

Springer

3rd
edition

3rd ed. 2017, XVIII, 304 p.
74 illus., 18 illus. in color.

Printed book

Hardcover

Printed book

Hardcover

ISBN 978-3-319-61999-6

\$ 109,99

Available

Discount group

Professional Books (2)

Product category

Graduate/advanced undergraduate textbook

Series

Graduate Texts in Physics

Other renditions

Softcover

ISBN 978-3-319-87210-0

Physics : Fluid- and Aerodynamics

Phan-Thien, Nhan, Mai-Duy, Nam

Understanding Viscoelasticity

An Introduction to Rheology

- Offers the necessary tools to understand and model complex-structure fluids
- Provides a set of useful problems to aid in the understanding of viscoelasticity
- Includes modelling techniques with some sample programs

This book presents an introduction to viscoelasticity, in particular, to the theories of dilute polymer solutions and dilute suspensions of rigid particles in viscous and incompressible fluids. These theories are important, not just because they apply to practical problems of industrial interest, but because they form a solid theoretical base upon which mathematical techniques can be built, from which more complex theories can be constructed, to better mimic material behaviour. The emphasis of this book is not on the voluminous current topical research, but on the necessary tools to understand viscoelasticity. This is a compact book for a first year graduate course in viscoelasticity and modelling of viscoelastic multiphase fluids. The Dissipative Particle Dynamics (DPD) is introduced as a particle-based method, relevant in modelling of complex-structured fluids. All the basic ideas in DPD are reviewed. The third edition has been updated and expanded with new results in the meso-scale modelling, links between the fluid modelling to its physical parameters and new matlab programs illustrating the modelling. Particle-based modelling techniques for complex-structure fluids are added together with some sample programs. A solution manual to the problems is included.

Order online at [springer.com/booksellers](https://www.springer.com/booksellers)

Springer Nature Customer Service Center LLC

233 Spring Street

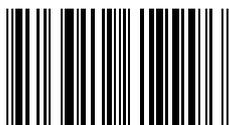
New York, NY 10013

USA

T: +1-800-SPRINGER NATURE

(777-4643) or 212-460-1500

customerservice@springernature.com



ISBN 978-3-319-61999-6 / BIC: PHDF / SPRINGER NATURE: SCP21026

Prices and other details are subject to change without notice. All errors and omissions excepted. Americas: Tax will be added where applicable. Canadian residents please add PST, QST or GST. Please add \$5.00 for shipping one book and \$ 1.00 for each additional book. Outside the US and Canada add \$ 10.00 for first book, \$5.00 for each additional book. If an order cannot be fulfilled within 90 days, payment will be refunded upon request. Prices are payable in US currency or its equivalent.

Part of **SPRINGER NATURE**