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Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Introduction -- Materials and characterization techniques -- Phase diagram of Laponite dispersions -- Anisotropic ordering in nanoclay dispersions induced by water-air Interface -- Phase diagram of aging Montmorillonite dispersions -- Sol state and gelation kinetics in mixed nanoclay dispersions -- Aging dynamics in mixed nanoclay dispersions -- Thermal ordering in mixed nanoclay dispersions -- Aggregation and scaling behavior of nanoclays in alcohol solutions -- Summary.
Sommario/riassunto	This thesis explores the dispersion stability, microstructure and phase transitions involved in the nanoclay system. It describes the recently discovered formation of colloidal gels via two routes: the first is

through phase separation and second is by equilibrium gelation and includes the first reported experimental observation of a system with high aspect ratio nanodiscs. The phase behavior of anisotropic nanodiscs of different aspect ratio in their individual and mixed states in aqueous and hydrophobic media is investigated. Distinct phase separation, equilibrium fluid and equilibrium gel phases are observed in nanoclay dispersions with extensive aging. The work then explores solution behavior, gelation kinetics, aging dynamics and temperature-induced ordering in the individual and mixed states of these discotic colloids. Anisotropic ordering dynamics induced by a water-air interface, waiting time and temperature in these dispersions were studied in great detail along with aggregation behavior of nanoplatelets in hydrophobic environment of alcohol solutions.
