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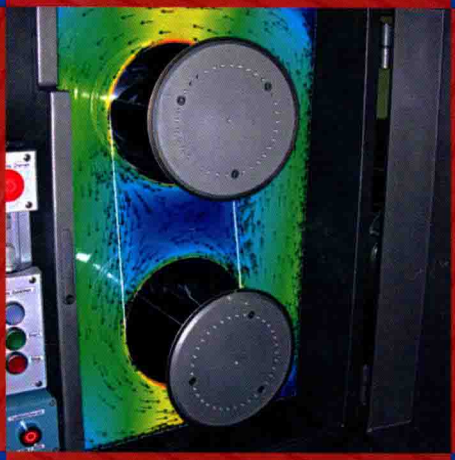

Simulation in textile technology

Theory and applications

Edited by D. Veit

The Textile Institute

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The Textile Institute is a unique organisation in textiles, clothing and footwear. Incorporated in England by a Royal Charter granted in 1925, the Institute has individual and corporate members in over 90 countries. The aim of the Institute is to facilitate learning, recognise achievement, reward excellence and disseminate information within the global textiles, clothing and footwear industries.

Historically, The Textile Institute has published books of interest to its members and the textile industry. To maintain this policy, the Institute has entered into partnership with Woodhead Publishing Limited to ensure that Institute members and the textile industry continue to have access to high calibre titles on textile science and technology.

Most Woodhead titles on textiles are now published in collaboration with The Textile Institute. Through this arrangement, the Institute provides an Editorial Board which advises Woodhead on appropriate titles for future publication and suggests possible editors and authors for these books. Each book published under this arrangement carries the Institute's logo.

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A list of Woodhead books on textile science and technology, most of which have been published in collaboration with The Textile Institute, can be found towards the end of the contents pages.

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Dieter Viet

Preface

This book is intended, on the one hand, to give an overview of common techniques to simulate textile processes and machines and to explain the theory behind them to the extent which is needed for engineers to understand the respective models and computer programs. On the other hand, the many examples from published papers and from the authors' own experience illustrate the wide range of possibilities that these methods offer. This book is based on the authors' research and their reading of the available literature. The selection of the methods described therefore does not claim to be complete.

Each chapter begins with an introduction to theoretical aspects of that particular method. Selected examples of applications are then explained in varying levels of detail before the chapter concludes with some practical advice on how to apply the method. The references at the end of each chapter cover significant papers on the subject, with an emphasis on recent research. In addition, where available, the references mention books that provide a deeper insight into a particular simulation method for those readers wishing to understand the theory in greater detail. Where appropriate, the references also list websites offering computer programs applying the principles covered in each chapter.

The book is intended for graduate students of textile engineering as well as professionals wishing to get a deeper insight into the basics of simulation in textile technology without having to know too much about the mathematics behind it. A general knowledge of textile processes and machines is thus sufficient to understand the contents of this book. We do hope that this book will be interesting reading. Comments on the contents are welcome in order to further improve the book in its next edition.

Dieter Veit