

Contents

Part I Wood Properties and Variability

Optimizing Wood Utilization Based on Whole Tree Inherent Property Maps	3
Mathew Leitch and Scott Miller	
Screening Corewood of Pine for Wood Properties	19
M. Sharma, J.C.F. Walker and Shakti S. Chauhan	
Imaging Spiral Grain in <i>Pinus radiata</i> with X-ray Microtomography	29
Jimmy Thomas and David A. Collings	
Rapid Measurement of Density of Wood in Progeny Trial of <i>Acacia mangium</i> Willd. Using Resistograph—A Nondestructive Method	37
A.R. Uthappa, Maheshwar Hegde, P. Karthick Kumar, B. Gurudev Singh and R.S. Prashanth	
Eliminating Growth-Stresses in <i>Eucalyptus</i>: A Scoping Study with <i>E. bosistoana</i> and <i>E. nitens</i>	47
M. Sharma, J.C.F. Walker and Shakti S. Chauhan	
Longitudinal Growth Strains in <i>Melia dubia</i>	55
Sandhya Sharma, Santosh Sumbali, Pankaj Aggarwal and Shakti S. Chauhan	
Immunofluorescence Localization of β-(1-4)-D-Galactan and Xylans in Tension Wood and Normal Wood Fibres of <i>Leucaena leucocephala</i>	63
S. Pramod, Kishore S. Rajput and Karumanchi S. Rao	
Comparative Wood Anatomy of Four <i>Artocarpus</i> Species of North East India with Reference to Their Identification	73
M.K. Singh, C.L. Sharma and M. Sharma	

Wood Anatomy of Some Members of Family Fagaceae from North-East India	83
M. Sharma, W. Shylla and C.L. Sharma	
Anatomical Characterisation and In Vitro Laboratory Decay Test of Different Woods Decayed by <i>Xylaria hypoxylon</i>	93
Rina D. Koyani, S. Pramod, H.R. Patel, A.M. Vasava, K.S. Rao and Kishore S. Rajput	
Growth Ring Structure and Specific Gravity Variation in Juvenile and Mature Wood of Natural-Grown Teak (<i>Tectona grandis</i> L.f.)	105
Satish Kumar Sinha, R. Vijendra Rao, T.S. Rathore and H.P. Borgaonkar	
Variability for Heartwood Content in Three Commercially Important Tree Species of Peninsular India—<i>Hardwickia binata</i>, <i>Pterocarpus santalinus</i> and <i>Santalum album</i>	117
A.N. Arun Kumar, Geeta Joshi and S. Manikandan	
Relations Between Growth Traits and Wood Parameters of <i>Tectona grandis</i> L.f. in Even-Aged Plantations in Tamil Nadu	127
C. Buvaneswaran, M. George, K. Vinoth Kumar and R. Velumani	
Variation in Heartwood Formation and Wood Density in Plantation-Grown Red Sanders (<i>Pterocarpus santalinus</i>)	139
K. Suresh, Maheshwar Hegde, P. Deenathayalan, P. Karthick Kumar, M. Thangapandi, B. Gurudev Singh and N. Krishnakumar	
Identification and Characterization of Tension Wood in <i>Acacia auriculiformis</i> A. Cunn. ex Benth. and <i>Acacia mangium</i> Willd. Grown in Kerala	153
E.V. Anoop, C.M. Jijeesh, S. Jinu, R. Vishnu and M.C. Anish	
Basic Density and Fibre Morphological Characteristics of Selected Pulpwood Species of Kerala	161
E.V. Anoop, Arun Joseph, C.M. Jijeesh, R. Vishnu and Anju S. Vijayan	
Estimation of Leaf Area–Wood Density Traits Relationship in Tropical Dry Evergreen Forests of Southern Coromandel Coast, Peninsular India	169
M. Udayakumar and T. Sekar	
Variations on Pulping Properties of <i>Gmelina arborea</i> Roxb. Grown in Different Geographical Regions of Tamil Nadu, India	189
J. Soosai Raj, A. Mayavel, V.N. Mutharaian and A. Nicodemus	
Biochemical Characterization of Wood Lignin of <i>Hevea brasiliensis</i>	199
S. Pramod, C.P. Reghu and K.S. Rao	

Part II Wood Protection

Protection of Wood: A Global Perspective on the Future	213
Jeffrey J. Morrell	

Conveyor Belt Pressure Impregnation of Wood	227
Peter Vinden, Grigori Torgovnikov and Anil K. Sethy	

Natural Resistance of Imported Timbers Against Termites and Fungi in Indian Condition—A Comparison.	243
Rashmi Ramesh Shanbhag, R. Sundararaj, H.C. Nagaveni, G. Vijayalakshmi and B. Lingappa	

Enhancing Photostability of Wood Coatings Using Titanium Dioxide Nanoparticles.	251
Kavyashree Srinivas and Krishna K. Pandey	

Screening of Oils of <i>Pongamia pinnata</i> Linn., <i>Jatropha curcas</i> Linn. and <i>Simarouba glauca</i> D.C. for Developing Eco-Friendly Wood Preservatives	261
D. Venmalar	

Fungal Inhibition in Wood Treated with <i>Lantana camara</i> L. Extract.	269
Heena Gupta, Kulwant Rai Sharma and J.N. Sharma	

Powderpost Beetle Menace in Wooden Handicraft Industries and Their Management	277
Raja Muthukrishnan and O.K. Remadevi	

Effect of Thermal Modification on Physical Properties of <i>Bambusa nutans</i>	287
Kiran Ghadge and Krishna K. Pandey	

Part III Wood-Based Composites

Micromechanics of Cellulose Fibres and Their Composites.	299
Ramesh Babu Adusumalli, Karthik Chethan Venkateshan and Wolfgang Gindl-Altmutter	

Adhesives of Bio-origin for Wood Composites	323
D. Sujatha, S.K. Nath and B.S. Mamatha	

Experimental and Numerical Modeling of Hemp–Polyester Composites.	333
D.S. Chethan, G.S. Venkatesh, Gunti Ranga Srinivas and C.S. Vinod Kumar	

Lantana Fiber-Filled Polypropylene Composite	343
Amey Kale, N. Raghu, Shakti S. Chauhan and Pankaj Aggarwal	

Development of Fire Retardant Wood Composite Using Amino Resin	353
B.S. Mamatha, D. Sujatha, S.K. Nath, D.N. Uday and Anand Nandanwar	
Study on Utilization of Plantation-Grown Timber Species <i>Grevillea robusta</i> (Silver Oak) for Medium-Density Fibre Board	363
D.N. Uday, B.S. Mamatha, D. Sujatha and V. Prakash	
Suitability of Mixed Species of Bamboo (<i>Bambusa polymorpha</i> and <i>Bambusa tulda</i>) for Medium-Density Particle Board	375
Amit Ashok Mahadik, Anil Negi and Amey Pravin Awale	
 Part IV Wood Utilization Pattern	
A Comparative Assessment of Autoclave and Microwave-Assisted Peroxometal Complex in Delignification of Wood Biomass for Enhanced Sugar Production	383
Pradeep Verma and Venkatesh Chaturvedi	
Yield Evaluation of Oyster Mushroom on Dust Waste of Some Common Timber Species	391
C. Sneha and Minnu Tomy	
Study on Fuel Properties of Important Biomass Briquetting Feedstocks in India	397
Ritesh Kumar, M. Srinivasa Rao, R. Ezhumalai and R. Tailor	
Study on Chemical, Elemental and Gasification Characteristics of <i>Lantana camara</i> Wood	403
R. Ezhumalai and Ritesh Kumar	
Search for Future Fuels—Pathway Points to a ‘Boring’ Process	411
L.N. Santhakumaran	
Wood Use in India—Readying for that Elusive Renaissance?	423
K. Satyanarayana Rao	
 Part V Wood and Climate Change	
Wood is Good for REDD+!	433
Ederson A. Zanetti	
How Good is Wood? Facts and Myths Regarding Wood as a Green Building Material	443
Arijit Sinha	

Carbon Sequestration by Bamboo Farming on Marginal Land and Sustainable Use of Wood Waste for Bioenergy: Case Studies from Abellon Clean Energy	451
Beena Patel, Bharat Gami and Pankaj Patel	
Use Wood—Combat Climate Change	469
S.K. Nath	
Author Index.	479

Wood is Good

Current Trends and Future Prospects in Wood
Utilization

Pandey, K.K.; Ramakantha, V.; Chauhan, S.S.; Kumar,
A.A.N. (Eds.)

2017, XIV, 480 p. 126 illus., Hardcover

ISBN: 978-981-10-3113-7