

Table of Contents

Preface

Chapter 1: Bio-Based Materials

Characterisation of Irradiated Detergent Using Bovine Serum Albumin (BSA) N.S. Jasrin and S.A. Othman	3
Environmental Impact Analysis of Kapok (<i>Ceiba pentandra</i>) Fiber-Based Oil Sorbent Technology: A Life Cycle Analysis J. Sevilla-Nastor, A.L.D. Abejero and M.D.L. Balela	15
Evaluating the Characteristics and Performance of Pristine and Modified Kapok Fibers as Marine Oil Sorbents K.J.T. Castillo, M.C. Maguyon-Detras, F.L.M. Sarmiento, A.L.D. Abejero, M.U. Herrera, R.D. Manalo and M.D.L. Balela	21
Isolation of Microorganisms for Use in the Biodegradation of Oil Saturated Spent Kapok (<i>Ceiba pentandra</i> (L.) Gaertn.) Fiber Based Sorbents A. Punay, R.D. Tambalo, M.U. Herrera, R.D. Manalo, A.L.D. Abejero and M.D.L. Balela	31
Effect of Orientation on Mechanical Properties of Ramie Reinforced ABS Solution Impregnation Composites Using Lay-Up Technique S.R. Abdullah, M.U. Wahit and N. Othman	39

Chapter 2: Polymer Waste and Bio-Based Waste Recycling

Comparative Study on the Effect of Different Rubber Waste as Filler on Recycled Polyvinylchloride Composites K.Y. Hang, M. Muniyadi and Y. Munusamy	51
Extraction and Characterisation of Chitin and Chitosan from Irish Brown Crab Shell Waste A.S. Sufian, C. O'Donnell and L. Geever	71
Properties of Re-Vulcanized Waste EPDM/EPDM Rubber Blends with Different Ratios of ZDMA M.N. Sarip, N.M. Abdul Wahab, Z. Ahmad, M.S. Mustafa, S. Saiwari, S.N. Surip and D. Samsudin	91
Investigating the Influence of Varied Seaweed Filler Content on the Thermal and Tensile Properties of Poly(Butylene Adipate-Co-Terephthalate) Bio-Composite M.H. Hamdan, S.N. Sarmin, M. Jawaidd, A.S. Ismail, H. Fouad and N. Salim	101

Chapter 3: Advanced Polymers and Composites

Preparation of Electrochemically Active Composite Kapok Fiber Paper for Supercapacitors K.C. Fermano, R.D. Manalo, M.U. Herrera and M.D.L. Balela	111
3D Bioprinted Polylactic Acid/Pectin Scaffold for Tissue Regeneration Potential: The Study on Printability and Mechanical Properties M.S.A. Hamzah, J.A. Sukor, T.M.F.T. Mohd Marzuki and N.H. Mat Nayan	119
Effect of Hydrolysis Acid Concentration on Microcrystalline Cellulose Derived from Denim Fibers for UV-Shielding Applications F.L.M. Sarmiento, C.L.E. Aquino and M.D.L. Balela	127