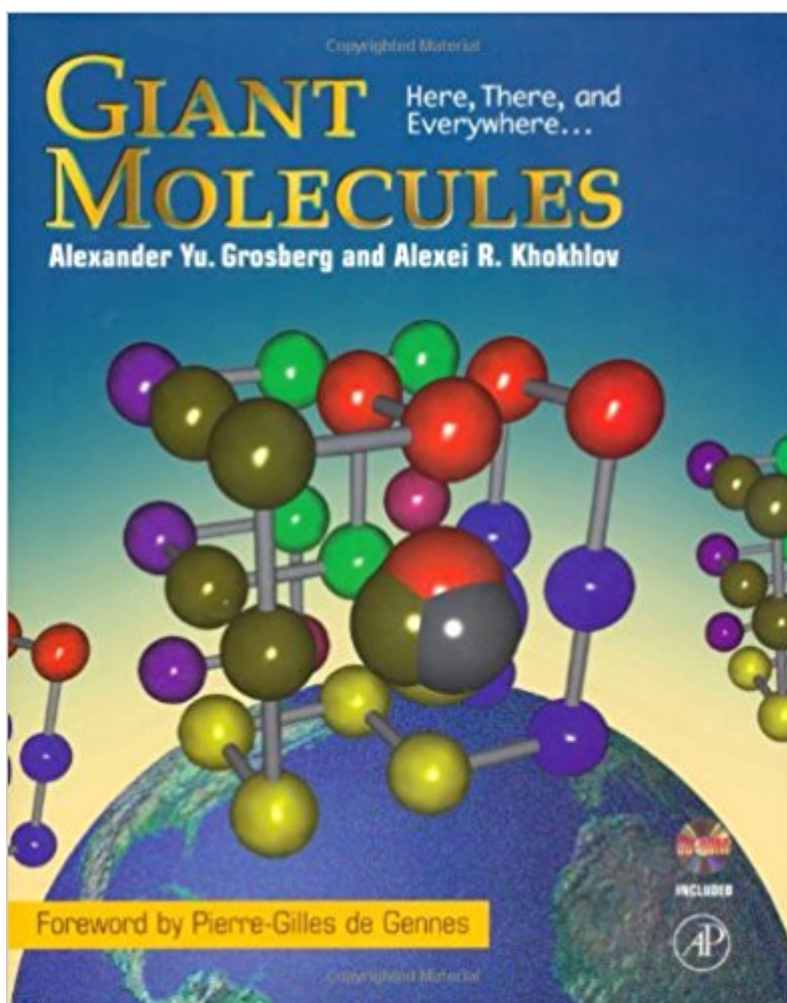


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# Giant Molecules: Here, There, And Everywhere



## Synopsis

Lively, informative, and easy-to-understand, this book is a fascinating read for scientists across many disciplines and the educated/interested layperson. Beautifully presented with eight pages of color illustrations, *Giant Molecules: Here, There, and Everywhere* addresses the nature and role of giant molecules, which are the "source" for polymer chains. Grosberg and Khokhlov explain what giant molecules are, how they are formed, where they are applied, and why they are important in everyday life and in science. The simple, non-technical style is complemented by full-color illustrations. A CD-ROM enclosed with the book provides simulation of typical behavior of polymers, which is an extremely useful tool for teaching purposes. This feature will be of special interest to the expert in polymers across many disciplines, including molecular biology, materials science, physics, and chemistry. The CD-ROM also allows the user to create a broad variety of movies simulating an almost arbitrary polymer system, customized to the user's specific needs. *Giant Molecules* presents the subject matter much more clearly than the standard scientific text. It provides a unique opportunity to grasp the most advanced methods of polymer physics with the guidance of world leaders in the field. The book features a foreword written by Pierre-Gilles de Gennes, a Nobel Prize Laureate, and each chapter in this fascinating volume is preceded by a quote from such notable sources as Goethe, St. Exupéry, and Mark Twain. Written in a simple, non-scientific style, *Giant Molecules* should be understandable to interested readers at any level, and the color illustrations and CD-ROM add to the appeal of this lively book.

**Key Features\***

- Includes a foreword written by Pierre-Gilles de Gennes, Nobel Laureate
- Written at a level both the scientist and non-scientist can appreciate
- Uses a clear, comprehensive manner to describe giant molecules
- Features a CD-ROM with movies showing the simulation of polymer behavior
- Presents a simple approach to the most complex phenomena, using very limited mathematics
- Considers aspects of polymers as materials

## Book Information

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## Customer Reviews

"I would recommend this book to anyone with an interest in polymer science, whether established experts or complete newcomers - it really is an excellent starting point for the subject.--Simon Briggs, The University of Newcastle, MOLECULES 1998"

"The authors take us through the fundamentals of macromolecules in an intuitive and entertaining way."--Edwin L. Thomas in NATURE

"Giant molecules is one of the hottest topics in science today. This book, written by two brilliant physicists, will guide readers through this new frontier of polymer science while they master the modern concepts behind it. Giant molecules play an increasingly important role in medicine, chemistry, agriculture, and in the pharmaceutical and electronic industries, and the authors make the topic equally accessible to any curious reader. The authors are skilled story-tellers, which makes this scientifically relevant book entertaining as well as informative. Giant Molecules will be of use to all levels of science enthusiasts who are curious about the newest developments in polymer science. This book is not to be missed!"--TOYOICHI TANAKA, Massachusetts Institute of Technology, Cambridge

"Giant Molecules is a beautiful...book on polymer science which is written by two of the leaders in the field who are also tremendously skilled at putting the science in both historical and scientific contexts. The book is actually a marvelous introduction to polymer physics (for people who have had some training in physical science) which is scientifically accurate but can also be read as a wonderfully articulate and amusing history of polymer science. This book must be on the shelf of all polymer scientists and will go a long way in explaining this sub-discipline to the broad public."--P. PINCUS, University of California, Santa Barbara

"The two Russian authors have a talent for writing...in a simple style--avoiding most of the heavy formalism that is beloved in countries of strong mathematical bias such as Russia or France. The final product is accessible for university students and to research engineers. I am convinced that it will play a very useful role in this context."--P.G. de Gennes

Alexander Yu. Grosberg and Alexei R. Khokhlov, who have made significant contributions to polymer physics, have now added to this distinguished literature in the semipopular book, Giant Molecules: Here, There, and Everywhere...The overall level is suitable for an advanced undergraduate in physics, chemistry or chemical engineering...this book will subvert the view of statistical mechanics as a dry, overly

mathematical subject, a view of reinforced by standard textbooks...Practitioners will also find the book stimulating...the book capably fills a void between technical works and the few popularized materials science books. Many future polymer scientists will meet the intellectual love of their lives in its pages.--Thomas Halsey, Exxon Research and Engineering, PHYSICS TODAYIt is nicely written in a lively style, and can easily be read by the scientifically interested senior high-school or undergraduate student. Indeed, everybody who is interested in polymers-of of the most important and fast expanding fields in the natural sciences-will find it worthwhile having this book on their shelves...the authors have succeeded in writing an accurate and precise book...This makes it a valuable book for both the scientifically interested layreader and non-expert student, as well as, for the experienced scientist, who is so often caught up in the complicated and specialized realm of his or her own research...a must for the shelf of every researcher in the field. They will find it invaluable in helping them to explain complicated situations in simple terms-something that is increasingly important in scientific life.--Kurt Kremer, director of Max-Planck-Institut für Polymerforschung, PHYSICS WORLDThis is a very "pretty" book, attractively laid out with wide margins and lots of white space..."science for the layman"...--R. Darby, Texas A&M University, CHOICE...a book for the non-expert...nicely written in a lively style, and can easily be read by the scientifically interested senior high-school or undergraduate student...Indeed everyone who is interested in polymers...will find it worthwhile having this book and CD on their shelves.--Kurt Kremer, PHYSICSWEB

Text: English (translation) Original Language: Russian

This book is extremely interesting and well written, but ... it's full of bugs in the formulas. Too many formulas are missing key symbols like as +, -, \*, >, and many more, and are hard to read or understand. Just as example, use Look Inside to browse equation (8.9) at page 159, or equation (8.13) at page 160; you will immediately notice that something important is missing. These misprints are really annoying; such a nice book would deserve more care in editing.

I am a physics professor working on semiconductor materials. Polymer is not my area, but they always attracts me a lot. I can't believe this great book hasn't been reviewed yet. Yes, it is written by two Russian scientists. But who said Russians can only write rigorous math books? This book is not a monograph but for everyone interested in polymer physics, material or popular science. It explains a lot of phenomena in a clear, concise and humorous language. There is a little math, not hard at all. Freshmen level calculus would be sufficient to understand the book. In fact, all through the book, the

authors were showing the interactions between different factors. These factors are the reason that polymers have so many tantalizing and sometimes contradicting properties. To explain those, math is necessary. The movies included in the accompanied CD are great, think about how much work is put on making them!

There's an excellent first edition (with one more author) that's basically as good, but is available much cheaper. BTW, it also has the same CDROM.

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