

# Table of Contents

## Preface

### Drying Characteristics of *Chlorella pyrenoidosa* Using Oven and its Evaluation for Bio-Ethanol Production

Megawati, A. Damayanti, R.D.A. Putri, I.N. Pradnya, H.F. Yahya and N.K. Arnan 1

### Reduction of Surface Cracks at Al-Mg Alloy Strip Surface Cast by Unequal Diameter Twin Roll Caster

T. Haga, K. Yamazaki, H. Watari and S. Nishida 6

### Roll Casting and Die Casting of Si-Added Al-Mg Alloy

T. Haga, S. Imamura, H. Fuse, H. Watari and S. Nishida 12

### Effect of Si and Mn Addition on Fluidity, Mechanical Property and Casting Crack in Die Casting

H. Fuse, S. Imamura and T. Haga 18

### Casting of Clad Strip Consisting of Al-Sn Alloy and Pure Aluminum

T. Haga 23

### Changing from a Vertical Burr to a Horizontal Burr in the Vertical-Type High-Speed Twin-Roll Caster

T. Haga, Y. Murakami, S. Kitamura, H. Watari and S. Nishida 29

### Globular Crystals in the Center of Roll Cast Aluminum Alloy Strips

T. Haga, M. Tsuchida, H. Sakata, H. Watari and S. Nishida 34

### Effect of Alloying Elements on Mechanical Properties of High-Strength Low-Alloy Steel

N. Li, W. Kingkam, Z.M. Bao, R.H. Han, Y. Huang, H.X. Zhang and C.Z. Zhao 41

### Effect of Synthesis Conditions on the Preparation of Ag/ZnTiO<sub>3</sub> via Sol-Gel Method and its Antibacterial Properties

H.T.A. Le, T.A. Nguyen and K.P.H. Huynh 47

### Pebax 1657 Nanocomposite Membranes Incorporated with Nanoadsorbent Derived from Oil Palm Frond for CO<sub>2</sub>/CH<sub>4</sub> Separation

A.A. Ghazali, S.A. Rahman and R.A. Abu Samah 52

### Mechanochemical Synthesis of Zinc Oxide Nanoparticles and their Antibacterial Activity against Escherichia Coli

T.A. Nguyen, T.Y. Mai, T.X.M. Nguyen, K.P.H. Huynh, M.V. Le and T.A.N. Nguyen 59

### Geopolymer Synthesis Using Metakaolin and High Calcium Fly Ash as Binary System Geopolymer

T. Pantongsuk, C. Tippayasam, P. Kittisayarm, S. Nilpairach and D. Chaysuwan 65

### Synthesis of Magnetically Separable Activated Carbon from Pineapple Crown Leaf for Zinc Ion Removal

W. Astuti, T. Sulistyaningsih, D. Prastiyanto, B.S.A. Purba and R. Kusumawardani 71

### An Innovative Method of Voided Reinforced Concrete One-Way Slabs Using Bundled Waste PET Bottled Tubes

M.S. Mohammed, M.L. Ahmed, Z.M. Ali and A.S. Mahmoud 76

### The Effect of Volumetric Hydrophobization on Moisture Transfer during Hardening of Concrete

S.V. Fedosov, V.E. Rumyantseva and V.S. Konovalova 85

### Rice Husk Ash as a Cement Replacement in High Strength Sustainable Concrete

A. Ahmed, F. Hyndman, J. Kamau and H. Fitriani 90

### Effect of Temperature on Phase Angle and Dynamic Modulus of Asphalt Mixtures Using SPT

J. Ahmad, M.R. Hainin, E. Shaffie, K.A. Masri and M.A. Shaffi 99

### Non-Destructive Detection of GIS Aluminum Alloy Shell Weld Based on Oblique Incidence Full Focus Method

X.X. Wang, C. He, P. Zhao, Y. Zheng, S.H. Jiang and Y.D. Wei 105

### Mechanical Characterization of a Masonry System Made of Alkaline Activated Pozzolana Blocks

J. Salirrosas, G. Silva, S. Kim, J. Nakamatsu, B. Bertolotti and R. Aguilar 111

<b>A Study of Thermal Conductivity Property of Socks</b> W.Y. Wang, K.T. Hui, C.W. Kan, K. Visesphan, S. Areechongchareon, S. Tiyasri and R. Mongkholtattanatis	118
<b>Evaluating the Air Permeability Properties of Summer Cooling Towels</b> Y.L. Lam, W.Y. Wang, C.W. Kan, K. Manarungwit, W. Changmuong, J. Pattavanitch, W. Wongphakdee and R. Mongkholtattanatis	125
<b>Bioactive Membranes of Polymeric Micro and Nanocomposites Prepared with the Natural Anionic Marine Polysaccharide (Alginic) Functionalized with Extracts of Cat's Claw (<i>Uncaria tomentosa</i>) and <i>Aloe vera</i></b> S. Kim, M. Elgegren, A. Donayre, B. Galareta and J. Nakamatsu	131
<b>Oxidation Behavior of TiC/Mo Composites by Spark Plasma Sintering</b> Y.L. Liu, Y.Q. Zhu, X.K. Yang, Z.M. Bao, R.H. Han, H.X. Zhang and C.Z. Zhao	137
<b>Synthesis Study of Silver-Doped Zinc Oxide for Near-Infrared Shielding Applications</b> S. Kaenphakdee, S. Yodyingyong, J. Leelawattanachai, W. Triampo, N. Sanpo, J. Jitputti and D. Triampo	143
<b>Effect of Morphology on Near-Infrared Shielding Properties of Aluminum-Doped ZnO by Solvothermal Synthesis</b> P. Putthithanas, S. Yodyingyong, J. Leelawattanachai, W. Triampo, N. Sanpo, J. Jitputti and D. Triampo	148
<b>Characterization of Semi-Refined Carrageenan Reinforced with Cellulose Nanofiber Incorporated <math>\alpha</math>-Tocopherol for Active Food Packaging Applications</b> W.A. Wan Yahaya, R.N. Raja Ahmad and N.A. Mohd Azman	154
<b>Analysis of Pitting Corrosion for 2219 Aluminium Alloy under Different Corrosion Circumstances</b> Y.F. Li and S.L. Lv	160
<b>Reviews on Different Types of Rooftile BIPV: Materials Point of View</b> N. Safitri, R. Syahyadi, F. Rizal and Y. Yassir	165