

**Crochet, M. J.; Davies, A. R.; Walters, K.**

**Numerical simulation of non-Newtonian flow.** (English) Zbl 0583.76002  
Rheology Series 1. Amsterdam etc.: Elsevier. XIII, 352 p. \$ 65.50; Dfl. 170.00 (1984).

The book has been divided in four sections. Section 1 consists of four chapters dealing with general introduction, basic equations, flow classification and an overview of numerical simulation, respectively. Section 2 deals with finite difference techniques. It consists of three chapters namely introduction to finite differences, finite difference simulation differential models and finite difference simulation - time dependence. Section 3 contains finite element techniques. It comprises of three chapters namely introduction to finite elements, finite element calculation of generalized Newtonian flow and finite element calculation of visco-elastic flow. Section 4 is the epilogue and deals with outstanding problems and future trends. It is a very well - written book and deals in detail with the solution of various problems in non- Newtonian flow, by finite difference and finite element techniques. The presentation is extremely lucid. Presence of section 4 has enhanced the importance of the book. The book will prove to be indispensable for persons working in non-Newtonian flow.

Reviewer: [Y.N.Gaur](#)

**MSC:**

- [76-02](#) Research exposition (monographs, survey articles) pertaining to fluid mechanics Cited in **79** Documents
- [76A10](#) Viscoelastic fluids
- [76A05](#) Non-Newtonian fluids

**Keywords:**

[flow classification](#); [finite difference techniques](#); [finite difference simulation differential models](#); [finite element techniques](#); [finite element calculation of generalized Newtonian flow](#)