

## Table of Contents

### Preface

## Chapter 1: Properties and Processing Technologies of Structural Materials

### Wear Evaluation Results from a Practical Trial of Laser-Coated Pump Parts in the Mineral Processing Industry

A. Purvee, G.C. Stehr, B. Baatar and D. Narmandakh 3

### Effect of Air Cooling on Tool Wear in Drilling CFRP

K. Kesmanee, A. Chanpariyavatevong and W. Boongsood 13

### A Numerical Study on Increasing the Cavity Temperature in Injection Molds

P.S. Minh and T.D. Thanh 19

### Strip Casting of Al-4.7%Mg with Impurity Fe Using a Single Roll Caster with a Scraper

T. Haga, K. Oida, K. Yamazaki, H. Watari and S. Nishida 25

## Chapter 2: Materials for Optoelectronics

### Luminescence Properties of Eu-Doped BaLaAlO<sub>4</sub> Phosphors for Solid State Lighting

N.O. Etafo, C.E.R. Garcia, J.O. Uc, E. Viesca-Villanueva, M.A.G. Lobato and R.C. Torres-Ramírez 35

## Chapter 3: Materials and Technologies for Environmental Engineering and Biomass Processing

### Chitosan/PVA Nanofibrous Membranes as Air Filter Material

H. Sosiati, I. Suhandra, M. Ramadhan, F.A.K. Yuda, Yusmaniar and Y. Iriani 43

### Preparation of Starch Nanocrystals with Antimicrobial Property

C.S. Emolaga, M.A. Paglicawan, U.P. Bigol, P.A.N. de Yro, J.A. Sy, B.A. Visaya and M.T.A. Bauca 53

### Potential Assessment of Combustible Municipal Wastes in Morocco and their Ability to Produce Bio-Oil by Pyrolysis

S. El Kourdy, S. Aboudaoud, S. Abderafi and A. Cheddadi 59

### Biodiesel Synthesis from Coconut Oil Using Calcined Scallop Shell Waste as the Heterogeneous Catalysts

A. Hidayat, S.S. Nadifah and A.T. Lidya 65

### Co-Pyrolysis of Disposable Mask with Sugarcane Bagasse

A. Hidayat, D. Dimas and I. Sidiq 71

## Chapter 4: Building Materials and Construction Technologies

### Evaluation of a Green Roof for Heat Mitigation in a Building Located in a City with a Hot and Humid Climate

V.C. Cardoso, G.S.S. Louro, A.A. Stroke, I.M. Assumpção, G.V. Brigagão and B.B.F. da Costa 79

### The Influence of Water Foaming and Ageing on the Properties of Bitumen 50/70

M.M. Iwański and M.V. Nemchinov 85

## Chapter 5: Research and Designing of Machines and Mechanisms

### Vibrational Analysis of Mini - Unmanned Aerial Vehicles due to Gun Recoil

N.R. Nelson and P.M. Siva 93

**Artificial Intelligence Predictions Effect of Loading Rate, Crack Width and Crack Length Ratio on Mode I Fracture Toughness of PMMA**

A. Wiangkham, P. Aengchuan and A. Ariyarit

99