1. Record Nr. UNINA9910956888003321

Autore	Phillies George D. J.
Titolo	Phenomenology of polymer solution dynamics / / George D.J. Phillies
Pubbl/distr/stampa	Cambridge : , : Cambridge University Press, , 2011
ISBN	1-107-22592-2 1-280-48499-3 1-139-22229-5 9786613579973 0-511-84318-6 1-139-21748-8 1-139-22400-X 1-139-21440-3 1-139-22057-8
Edizione	[1st ed.]
Descrizione fisica	1 online resource (xvi, 509 pages) : digital, PDF file(s)
Classificazione	SCI055000
Disciplina	547/.7
Soggetti	Polymer solutions
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Title from publisher's bibliographic system (viewed on 05 Oct 2015).
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	1. Introduction -- 2. Sedimentation -- 3. Electrophoresis -- 4. Quasielastic light scattering and diffusion -- 5. Solvent and small-molecule motion -- 6. Segmental diffusion -- 7. Dielectric relaxation and chain dimensions -- 8. Self- and tracer diffusion -- 9. Probe diffusion -- 10. Dynamics of colloids -- 11. The dynamic structure factor -- 12. Viscosity -- 13. Viscoelasticity -- 14. Nonlinear viscoelastic phenomena -- 15. Qualitative summary -- 16. Phenomenology -- 17. Afterword: hydrodynamic scaling model for polymer dynamics.
Sommario/riassunto	Presenting a completely new approach to examining how polymers move in non-dilute solution, this book focuses on experimental facts, not theoretical speculations, and concentrates on polymer solutions, not dilute solutions or polymer melts. From centrifugation and solvent dynamics to viscosity and diffusion, experimental measurements and their quantitative representations are the core of the discussion. The

book reveals several experiments never before recognized as revealing polymer solution properties. A novel approach to relaxation phenomena accurately describes viscoelasticity and dielectric relaxation and how they depend on polymer size and concentration. Ideal for graduate students and researchers interested in the properties of polymer solutions, the book covers real measurements on practical systems, including the very latest results. Every significant experimental method is presented in considerable detail, giving unprecedented coverage of polymers in solution.