

# Table of Contents

## Preface, Committees and Sponsors

## Chapter 1: Materials Engineering

<b>Ageing Characteristics of Equal Channel Angular Pressed Al-Mg-Si Alloy</b> S.V. Yee, Z. Hussain, A.S. Anasyida, M. Syukron and I.P. Almanar	3
<b>Bone Marrow Cell Response on Carbonate Apatite/PCL-Coated <math>\alpha</math>-Tricalcium Phosphate Foam</b> T.B. Le, X.L. Shi, I. Kunio and R. Othman	7
<b>Characterization Copper (II) Chloride Modified Montmorillonite filled PLA Nanocomposites</b> A.H. Abdullah, K. Yusoh, M.F.M. Yatim, S.A.N. Effendi and W.S.N.W. Kamaruzaman	13
<b>Comparison of Friction Stir and Tungsten Inert Gas Weldments of AA6061-T6</b> M.R. Shaari, Z. Hussain, I.P. Almanar and N. Van Thuong	19
<b>Comparison of Mechanical Properties and Curing Characteristics of Natural Rubber Composites with Different Coupling Agents</b> M. Lay, A.A. Rashid, N. Othman, Y. Tezuka and C. Pen	24
<b>Comparison on the Properties of Glass Fiber/MWCNT/Epoxy and Carbon Fiber/MWCNT/Epoxy Composites</b> W.A.D. Wan Dalina, M. Mariatti, R. Ramlee, Z.A.M. Ishak and A.R. Mohamed	32
<b>Decolourization of Simulated Dye Wastewater Containing Reactive Blue 19 (RB19) by the Electro-Fenton Reaction in the Presence of Metal Oxide-Coated Electrodes</b> M.T. Shwe, M.M. Dimaculangan and M.D.G. De Luna	40
<b>Effect of Cleaning Agent on Tensile and Swelling Properties of Natural Rubber Latex Film</b> M. Md Sidek, A.R. Azura and B. Azahari	46
<b>Effect of Solid Concentration on Properties of Porous Alumina</b> D. Chhor, S.R. Kasim, A.F. Mohd Noor, M. Nareth and E. Sakai	52
<b>Effect of the Sponge Used as the Template for the Production of Porous Cordierite</b> M. Hasmaliza, M. Siti Naqiah and I. Norfadhilah	56
<b>Effect of Synthesis Parameters on Size of the Biodegradable Poly (L-Lactide) (PLLA) Microspheres</b> A.A. Hawari, C.Y. Tham and Z.A.A. Hamid	60
<b>Effect of Zinc Nitrate Concentration on Formation of AuNPs by Sacrificial Templated Growth Hydrothermal Approach and its Properties in Organic Memory Device</b> S.A. Ng, L.P. Goh, K.A. Razak, K.Y. Cheong, P.C. Ooi and K.C. Aw	67
<b>Effects of <math>\text{SiO}_2</math> Nanoparticles on Dielectric Characteristic of Aloe Vera Paste</b> L.Q. Khor and K.Y. Cheong	74
<b>Electrical Properties of LLDPE/SR with Nano-Silica and Nanoboron Nitride</b> I.N. Hidayah, M. Mariatti, I. Hanafi and M. Kamarol	80
<b>Granite Waste as a Raw Material in Ceramic Body Formulations</b> P. Nordala, M. Hasmaliza, T. Hirajima and R. Othman	88
<b>Improvement of Compressive Properties of Porous HA Scaffold by Introducing PCL Secondary Phase</b> P. Yos and M. Todo	96
<b>Iron-Free Hydroxyapatite Powder from Synthetic <math>\text{Ca(OH)}_2</math> and Commercialized <math>\text{Ca(OH)}_2</math></b> P.T. Kien, M.Q. Do and P.T.L. Thanh	103
<b>Microstructural Study of Hypereutectic Al-15%Si Containing Ce</b> A.S. Anasyida, Z. Hussain, R. Md. Nasir and S.L. Joy-Yii	111
<b>Microstructural Study of Sn-3.0Ag0.5Cu Alloy on Cu/NiP-Coated Substrate by Addition of Fe, Sb and Ce</b> A.S. Anasyida, M.S. Nurulakmal, M. Yusoff and C.L. Teh	116
<b>Organic and Inorganic Acid Activation of Activated Carbon Fiber from Palm Oil Empty Fruit Bunch</b> W.K. Cheah, R. Othman and F.Y. Yeoh	122

<b>Porous Ceramic Bodies Using Banana Stem Waste as a Pore-Forming Agent</b>	131
K. Sengphet, T. Sato, M.N.A. Fauzi and R. Othman	
<b>Porous Cordierite Synthesized Using Corn Starch</b>	137
M. Hasmaliza, Y.M. Lim and I. Norfadhilah	
<b>Properties of Lanthanum-Doped Bismuth Sodium Titanate (<math>\text{Bi}_{0.5}\text{Na}_{0.5}\text{TiO}_3</math>) Prepared by Soft Combustion Technique</b>	141
M.L. Cheah, K.A. Razak and C.Y. Ng	
<b>Second-Order Nonlinear Optical Response of Metal Nanostructures</b>	147
K. Locharoenrat	
<b>Structural and Optical Properties of Fe-Doped ZnO Nanorods</b>	151
S.N.Q.A. Abd Aziz, S.Y. Pung, Z. Lockman and N.A. Hamzah	
<b>Synthesis <i>In Situ</i> Composite TiAl-Based with Particulate <math>\text{Al}_2\text{O}_3</math> Reinforcement by Powder Metallurgy Route</b>	159
T.D. Huy, N.H. Hai and K.N. Ishihihara	
<b>Synthesis of Porous Silica via Styrene Natural Rubber Template: The Effect of Calcination</b>	164
Y. Siti Nurfatihah, A.B. Ben Alwi, A.R. Azura and A. Zulkifli	
<b>Temperature Dependent Current-Voltage Characteristics of n-Type Nanocrystalline-<math>\text{FeSi}_2</math>/p-Type Si Heterojunctions Fabricated by Pulsed Laser Deposition</b>	171
N. Promros, R. Iwasaki, S. Funasaki, K. Yamashita, C. Li and T. Yoshitake	
<b>The Effect of <math>\text{FeSO}_4</math> Containing Solution on Microbiological Influenced Corrosion by Desulfovibrio Baculatus Bacteria on API 5L X65 Steel</b>	177
B. Widianto and A. Tambun	
<b>The Effect of Pre-Vulcanization Temperature on Mechanical and Rheological Properties of Starch Filled Natural Rubber Latex Compounds</b>	184
S.R. Yahya, F.N. Hamdan, A.A. Rashid and B. Azahari	
<b>The Effect of Surfactant Extraction Method on Pore Characteristics of Mesoporous Carbonated Hydroxyapatite</b>	190
N.F. Mohammad, R. Othman and F.Y. Yeoh	
<b>The Effect of Wollastonite on Curing Characteristics, Tensile and Morphology of Natural Rubber Compounds</b>	199
H.T.B. Diep, I. Hanafi, A.R. Azura, N. Van Tu and T. Takeichi	
<b>Use of Rice Straw Ash in Enhancing the Properties of Soda-Lime-Silica Glass-Ceramics</b>	205
R. Othman and F. Jaafar	
<b>Viscosity Effect on the Reinforcement Properties of Silica Filled ENR Rubber Compound</b>	212
M.M. Kamal, Z.Z. Teku and K.C.A. Ahmad	

## Chapter 2: Mineral Resources Engineering

<b>An Assessment of the Carbothermal Reduction of Malaysian Ilmenite by Statistical Design</b>	221
H.S. Saidin, S.A.S. Salim, N. Baharun, S.A. Rezan and H. Hashim	
<b>Assessment of EAF Steel Slag Solubility by Statistical Design</b>	228
K.B. Lateef, S.A. Rezan and M.S. Nurulakmal	
<b>Case Study of Alluvial Gold Mining at Pulai Mining in Gua Musang, Kelantan, Malaysia</b>	236
E.K. Eam, S.F.S. Hashim, M.H. Mohd Hashim and M.T. Mohd Yusof	
<b>Characterization and Gold Assaying Methods in the Assessment of Low Grade Gold Ore from Malaysia</b>	243
N. Baharun and P.L. Ong	
<b>Comparison of Silica Sand Properties from Kandal Province, Cambodia and Tapah, Perak, Malaysia and Characterization of Soda Lime Silicate Glass Produced From Cambodian Silica Sand</b>	248
E. Sereiratana, K.A. Bharum, S.A. Rezan, R. Othman, F. Takahashi and P. Boné	
<b>Glass Sand Processing Techniques in the Rayong Area, Thailand</b>	254
S. Saisinchai	
<b>Microstructural Study of Reduced Malaysian Ilmenite by Carbothermal Reduction and Nitridation in Nitrogen Atmosphere</b>	265
A.S.S. Sharifah, H.S. Saidin, N. Baharun, S.A. Rezan and H. Hashim	
<b>Modelling and Simulation of Air Classification in Cement Manufacturing</b>	272
K.E.H. Ku Ishak and S.F. Saiyid Hashim	

**The Mineralogy of the Copper – Gold Ore Deposits at the Phu Kham, Mine, Laos**

V. Soysouvanh, K.S. Ariffin, K. Watanabe and N. Visane

283