1. Record Nr. UNINA9910144605503321

Autore	Kröger Martin
Titolo	Models for Polymeric and Anisotropic Liquids / / by Martin Kröger
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2005
ISBN	9783540315193 3540315195
Edizione	[1st ed. 2005.]
Descrizione fisica	1 online resource (XIV, 234 p. 77 illus.)
Collana	Lecture Notes in Physics, , 1616-6361 ; ; 675
Disciplina	547/.70454
Soggetti	Soft condensed matter Polymers Physics Mathematical physics Mechanics, Applied Solids Soft and Granular Matter Classical and Continuum Physics Theoretical, Mathematical and Computational Physics Solid Mechanics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di contenuto	Simpler Models for Polymeric Liquids Far from Equilibrium -- Dumbbell Model for Dilute and Semi-Dilute Solutions -- Chain Model for Dilute Solutions -- Chain Model for Concentrated Solutions and Melts -- Chain Models for Transient and Semiflexible Structures -- Primitive Path Models -- Elongated Particle Models.
Sommario/riassunto	Models should be as simple as possible, but no simpler. For the physics of polymeric liquids, whose relevant lengths and time scales are out of reach for first principles calculations, this means that we have to choose a minimum set of sufficiently detailed descriptors such as architecture (linear, ring, branched), connectivity, semiflexibility, stretchability, excluded volume, and hydrodynamic interaction. These 'universal' fluids allow the prediction of material properties under

external flow- or electrodynamic fields, the results being expressed in terms of reference units, specific for any particular chosen material. This book provides an introduction to the kinetic theory and computer simulation methods needed to handle these models and to interpret the results. Also included are a number of sample applications and computer codes.