

Table of Contents

Preface

Chapter 1: Building Materials

Embedding Bio-Filler Materials to Enhance Physical-Mechanical-Thermal Properties of Concrete	
N. Tangboriboon and S. Niyasom	3
Mechanical and Wettability Performance of Sand/HDPE Composite Sheets	
S. Siraj, A. Al-Marzouqi and M.Z. Iqbal	9
Recycled Polymer Concrete Composite: A Retrospective Review of the Literature and Framework for Thermal Comfort in Homes	
C.H. Ortega-Jimenez, E. Ardón, J. Pineda, C. Ventura, C. Núñez, D. Núñez and C. Romero	15

Chapter 2: Technologies of Manufacturing and Processing

Experimental Investigation on the Mechanical Properties of Thin Beams Built by Electron Beam Melting Technology and Ti6Al4V Material	
M.T. Pham, S.H. Yeo, T.J. Teo, P. Wang and M.L.S. Nai	25
Surface Integrity Variations of Stainless Steel 304 upon Severe Shot Peening	
Y.F. Wei, J.J. Lee, H.F. Liu, C.C. Tan and D.T. Ardi	30
Systematic Review of Powder Metallurgy: Current Overview of Manufactured Materials and Challenges for Future Research	
C.H. Ortega-Jimenez, G.D.L. Andino, W.A.A. Segura, G.E.V. Andino, C.E.D. Pavón, S.A.B. Valladares, H.D.C. Donaire, L.F.C. Flores and C.H.A. Padilla	36

Chapter 3: Polymers and Composites

Ultimate Strength Prediction of Fibrous Composites only upon Independently Measured Constituent Properties	
X.J. Zhu, H.G. Qu, K.H. Xin, X.R. Qiu and J.W. Chen	45
Microscopic Damage Model for Fibrous Composites Considering Randomness in Constituent Materials	
H.T. Dat, N.K. Nguyen, V.T. Nguyen, H.T.H. Yen and D. Kurita	51
Simple Implementation of Asymptotic Homogenization Method for Periodic Composite Materials	
S.S. Yang, T. Gao and C. Shen	57
Effect of a Chemical Treatment Series on the Structure and Mechanical Properties of Abaca Fiber (<i>Musa textilis</i>)	
C.L. Custodio, X. Yang, A.E. Wilsby, V.F. Waller, R.R. Aquino, L.L. Tayo, D.B. Senoro and L.A. Berglund	64
Effect of Repetitive Recycling on the Mechanical Properties of Polypropylene Blends Based on Material Value Conservation Paradigm	
D.S. Gabriel and A. Ananditto	70
Mechanical Properties Improvement of Recycled Polypropylene with Material Value Conservation Schemes Using Virgin Plastic Blends	
D.S. Gabriel and A.N. Tiana	76
An Overview of Buckling, Burst and Corrosion Analyses on Pre-Stressed Thermosetting Glass Fiber-Reinforced Polymer Tubular Structures	
N.N.M. Nordin, Z. Ahmad, S.I.S. Abdullah and Z.A. Ahmad	82
Development of Waterproof Papers from Water Hyacinth Fibers Modified by Polylactide	
T. Wutisart	89

Chapter 4: Nano- and Functional Materials

Analysis on the Influence of O-MMT in the Properties and Bacterial Count of PVDF Nanocomposite Membrane

A.P.T. Castillo, B.R. Pasela, K.J.J.L. Tabucan and R.R. Aquino

97

Luminescence Property of Yb³⁺, Er³⁺ Co-Doped Oxy-Fluoride Transparent Glass

J.Y. Su and X.Y. Zhang

103

Effect of Coating Method on the Surface Characteristics of NiTi Shape Memory Alloy

G.M. Simsek, M. Ipekoglu and G.G. Yapici

108