alberto Fernandez-Nieves ... [et al.] Pubbl/distr/stampa Weinheim,: Wiley-VCH, c2011 **ISBN** 1-282-94455-X 9786612944550 3-527-63301-4 3-527-63299-9 3-527-63300-6 Descrizione fisica 1 online resource (485 p.) Altri autori (Persone) Fernandez-NievesAlberto 541.34513 Disciplina Colloids Soggetti Suspensions (Chemistry) Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Description based upon print version of record. Note generali Includes bibliographic references and index. Nota di bibliografia 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 Microgels8 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

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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.