

Table of Contents

Preface

Chapter 1: Building Materials

Optimization of Palm Oil Fuel Ash (POFA) Content as Cement Replacement Based on Strength and Porosity A.W. Razali, N.F. Darmansah, A.A. Zaini, S.H. Ibrahim, N. Zaini, S.D. Tamjehi and G.H. Chuen	3
Use of Compressed Earth Bricks/Blocks in Load-Bearing Masonry Structural Systems: A Review L.C. Han, A.K. Bin Mirasa, I. Saad, N. Bt. Bolong, N.S.A. Bt. Asman, H. Bte Asrah and E.S.R. Bin Abdullah	9
1D Compressibility of High Moisture Content Clays Solidified with Small Cement Dosages M.M. Gubran and C.M. Chan	21
Physical, and Thermal Properties of Wood Impregnated with a Mixture of Furfuryl Alcohol, Styrene, and Nanoclay M.T. Sultan, M.R. Rahman, S. Hamdan and M.F. Hossen	29
Enhanced Strength Properties of Dredged Marine Sediments Using Electrokinetic Stabilization Method N.S. Nordin and C.M. Chan	37

Chapter 2: Polymer Composites

The Effect of Fiber Chemical Treatment on Chemical Resistance Behavior of Jute Polyethylene Composites for Storage Tank Application M.F. Hossen, S. Hamdan, M.R. Rahman and M.T. Sultan	49
Development of Nipah Palm Fibre Extraction Process T. Dickie, S.T.B.S. Syazali and N.H.B. Noor Mohamed	57

Chapter 3: Materials and Technologies for Production of Dye-Sensitized Solar Cells

Tripropyl Chitosan Iodide-Based Gel Polymer Electrolyte as Quasi Solid-State Dye Sensitized Solar Cells W.Z.N. Yahya, P.Z. Hong, W.Z.Z.W. Mohd Zain and N.M. Mohamed	69
Titanium Dioxide (TiO₂) Doped Reduced Graphene Oxide (rGO) with Different Dye for Solar Cell Application S.K. Sahari, A. Bahrin, R. Kemat, M. Kashif, N.T. Razali, Z. Ngaini, M.R. Mahmood, U. Hashim, M. Sawawi, K. Kipli, S. Rohana and N. Junaidi	77

Chapter 4: Technologies of Chemical Production and Mechanical Processing

Performance of Low Cost 3D Printed Minimum Quantity Lubrication Applicator Using Palm Oil in Milling Steel A.M.N.A. Kamaruddin, A. Yassin, S. Mohamaddan, S.A. Rajaie, M.I. Mazlan, S.J. Total and R.S. Busrah	85
<i>Turritella terebra</i> Shell Synthesized Calcium Oxide Catalyst for Biodiesel Production from Chicken Fat M.N. Mohiddin, A.S. Ahmed, A.N.R. Reddy and S. Hamdan	93
Optimization of Cryogenic Carbon Dioxide Removal from CO₂-CH₄ System by Response Surface Methodology M. Babar, M.A. Bustam, A. Ali and A.S. Maulud	103

Chapter 5: Materials and Technologies in Environmental Engineering

Adsorption of Copper (II) from Aqueous Solution Using Tea (<i>Camellia sinensis</i>) Leaf Waste H.B. Naihi	113
Study of Pollutant Degradation Coefficient in Natural Mangrove Forests A.H.A. Hanipah and Z. Guo	121
Batch Electrocoagulation Treatment of Peat Water in Sarawak with Galvanized Iron Electrodes N.A. Rahman, N.A. Tomiran and A.H. Hashim	127
Palm Oil Mill Effluent Treatment Using Electrocoagulation-Adsorption Hybrid Process Y.Y. Sia, I.A.W. Tan and M.O. Abdullah	139