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Md Rezaur Rahman

# Wood Polymer Nanocomposites

Chemical Modifications, Properties  
and Sustainable Applications

 Springer

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# Preface

Recently, nanoclay-dispersed polymeric materials exhibit better utilization in diverse applications. The nanoclay as inorganic fillers consequences from the exfoliation or the dispersion at nanoscale into polymeric matrices, which enhance the improvement of nanocomposites properties by adding slight amounts of clay due to the high specific area. Current studies reported about Wood Polymer Nanocomposites-Chemical Modifications, Properties, and Sustainable Applications, which demonstrated better mechanical and thermal properties as compared to nanoclay-reinforced polymer composites. The proposed book is focused on chemically dispersed nanoclay-impregnated wood polymer nanocomposites properties and applications. It will also include the introduction and reinforcing potential various clay and monomers dispersed wood nanocomposites. The readers will find complete information about preparation and characterizations of various clay and monomers dispersed wood nanocomposites, combined styrene/mma/nanoclay crosslinker effect, oxidation of wood species by phenyl hydrazine, *N,N*-dimethylacetamid impregnation, urea formaldehyde impregnation, epoxy/nanoclay impregnation, nanoclay/phenol formaldehyde resin impregnation, clay-dispersed styrene-co-glycidyl methacrylate impregnation, styrene-co-ethylene glycol dimethacrylate impregnation, styrene-co-3-(trimethoxysilyl)propyl methacrylate with clay impregnation, acrylonitrile/butyl methacrylate/halloysite nanoclay impregnation, furfuryl alcohol-co-glycidyl methacrylate/nanoclay impregnation, furfuryl alcohol-co-ethyl methacrylate-impregnated wood polymer nanocomposites, and sustainable application of various monomer/clay-dispersed wood polymer nanocomposites. I am thankful to all co-authors who contributed book chapters and provided their valuable ideas and knowledge to this edited book. I attempt to gather all the information of co-authors from same fields in chemically modified nanoclay-dispersed nanocomposites and finally produce this project that will hopefully become a success. I impressively appreciate co-authors' support to formulating ours idea in reality. I thank Springer International Publishing AG, Gewerbestrasse 11, 6330 Cham, Switzerland, team for their substantial cooperation at every stage of the book production.

Kota Samarahan, Malaysia

Md Rezaur Rahman

# Contents

<b>Introduction to Reinforcing Potential of Various Clay and Monomers Dispersed Wood Nanocomposites'</b> .....	1
M.R. Rahman and J.C.H. Lai	
1 Introduction .....	1
2 Problem Statement .....	3
3 Literature Review .....	4
3.1 Enhancement of Wood Quality .....	4
3.2 Modern Policies to Growth Wood Quality .....	5
3.3 Chemical Modification of Wood .....	6
3.4 Wood Modifications by Impregnation Technique .....	12
3.5 Wood Impregnated by Inorganic Substance .....	19
4 Summary .....	29
References .....	30
<b>Preparation and Characterizations of Various Clay- and Monomers-Dispersed Wood Nanocomposites</b> .....	37
M.R. Rahman and S. Hamdan	
1 Overview .....	37
2 Methods Related for Wood Polymer Nanocomposites (WPNC) .....	38
2.1 Curing Methods for Wood Polymer Nanocomposites (WPNC) Preparation .....	38
2.2 Wood-Hardening Process .....	39
2.3 Monomer and Polymer Treatments .....	40
2.4 Other Treatments .....	43
2.5 Combination of Two or Three Monomers .....	43
2.6 Chemical Impregnation and Compression of Wood .....	43
2.7 Summary of Wood Quality Improvement Methods and Technologies .....	44

3	Methods . . . . .	45
3.1	Flowchart of Project . . . . .	47
3.2	Preparation of WPNCs . . . . .	47
3.3	Characterization of Wood Polymer Nanocomposites (WPNC) . . . . .	48
4	Summary . . . . .	64
	References . . . . .	65
	<b>Combined Styrene/MMA/Nanoclay Crosslinker Effect on Wood Polymer Nanocomposites (WPNCs)</b> . . . . .	69
	M.R. Rahman and J.C.H. Lai	
1	Introduction . . . . .	69
2	Experimental . . . . .	70
2.1	Materials . . . . .	70
2.2	Preparation of Monomers . . . . .	71
2.3	Impregnation of Wood Specimens/Co-polymerization Reaction with Cellulose in Wood Cell . . . . .	71
2.4	Microstructural Characterizations . . . . .	72
3	Results and Discussion . . . . .	73
3.1	Weight Percent Gain (WPG %) . . . . .	73
3.2	Fourier Transform Infrared Spectroscopy (FT-IR) . . . . .	74
3.3	Mechanical Properties Test . . . . .	74
3.4	Thermogravimetric Analysis (TGA) . . . . .	76
3.5	Scanning Electron Microscopy (SEM) Analysis . . . . .	77
4	Conclusion . . . . .	78
	References . . . . .	79
	<b>Oxidation of Wood Species by Sodium Metaperiodate and Impregnation with Phenyl Hydrazine</b> . . . . .	81
	M.R. Rahman	
1	Introduction . . . . .	81
2	Experimental . . . . .	83
2.1	Materials . . . . .	83
2.2	Specimen Preparation . . . . .	83
2.3	Microstructural Characterizations . . . . .	83
3	Results and Discussion . . . . .	87
3.1	Fourier Transform Infrared Spectroscopy (FT-IR) . . . . .	87
3.2	Storage Modulus ( $\log E'$ ) and Loss Tangent ( $\tan \delta$ ) of Raw Wood, WPNC, and PTWPNC . . . . .	88
3.3	Dynamic Young's Modulus of Raw Wood, WPNC, and PTWPNC . . . . .	90
3.4	MOE and MOR Measurement . . . . .	92
3.5	Static Young's Modulus ( $E$ ) Measurement . . . . .	95
3.6	Fungal Decay Resistance Test . . . . .	95

3.7 Water Uptake . . . . . 97  
 3.8 Scanning Electron Microscopy (SEM) Analysis . . . . . 98  
 4 Conclusion . . . . . 99  
 References . . . . . 101

**Characterization of *N,N*-Dimethylacetamide Impregnated Wood Polymer Nanocomposites (WPNCs)** . . . . . 103

M.R. Rahman  
 1 Introduction . . . . . 103  
 2 Materials and Methods . . . . . 104  
     2.1 Materials . . . . . 104  
     2.2 Manufacturing of Wood Polymer Nanocomposites . . . . . 104  
     2.3 Microstructural Characterizations . . . . . 105  
 3 Results and Discussion . . . . . 108  
     3.1 Fourier Transform Infrared Spectroscopy (FT-IR) . . . . . 108  
     3.2 Thermogravimetric Analysis (TGA) . . . . . 109  
     3.3 Differential Scanning Calorimetry (DSC) . . . . . 111  
     3.4 Dynamic Young’s Modulus . . . . . 114  
     3.5 MOE and MOR Measurement . . . . . 115  
     3.6 Static Young’s Modulus (*E*) . . . . . 117  
     3.7 X-ray Diffraction (XRD) . . . . . 117  
     3.8 Scanning Electron Microscopy (SEM) . . . . . 119  
 4 Conclusion . . . . . 120  
 References . . . . . 120

**Mechanical and Thermal Characterization of Urea-Formaldehyde Impregnated Wood Polymer Nanocomposites (WPNCs)** . . . . . 123

M.R. Rahman  
 1 Introduction . . . . . 123  
 2 Materials and Methods . . . . . 124  
     2.1 Materials . . . . . 124  
     2.2 Manufacturing of Wood Polymer Nanocomposites . . . . . 125  
     2.3 Microstructural Characterizations . . . . . 125  
 3 Result and Discussion . . . . . 125  
     3.1 FT-IR . . . . . 125  
     3.2 TGA . . . . . 126  
     3.3 DSC . . . . . 127  
     3.4 Dynamic Young’s Modulus Measurement . . . . . 130  
     3.5 MOE and MOR Measurement . . . . . 130  
     3.6 Static Young’s Modulus (*E*) Measurement . . . . . 133  
     3.7 XRD Analysis . . . . . 134  
     3.8 SEM . . . . . 134  
 4 Conclusion . . . . . 135  
 References . . . . . 136



<b>Characterization of Epoxy/Nanoclay Wood Polymer Nanocomposites (WPNCs)</b> .....	137
M.R. Rahman	
1 Introduction .....	137
2 Materials and Methods .....	138
2.1 Materials .....	138
2.2 Preparation of Solution Through Impregnation .....	139
2.3 Manufacturing of Wood Polymer Nanocomposites .....	139
3 Result and Discussion .....	139
3.1 Fourier Transform Infrared Spectroscopy (FT-IR) Analysis .....	139
3.2 Thermogravimetric Analysis (TGA) .....	141
3.3 Dynamic Young's Modulus Measurement .....	141
3.4 Modulus of Elasticity (MOE) and Modulus of Rupture (MOR) Measurement .....	143
3.5 Static Young's Modulus ( <i>E</i> ) Measurement .....	146
3.6 X-ray Diffraction (XRD) Analysis .....	146
3.7 Scanning Electron Microscopy (SEM) Analysis .....	147
4 Conclusion .....	148
References .....	149
<b>Influence of Nanoclay/Phenol Formaldehyde Resin on Wood Polymer Nanocomposites</b> .....	151
M.R. Rahman	
1 Introduction .....	151
2 Materials and Methods .....	152
2.1 Materials .....	152
2.2 Impregnation Solutions Preparation .....	152
2.3 Fabrication of Wood Polymer Nanocomposites (WPNCs) .....	153
3 Result and Discussion .....	153
3.1 Fourier Transform Infrared Spectroscopy Analysis .....	153
3.2 Thermogravimetric Analysis .....	155
3.3 Dynamic Young's Modulus Measurement .....	156
3.4 Modulus of Elasticity and Modulus of Rupture Measurement .....	157
3.5 Static Young's Modulus Measurement .....	159
3.6 X-ray Diffraction Analysis .....	160
3.7 Scanning Electron Microscopy Analysis .....	162
4 Conclusion .....	162
References .....	163
<b>Clay Dispersed Styrene-co-glycidyl Methacrylate Impregnated Kumpang Wood Polymer Nanocomposites: Impact on Mechanical and Morphological Properties</b> .....	165
M.R. Rahman, S. Hamdan and J.C.H. Lai	
1 Introduction .....	165
2 Experimental .....	168

- 2.1 Materials . . . . . 168
- 2.2 Specimen Preparation . . . . . 168
- 2.3 Preparation of Wood Polymer Nanocomposites (WPNCs) . . . . . 168
- 2.4 Microstructural Characterizations . . . . . 169
- 3 Results and Discussion. . . . . 170
  - 3.1 Fourier Transform Infrared Spectroscopy (FT-IR). . . . . 170
  - 3.2 Modulus of Rupture (MOR), Modulus of Elasticity (MOE) and Dynamic Young’s Modulus ( $E_d$ ) Measurements . . . . . 172
  - 3.3 Weight Percentage Gain (WPG) and Water Uptake (WU) . . . . . 173
  - 3.4 Scanning Electron Microscopy (SEM) . . . . . 174
- 4 Conclusion . . . . . 175
- References . . . . . 176

**Physico-mechanical, Morphological, and Thermal Properties of Clay Dispersed Styrene-co-Maleic Acid Impregnated Wood Polymer Nanocomposites. . . . . 179**

M.R. Rahman, S. Hamdan and J.C.H. Lai

- 1 Introduction . . . . . 179
- 2 Experimental . . . . . 181
  - 2.1 Materials . . . . . 181
  - 2.2 Specimen Preparation . . . . . 181
  - 2.3 Preparation of Wood Polymer Nanocomposites (WPNCs) . . . . . 182
  - 2.4 Microstructural Characterizations . . . . . 182
- 3 Results and Discussion. . . . . 185
  - 3.1 FT-IR . . . . . 185
  - 3.2 Scanning Electron Microscopy (SEM) . . . . . 187
  - 3.3 MOR, MOE, and  $E_d$ . . . . . 188
  - 3.4 Weight Percentage Gain (WPG) and Water Uptake (WU) . . . . . 190
  - 3.5 Thermogravimetric Analysis (TGA) . . . . . 191
  - 3.6 Differential Scanning Calorimetry (DSC) . . . . . 193
- 4 Conclusion . . . . . 194
- References . . . . . 194

**Preparation and Characterizations of Clay-Dispersed Styrene-co-Ethylene Glycol Dimethacrylate-Impregnated Wood Polymer Nanocomposites. . . . . 199**

M.R. Rahman, S. Hamdan and J.C.H. Lai

- 1 Introduction . . . . . 200
- 2 Experimental . . . . . 201
  - 2.1 Materials . . . . . 201
  - 2.2 Specimen Preparation . . . . . 202
  - 2.3 Preparation of Wood Polymer Nanocomposites (WPNCs) . . . . . 202
  - 2.4 Microstructural Characterizations . . . . . 202

3	Results and Discussion . . . . .	205
3.1	FT-IR . . . . .	205
3.2	X-Ray Diffraction (XRD) Analysis . . . . .	206
3.3	Scanning Electron Microscopy (SEM) . . . . .	207
3.4	Modulus of Rupture (MOR), Modulus of Elasticity (MOE), and Dynamic Young's Modulus ( $E_d$ ) Measurements . . . . .	209
3.5	Weight Percentage Gain (WPG) and Water Uptake (WU) . . . . .	210
3.6	Thermogravimetric Analysis (TGA) . . . . .	211
3.7	Differential Scanning Calorimetry (DSC) . . . . .	213
4	Conclusion . . . . .	214
	References . . . . .	215

**Physico-Mechanical, Thermal, and Morphological Properties of  
Styrene-co-3-(Trimethoxysilyl)Propyl Methacrylate with Clay**

	<b>Impregnated Wood Polymer Nanocomposites . . . . .</b>	<b>219</b>
--	--	------------

M.R. Rahman, S. Hamdan and J.C.H. Lai

1	Introduction . . . . .	219
2	Experimental . . . . .	221
2.1	Materials . . . . .	221
2.2	Specimen Preparation . . . . .	221
2.3	Preparation of Wood Polymer Nanocomposites . . . . .	222
2.4	Characterizations . . . . .	222
3	Results and Discussion . . . . .	225
3.1	Fourier Transform Infrared Spectroscopy (FT-IR) Analysis . . . . .	225
3.2	X-ray Diffraction (XRD) Analysis . . . . .	225
3.3	Scanning Electron Microscopy (SEM) . . . . .	228
3.4	MOR, MOE, and Ed. . . . .	229
3.5	Weight Percentage Gain (WPG) and Water Uptake (WU) . . . . .	230
3.6	Thermogravimetric Analysis (TGA) . . . . .	230
4	Conclusion . . . . .	233
	References . . . . .	234

**Acrylonitrile/Butyl Methacrylate/Halloysite Nanoclay Impregnated  
Sindora Wood Polymer Nanocomposites (WPNCs): Physico-  
mechanical, Morphological and Thermal Properties**

	<b>. . . . .</b>	<b>237</b>
--	------------------	------------

M.R. Rahman, J.C.H. Lai and S. Hamdan

1	Introduction . . . . .	238
2	Experimental . . . . .	239
2.1	Materials . . . . .	239
2.2	Preparation of Acrylonitrile/Butyl Methacrylate/Halloysite Nanoclay Wood Polymer Nanocomposites (AN-co-BMA-HNC WPNCs) . . . . .	239
2.3	Impregnation of AN-co-BMA-HNC WPNCs . . . . .	240
2.4	Microstructural Characterizations . . . . .	240

3	Results and Discussion . . . . .	243
3.1	Weight Percent Gain (WPG %) . . . . .	243
3.2	Fourier Transform Infrared Spectroscopy (FT-IR) . . . . .	243
3.3	Scanning Electron Microscopy (SEM) Analysis . . . . .	245
3.4	Three-Point Flexural Test . . . . .	246
3.5	Dynamic Mechanical Thermal Analysis (DMTA) . . . . .	246
3.6	Thermogravimetric Analysis (TGA) . . . . .	249
3.7	Differential Scanning Calorimetry (DSC) Analysis . . . . .	252
3.8	Moisture Absorption Analysis . . . . .	252
4	Conclusion . . . . .	253
	References . . . . .	254

**Studies on the Physical, Mechanical, Thermal and Morphological Properties of Impregnated Furfuryl Alcohol-co-Glycidyl Methacrylate/Nanoclay Wood Polymer Nanocomposites** . . . . . 257

M.R. Rahman, J.C.H. Lai and S. Hamdan

1	Introduction . . . . .	258
2	Experimental . . . . .	259
2.1	Materials . . . . .	259
2.2	Preparation of Furfuryl Alcohol/Glycidyl Methacrylate/ Halloysite Nanoclay Wood Nanocomposites (WPNCs) (FA-co-GMA-HNC WPNCs) . . . . .	259
2.3	Impregnation of FA-co-GMA-HNC WPNCs . . . . .	260
2.4	Microstructural Characterizations . . . . .	260
3	Results and Discussion . . . . .	262
3.1	Weight Percent Gain (WPG %) . . . . .	262
3.2	Fourier Transform Infrared Spectroscopy (FT-IR) . . . . .	263
3.3	Scanning Electron Microscopy (SEM) Analysis . . . . .	263
3.4	Three-Point Flexural Test . . . . .	264
3.5	Dynamic Mechanical Thermal Analysis (DMTA) . . . . .	267
3.6	Thermogravimetric Analysis (TGA) . . . . .	269
3.7	Differential Scanning Calorimetry (DSC) Analysis . . . . .	270
3.8	Moisture Absorption Analysis . . . . .	272
4	Conclusion . . . . .	273
	References . . . . .	273

**Nanoclay Dispersed Furfuryl Alcohol-co-Ethyl Methacrylate Wood Polymer Nanocomposites: The Enhancement on Physico-mechanical and Thermal Properties** . . . . . 275

M.R. Rahman, J.C.H. Lai and S. Hamdan

1	Introduction . . . . .	276
2	Experimental . . . . .	277
2.1	Materials . . . . .	277
2.2	Methods . . . . .	277
2.3	Microstructural Characterizations . . . . .	278

3	Results and Discussion . . . . .	280
3.1	Weight Percent Gain (WPG %) . . . . .	280
3.2	Fourier Transform Infrared Spectroscopy (FT-IR) . . . . .	280
3.3	Scanning Electron Microscopy (SEM) Analysis . . . . .	282
3.4	Three-Point Flexural Test . . . . .	284
3.5	Dynamic Mechanical Thermal Analysis (DMTA) . . . . .	285
3.6	Thermogravimetric Analysis (TGA) . . . . .	287
3.7	Differential Scanning Calorimetry (DSC) Analysis . . . . .	288
3.8	Moisture Absorption Analysis . . . . .	290
4	Conclusion . . . . .	291
	References . . . . .	291
	<b>Sustainable Application of Various Monomer/Clay Dispersed Wood Polymer Nanocomposites . . . . .</b>	<b>295</b>
	M.R. Rahman, S. Hamdan and J.C.H. Lai	
1	Introduction . . . . .	295
2	Experimental . . . . .	298
2.1	Materials . . . . .	298
2.2	Preparation of ST- <i>co</i> -MMM-Nanoclay . . . . .	299
2.3	Impregnation of Wood Specimens with ST- <i>co</i> -MMM-Nanoclay . . . . .	300
2.4	Specimen Preparation . . . . .	300
2.5	Preparation of Different WPNCs and WPCs . . . . .	301
2.6	Decay Tests for Wood Specimens with ST- <i>co</i> -MMM-Nanoclay . . . . .	301
2.7	Laboratory Fungal Decay Resistance Test for WPCs and WPNC . . . . .	301
3	Results and Discussion . . . . .	303
3.1	Decay Test for Wood Specimens with ST- <i>co</i> -MMM-Nanoclay . . . . .	303
3.2	Decay Resistance of Styrene- <i>co</i> -3-(Trimethoxysilyl) Propyl Methacrylate with Clay Impregnated Wood Polymer Nanocomposites . . . . .	305
3.3	Investigation of Decay Resistance Properties of Clay Dispersed Styrene- <i>co</i> -Ethylene Glycol Dimethacrylate Impregnated Wood Polymer Nanocomposites . . . . .	307
3.4	Clay Dispersed Styrene- <i>co</i> -Maleic Acid Impregnated Wood Polymer Nanocomposites: Impact on Decay Resistance Properties . . . . .	308
3.5	Clay Dispersed Styrene- <i>co</i> -Glycidyl Ethacrylate Impregnated Wood Polymer Nanocomposites: Impact on Decay Resistance Properties . . . . .	309

3.6	Decay Resistance Characterization of Wood Polymer Composites Impregnated by 4-Methyl Catechol at Various pH Levels . . . . .	310
4	Conclusion . . . . .	311
	References . . . . .	311