

Table of Contents

Preface

Chapter 1: Materials and Technologies for Environmental Protection

An Adsorbent Based on Humic Acid-Like and Carboxymethyl Cellulose for Efficient Pollutant Removal from Synthetic Wastewater R. Basuki, B. Rusdianso, S.J. Santosa and D. Siswanta	3
Copper Oxide Coupled Titanium Dioxide (CuO/TiO₂) Nanocomposite Photocatalyst for Degradation of Methyl Orange Dye A.I.M. A'srai and M.H. Razali	13
Photodegradation of Reactive Blue 4 Using Suspension of Anatase-Titanium Dioxide and Corn Cob S.S. Bahari, Y.M. Lian, R.A. Ramli and L.S. Ling	19
Adsorption of Methylene Blue Using Tea Waste Treated with Alkaline-Potassium Hydroxide S.S. Bahari, F.N. Jahid, Y.M. Lian, R.A. Ramli and L.S. Ling	33
Synthesis and Characterization of Molecularly Imprinted Polymer with Oleic Acid as a Template S.M.A. Azhar, B.S. Muiyang, G.P. Maniam and N.A. Samah	45
Characterizing Groundwater Turbidity Reduction by Using a Magnetic Biocarbon Adsorbent Composite (MBAC): Process Optimization H. Awang, N.A. Abdullah, H.Y. Ling, I.T.J. Lin, P.S. Abdullah, S.N.H.M. Azmin and F. Boukhlifi	51
PLA Degradation and PLA-Degrading Bacteria: A Mini-Review J.C. binti Jalani and Z.I.M. Arshad	77

Chapter 2: Applied Biotechnologies of Chemical Production

Alkali Impregnation and Steam Explosion of Cogon Grass for Improved Enzymatic Saccharification J.P. Rivadeneira and F.R.P. Nayve Jr.	87
Effect of Different Supported Heteropoly Acid on the Catalytic Hydrothermal Conversion of Cellulose into Formic Acid N.L.Z.b.Z.A. @ Zaibidai Adil, A. binti Azhari, F.W. binti Harun and T.S.b.T. Saharuddin	93
Direct Energy Conversion from <i>Metroxylon sagu</i> via Multienzyme Catalysis in Enzymatic Biofuel Cell A. Jamaludin and C.K.M. Faizal	103
Chitin and Chitosan Preparation from Malaysian Black Soldier Fly Biomass: A Preliminary Study M.F. Mohd Hayati, M.H. Ab Rahman, N.S. Zulkifli, F.S. Ruslan, D.S. Darnis and S. Omar	111
Formulation of Food-Grade Grease Using Paraffin Oil, Fumed Silica, and Chitosan M.K. Nizam, M.S. Mohd Razmi, N. Mohd Ramli and M.N. Razali	121
Citric Acid Method Optimization for Pectin Extraction from Unripe 'Saba' Banana (<i>Musa acuminata</i> X <i>Musa balbisiana</i> BBB) Peels G.A.P. Alcantara, P.J.V. Gaban, J.P. Rivadeneira and K.A.T. Castillo-Israel	129
Factorial Analysis of Xylanase and Cellulase Production from Pineapple Peel Waste P. Sivanesan, Z.I.M. Arshad, J.H. Haji Shariffuddin, N. Masngut, N. Zainol and S. Md Shaarani	141
Agronomic and Proteomic Assessment of Salt Stress Responses in <i>Pennisetum glaucum</i> (Pearl Millet) Genotypes R. Somasundaram, N. Sood and A. Somasundaram	155
Preliminary Study of <i>Pleurotus ostreatus</i> (Jacq.) P. Kumm. Spent Mushroom Compost as Nutrient Supplement on the Shoot Induction of Fig Tissue Culture S.H.R. Shiekh Mahmud, S.H. Tan, W.N.H. Wan Anuar and N.L. Ma	163

Identification of Specific DNA Fragments in the Superior Mutant Plant of Rodent Tuber Accession Pekalongan (<i>Typhonium flagelliforme</i>) Based on Sequencing Analysis N.F. Sianipar, Reflinur, M.D. Ashan, K. Assidqi and R. Purnamaningsih	171
Antifungal Activity of Essential Oil Extracted from <i>Melaleuca alternifolia</i> against Pathogenic Fungi on Mango (<i>Mangifera indica</i> L.) for Mango Postharvest Application A.A.N. Gunny, J.J.A. Seminai, M.H.C. Mat, A.A. Ahmad, R. Yusof and F. Abdullah	179
Synthesis and Application of Positively Charged and Magnetically Separable Magnetite/Silica-Ammonium as an Effective Platinum(IV) Adsorbent Ngatijo, L. Marlinda, R. Bemis, Heriyanti, D.R. Gusti, A.F. Lazuardi, B. Ishartono and R. Basuki	189