

## Table of Contents

### Preface

### Chapter 1: Applied Biotechnologies

<b>Predesign of Rice Straw-Based Cellulose Plant with Steam Explosion Method</b> R.P. Anugraha, N.N.K.K. Dewi, A. Fadzlina and R. Renanto	3
<b>Fractionation of Oil Palm Fiber Using Green Solvent for Lignin Separation</b> Y. Yesika, T. Hudaya, K.A. Hawboldt, H. Rusli and J.N.M. Soetedjo	11
<b>The Study on the Effect of Acid Concentration, Temperature, and Time on the Dehydration of Xylose to Furfural in Ethanol Solvent</b> J.N.M. Soetedjo, R. Gunawan, B.C.N. Tambunan, J.C. Oey and H. Rusli	23
<b>Modeling and Simulation of Precipitation Process of Various Salt Components during Sea Salt Production</b> H. Santoso, C. Harris, J.R. Witono and K.C. Wanta	33

### Chapter 2: Biofuel Production

<b>Microfiltration Performance of <math>\alpha</math>-Alumina Membrane for Removal of Glycerol from Biodiesel</b> S.P. Kusumocahyo, N.S. Maharani and S. Yusri	45
<b>Challenges in Syngas Fermentation for Bioethanol Production: Syngas Composition</b> R. Mukti, M.T.A.P. Kresnowati and T. Setiadi	53
<b>Enhance the Growth of <i>Clostridium ljungdahlii</i> Microbial Cells by Modifying the Medium Composition and Trace Metals</b> N.A. Istiqomah, G.M. Krista, R. Mukti, M.T.A.P. Kresnowati and T. Setiadi	65
<b>Determination of Data Driven Soft Sensors in Dimethyl Ether Production by Reactive Distillation Column</b> B.H. Bisawarno, P. Ramadhany and T.G.S. Wibowo	75

### Chapter 3: Biowaste Recycling

<b>Coconut Shell Liquid Smoke Production Quality from Size and Power Using Microwave-Assisted Pyrolysis</b> S.P.A. Anggraini, Mahfud, S.R. Juliastuti and Suprapto	85
<b>Synthesis and Electrochemical Properties of ZnO/ Activated Carbon from Vetiver Distillation Waste</b> R.E. Haraki, A.A. Arie, R.F. Susanti, H.S. Oktaviano and A. Nugroho	95

### Chapter 4: Environmental Protection

<b>Optimization of Methylene Blue Ultrasound-Assisted Adsorption onto Magnetic Sugarcane Bagasse Activated Carbon Using Response Surface Methodology</b> M.F. Rizkiana, B.A. Fachri, S. Gunawan, M. Nor, I. Iswahyono, B. Palupi, I. Rahmawati and H.W. Amini	105
<b>LDPE Film Waste Treatment into Liquid Fuel Using Catalytic Cracking</b> J.N.M. Soetedjo, M. Osborn, L.A. Setiawan, F.A. Fadillah, F. Tjandradja, K.F. Mulya, E.R. Nehemia and T. Hudaya	115