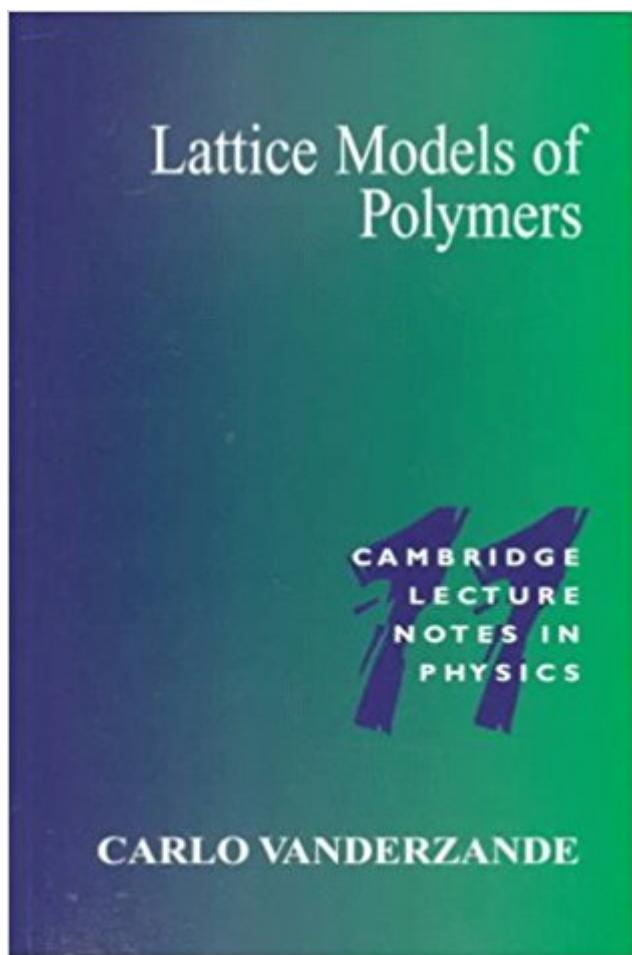


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Lattice Models Of Polymers (Cambridge Lecture Notes In Physics)



Synopsis

This is a comprehensive introduction to lattice models of polymers, an important topic both in the theory of critical phenomena and the modeling of polymers. The first two chapters introduce the basic theory of random, directed and self-avoiding walks. The book then goes on to develop and expand this theory to explore the self-avoiding walk in both two and three dimensions. Following chapters describe polymers near a surface, dense polymers, self interacting polymers and branched polymers. The book closes with discussions of some geometrical and topological properties of polymers, and of self-avoiding surfaces on a lattice. The volume combines results from rigorous analytical and numerical work to give a coherent picture of the properties of lattice models of polymers. This book will be valuable for graduate students and researchers working in statistical mechanics, theoretical physics and polymer physics. It will also be of interest to those working in applied mathematics and theoretical chemistry.

Book Information

Series: Cambridge Lecture Notes in Physics (Book 11)

Paperback: 240 pages

Publisher: Cambridge University Press; 1 edition (May 28, 1998)

Language: English

ISBN-10: 0521559936

ISBN-13: 978-0521559935

Product Dimensions: 6 x 0.6 x 9 inches

Shipping Weight: 14.1 ounces (View shipping rates and policies)

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Ideas from the theory of critical phenomena have been of great importance in polymer modelling ever since the Nobel prize winner P. G. de Gennes showed how the two subjects can be connected in 1972. This book provides an overview of what has been done in the 25 years following Professor de Gennes' original work. It presents a clear summary of this field, focussing on polymer models on a lattice. The volume will be valuable for graduate students and researchers working in statistical

mechanics, theoretical physics, polymer physics, applied mathematics and theoretical chemistry.

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