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Nota di contenuto	1. Introduction -- 2. Depletion Interaction -- 3. Phase transitions of hard sphere–depletant mixtures — the basics -- 4. Phase separation and long-lived metastable states in colloid–polymer mixtures -- 5. The interface in demixed colloid–polymer dispersions -- 6. Phase behaviour of colloidal binary hard sphere mixtures -- 7. Phase behaviour of colloidal hard spheres mixed with hard rod-like colloids -- 8. Phase behaviour of colloidal rods with depletants -- 9. Phase behaviour of colloidal platelet–depletant mixtures -- 10. Phase behaviour of colloidal cubes mixed with depletants.
Sommario/riassunto	This open access book provides a detailed exploration of the phase behaviour of, and interfacial properties in, complex colloidal mixtures (e.g., clay, milk, blood). Insights into colloids have been at the heart of many innovations in different industries. The big question underlying these innovations is how can colloidal systems be formulated and

designed towards the desired properties? To do this, the forces between the colloidal particles need to be controlled. Adding depletants (non-adsorbing polymers or small colloids) is key to controlling the attractive interactions. *Colloids and the Depletion Interaction* provides the qualitative insights and quantitative tools to understand and predict such forces in colloidal dispersions. It offers a concise introduction to the history and fundamentals of the depletion interaction in, and phase behaviour of, colloidal dispersions. Why does adding polymers lead to attractive forces between colloidal particles? What determines the phase stability of multi-component colloidal systems? These include colloid—polymer mixtures, binary colloidal mixtures, and anisotropic particles such as clay platelets, cubes and rod-like viruses. Conceptual explanations are accompanied by experimental and computer simulation results throughout. Illustrations of depletion effects in colloid science, biology and technology demonstrate its wider significance. The concluding outlook provides the scope of challenges and possibilities in this exciting field of science. This second updated and enlarged edition contains 12 Chapters. It is an ideal book for advanced undergraduates and graduate students in physical chemistry, chemical engineering and soft matter physics. Besides providing a fundamental understanding of depletion interactions in colloidal mixtures, it gives background information on colloidal stability and phase behaviour in general. For experienced scientists and engineers working on mixtures of colloids and non-adsorbing (bio)polymers or colloidal particles, this book serves as a reference for understanding depletion interactions in systems of their specific interest.

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