

1. Record Nr.	UNINA9910349503003321
Autore	González García Álvaro
Titolo	Polymer-Mediated Phase Stability of Colloids // by Álvaro González García
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2019
ISBN	3-030-33683-2
Edizione	[1st ed. 2019.]
Descrizione fisica	1 online resource (162 pages)
Collana	Springer Theses, Recognizing Outstanding Ph.D. Research, , 2190-5053
Disciplina	530.474 541.345
Soggetti	Phase transformations (Statistical physics) Polymers Amorphous substances Complex fluids Chemistry, Physical and theoretical Phase Transitions and Multiphase Systems Polymer Sciences Soft and Granular Matter, Complex Fluids and Microfluidics Physical Chemistry
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction -- Part 1: Spherical Colloids -- Tuning the Phase Diagram of Colloid–polymer Mixtures -- Depletion-driven Solid–solid Coexistence in Colloid–polymer Mixtures -- Unipletion in Colloid–polymer Mixtures -- Part 2: Anisotropic Hard Colloids -- Superballs Mixed with Non-Adsorbing Polymers -- Discotic Dispersions Mediated by Depletion -- Part 3: Spherical Association Colloids -- On the Colloidal Stability of Association Colloids -- Polymer-mediated Stability of Micellar Suspensions.
Sommario/riassunto	Colloid–polymer mixtures are subject of intensive research due to their wide range of applicability, for instance in coatings and food-stuffs. This thesis constitutes a fundamental investigation towards a better control over the stability of such suspensions. Through the chapters,

different key parameters governing the stability of colloid–polymer mixtures are explored. How the colloid (pigment) shape and the effective polymer–colloid affinity modulate the stability of the suspension are examples of these key parameters. Despite the mostly theoretical results presented, the thesis is written in a format accessible to a broad scientific audience. Some of the equations of state presented might of direct use to experimentalists. Furthermore, new theoretical insights about colloid–polymer mixtures are put forward. These include four-phase coexistences in effective two-component, quantification of depletant partitioning at high colloidal concentrations, multiple re-entrant phase behaviour of the colloidal fluid–solid coexistence, and a condition where polymers are neither depleted nor adsorbed from/to the colloidal surface.
