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Titolo	The Fracture Mechanics of Plant Materials : Wood and Bamboo / / by Zhuoping Shao, Fuli Wang
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ISBN	981-10-9017-3
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Descrizione fisica	1 online resource (232 pages)
Disciplina	620.1126
Soggetti	Mechanics Mechanics, Applied Forest products Ceramics Glass Composites (Materials) Composite materials Solid Mechanics Wood Science & Technology Ceramics, Glass, Composites, Natural Materials
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Formato	Materiale a stampa
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Nota di contenuto	Introduction to the application of the Fracture Mechanics in wood and bamboo -- Mechanical characteristics and stress-strain relationship of wood structure -- Fracture of wood along grain -- Transverse fracture of wood -- Finite element analysis of wood crack tip stress field and prediction of the crack propagation direction -- Fractal features and acoustic emission characteristics of wood fracture -- Mechanical characteristics of bamboo structure and its components -- Interlaminar fracture properties of bamboo -- Modeling on the toughness fracture and energy absorbing mechanism of biomaterial — bamboo (Phyllostachs pubescens).
Sommario/riassunto	This book introduces readers to the application of fracture mechanics and mesomechanics to the analysis of the fracture behaviors of wood and bamboo. It presents a range of research methods to study the

fracture behaviors of wood and bamboo, taking into account their various fracture mechanisms resulting from differences in their macroscopic and microscopic structures. It combines theoretical analysis with experiments, as well as various mathematical tools and experimental approaches. The research methods are illustrated by simple schematic diagrams, and the results obtained are largely presented as tables and figures, helping to make the book concise and compact. As such, it provides a valuable guide to the development of new biocomposites that possess exceptional strength and toughness properties and successfully overcome the shortcomings of biomaterials.