Record Nr. UNINA9910809153803321 Autore Grosberg A. IU Titolo Giant molecules: here, there, and everywhere / / Alexander Y. Grosberg, Alexei R. Khokhlov; foreword by Pierre-Gilles de Gennes Hackensack, N.J., : World Scientific, c2011 Pubbl/distr/stampa **ISBN** 1-283-14363-1 9786613143631 981-283-923-2 Edizione [2nd ed.] Descrizione fisica 1 online resource (300 p.) KhokhlovA. R Altri autori (Persone) GennesPierre-Gilles de Disciplina 547.7 Soggetti Polymers Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Previous ed.: San Diego, Calif.; London: Academic Press, 1997. Nota di bibliografia Includes bibliographical references (p. 313-316) and index. Nota di contenuto Foreword by P.G. de Gennes; From the Reviews of the First Edition; Preface; Acknowledgments; Contents; 1. Introduction: Physics in the World of Giant Molecules; 2. What Does a Polymer Molecule Look Like?; 3. How are Polymers Made; 4. What Kinds of Polymer Substances are There?; 5. Polymers in Nature; 6. The Mathematics of a Simple Polymer Coil; 7. The Physics of High Elasticity; 8. The Problem of Excluded Volume; 9. Coils and Globules; 10. Globular Proteins and Folding; 11. To Knot or Not to Knot; 12. Dynamics of Polymer Fluids; 13. The Mathematics of Complicated Polymer Structures: Fractals 14. Polymers, Evolution, and the Origin of LifeList of Suggested Further Reading; Index Sommario/riassunto This book describes the basic facts, concepts and ideas of polymer physics in simple, yet scientifically accurate, terms. In both scientific and historic contexts, the book shows how the subject of polymers is fascinating, as it is behind most of the wonders of living cell machinery as well as most of the new developments in materials. No mathematics is used in the book beyond modest high school algebra, yet very sophisticated concepts are introduced and explained, ranging from scaling and reptations to protein folding and evolution. This new

edition includes an extended section on polymer pre