Preface

The importance of economical processing and manufacturing of various wood products is everincreasing. During technological processes wood materials may be exposed to various mechanical effects, e.g. the interactions between wood materials and different kind of tools, and the general laws governing these interactions should be known.

The behaviour of wood materials deviates essentially from that of the generally known elastic materials. Wood has a strong anisotropy and viscoelastic properties which have highly aggravated the derivation of generally valid relationships. In the past time, because of our lack of understanding, knowledge of these processes was essentially restricted to empirical relationships and practical recommendations.

This textbook has attempted to develop a mechanics of wood machining in depth and extent so that it defines and delineates an area of knowledge that may be a new discipline in the future. Each topics in this book is developed from fundamental concepts of mechanics. Where possible, mathematical treatment has been developed in quantitative terms to express specific wood-machine relations on the assumption that these relations should obey fundamental laws. Such a mechanics is capable of describing and predicting the interaction of wood and machine in terms of performance, quality and energy consumption. In many cases working diagrams are elaborated to facilitate the consideration of several variables influencing the specific force, energy requirement of surface quality.

This textbook is an attempt to convey both definitive and practical information concerning wood machining to persons interested in the various problems of wood machining. The topics were treated with the view in mind of presenting as much physical information as possible without excessive mathematical manipulation.

A distinct strength of this book is that it draws on truly international literature and not only English language research publications. At the same time, considerable part of this book relies on own research works.

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