

TITLE:

Research Developments in Wood Engineering and Technology

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in Wood Engineering
and Technology

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SHORT PRESENTATION:

“Research Developments in Wood Engineering and Technology” is a book oriented towards wood products engineering. Different sizes and uses of the final products require specific processes, with a certain degree of optimization, new materials, adhesives, tools, and design techniques.

This book innovates the way in which this material can be used and will provide solutions that optimize the available resources. In this context, wood as material has acquired great importance due to the increasing environmental awareness among users and manufacturers.

The aim of this book is to provide to readers a broad range of the latest research advances and technological developments in the field of wood engineering and technology, to illustrate the state-of-the-art research developments for engineering wood products of solid wood or wood based products, to cover from general concepts through in-depth novelties for this twenty-first century material, and to discuss its processing techniques, engineering capacities, process control measures, quality, and perspectives.

This book may be used as a textbook for undergraduate and graduate students, researchers, and practitioners, serving also as a support and reference guide to all those interested in the field of wood engineering and technology. The main topics covered in the chapters are: wood-based composites: its history, classification, and markets; the wood and fiber panel technology: wood as a substrate, the types of panels, and production condition parameters when gluing; the non-destructive testing of wood-based panels and its process control; adhesives, binders, and matrices for wood and fibers composites; the non-destructive evaluation of wood products with ultrasonic means; ultrasound glulam testing; image evaluation techniques for wood analysis; the lignocellulosic agricultural residue as raw material for panel production; and finally, the wood material processing problem from a tool wear point of view.

Prof.dr.ing.dr. Marius C. Barbu, professor at the Faculty for Wood Engineering of Brasov, brought a valuable contribution, together with other scientists and professionals, to three chapters of this book: Wood Based Composites (Chapter 1), Modern Testing of Wood-Based Panels, Process Control, and Modeling (Chapter 3) and Non-Wood Lignocellulosic Composites (Chapter 8).

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