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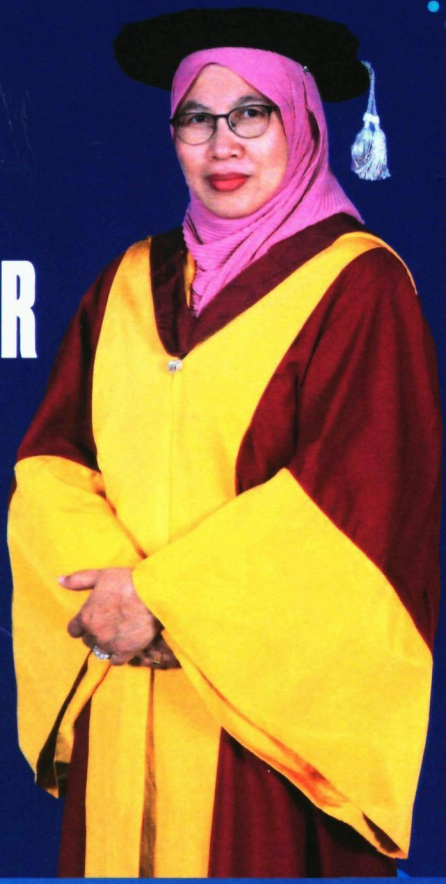
Professorial Lecture UiTM

RENAISSANCE IN TROPICAL HARDWOOD TIMBER CONSTRUCTION



ZAKIAH AHMAD

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Zakiah Ahmad

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PREFACE

Timber engineering deals not only with the structural aspects of timber construction, structural components, joints and systems based on solid timber and engineered wood products, but also material behaviour and properties on a wood element level. This book makes convincing arguments for timber as a viable alternative to conventional materials and methods for buildings that continue to trample the earth with giant carbon footprints. Presenting precedent-setting case studies, the author also demonstrates that wood is the optimal material for economically sustainable construction. This book also presents Prof Zakiah's relentlessness in her pursuit to establish scientific data for solid timber, timber composite and engineered timber products such as laminated veneer lumber, glued and cross laminated timber from Malaysian tropical hardwood. The author also demonstrates the incompatibility of international timber standards with Malaysian timbers. Comprehensive studies from various timber species with complex analysis and formula derivation have been performed to study their mechanical, bondability, durability and fire resistance properties. These studies are integral to validate novel formulas and modification factors and new set of strength and classes properties and charring rate. These data are indispensable in the design of structures that are made from tropical timber, forming the foundation for Malaysian Standards as well as improvising the manufacturing process of engineered timber