

Table of Contents

Message from Guest Editors and Conference Committees

Growth of Nanocrystalline PbS Thin Films by Solid-Vapor Deposition

A.S. Obaid, M.A. Mahdi and H. Zainuriah 1

Preparation of $\text{Co}_{0.5}\text{Zn}_{0.5}\text{Fe}_2\text{O}_4$ and $\text{Co}_{0.5}\text{Mn}_{0.5}\text{Fe}_2\text{O}_4$ Nanoferrites by Co-Precipitation Method

A. Javidan, M.H. Hosseini and S.L. Shaifi 7

The Effect of CaCO_3 Addition on Physical Properties of ZnO -Based Crystal Glaze

A.R. Jamaludin, S.R. Kasim and Z.A. Ahmad 12

Surface Morphology and Si 2p Binding Energy Investigation of Multilayer Porous Silicon Nanostructure

A.A.S. Mohd Radzi, M.A. Yarmo, M. Rusop and S. Abdullah 17

Compositional and Structural Characterization of Heterostructure InGaN-Based Light-Emitting Diode by High Resolution X-Ray Diffraction

A.H. Ali, A.S. Abu Bakar, H. Zainuriah and Y. Yusof 22

Determination of Crystallite Size in Synthetic and Natural Hydroxyapatite: A Comparison between XRD and TEM Results

S. Rahavi, A. Monshi, R. Emadi, A. Doostmohammadi and H. Akbarian 28

The Effects of Cr_2O_3 Addition on Fracture Toughness and Phases of ZTA Ceramic Composite

A.Z.A. Azhar, N.A. Rejab, H. Mohamad, M.M. Ratnam and Z.A. Ahmad 35

Photoluminescence Properties of Porous Silicon Nanostructures (PSiNs) with Optimum Electrolyte Volume Ratio of Photo-Electrochemical Anodization

M.A. Zubaidah, N.A. Asli, S.F.M. Yusop, M. Rusop and S. Abdullah 40

Structural and Surface Studies of Undoped Porous GaN Grown on Sapphire

M. Ainorkhilah, H. Zainuriah, Y. Yusof, F.K. Yam, L.S. Chuah and M.A. Naser 45

Characterisation of Phases and Lattice Parameter in Eutectic and Hypoeutectic Al-Si-Mg-Ce Cast Alloy

A.S. Anasyida, Z. Hussain, A.R. Daud and M.J. Ghazali 50

Structural and Thermoelectric Properties of $\text{Bi}_{0.4}\text{Sb}_{1.6}\text{Se}_{3x}\text{Te}_{3(1-x)}$ Quaternary Compound

A. Kadhim, A. Hmood and A.H. Haslan 55

Influence of Substrate's Alignment Strategy to the Growth of ZnO Nano-Petals via Solution-Immersion Method

A. Ab Aziz, Z. Khusaimi and M. Rusop 60

Crystallization of Potassium Calcium Silicate from Modified Industrial EAF Slag

K.B. Lateef, S.A.R.S. Abdul Hamid and M.S. Nurulakmal 66

Identification of Mixed-Layer Mineral of Cambodian Clays and their Phase Changes upon Firing

B.K. Ngun, H. Mohamad, K. Okada, P. Bone and Z.A. Ahmad 72

Effect of Microstructural Evolution on the Properties of Friction Stir Processed Al 6061 Alloy under Different Cooling Conditions

H.S. Arora, H. Singh, B.K. Dhindaw and H.S. Grewal 77

Crystal Structure Optimization and Semi-Empirical Quantum Chemical Calculations of N-(3,4-Dichlorophenyl)-3-Oxo-Butanamide

M.M. Jotani 82

Properties of Mortar Containing Rice Husk Ash at Different Temperature and Exposed to Aggressive Environment

R.P. Jaya, M.A.A.M. Nor, Z.A. Ahmad and Z.M. Amin 87

Mechanical Alloying of Fe-Nb-N with Different Ball to Powder Weight Ratio for the Formation of Fe-NbC Composite

S.Z.M. Rasib and Z. Hussain 94

XRD Analysis and Tensile Properties of Attapulgite Clay Filled Polyvinyl Alcohol/Corn Starch Blend Films

F.M.M. Suki, N.A. Azahari, N. Othman and I. Hanafi 99

Intermetallic Compound Formation on Solder Alloy/Cu-Substrate Interface Using Lead-Free Sn-0.7Cu/Recycled-Aluminum Composite Solder	105
F. Somidin, M.A.A. Mohd Salleh and K.R. Ahmad	
The Effect of Amount of Surfactant and Types of Drug on Amorphous Silica Drug Delivery System (DDS)	112
A.A.W. Hajarul, A.R. Khairunisak, D.Z. Nor and A.A. Azlan	
Friction Stir Processing of Mild Steel to Enhance its Surface Hardness	117
H.S. Grewal, H. Singh, A. Agrawal and H.S. Arora	
Gel Oxidation of Titanium for Biomedical Application	122
H.Z. Abdullah, P. Koshy and C.C. Sorrell	
Production of Porous Cordierite through Sol-Gel Polymeric Sponge Method	127
H. Mohamad, M. Siti Naqiah, R.J. Shafinaz and I. Norfadhilah	
Growth of ZnO Nanostructures at Different Temperatures without Catalyst by Wet Thermal Oxidation Process	132
H.I. Abdulgafour, Y. Yusof, F.K. Yam and H. Zainuriah	
The Influence of Temperature on the Oxide Layer Formation of Aluminized Carbon Steel	137
H.H.J. Husain, A.R. Daud, M. Daud, A.S. Anasyida and H. Yazid	
Intermetallic Evolution of Sn-3.5Ag-1.0Cu-0.1Zn/Cu Interface under Thermal Aging	142
I. Yahya, N.A. Ab Ghani, N.N.Z. Abiddin, H. Abd Hamid and R. Mayappan	
WO₃-Polypyrrole Nanocomposite as Catalyst in Azelaic Acid Synthesis from Oleic Acid	147
K.B. Ghoreishi and M.A. Yarmo	
P-Incorporated TiO₂ Nanotubes for Methyl Orange Degradation	151
K.A. Saharudin and S. Sreekantan	
The Effects of Combustion Agents on the Formation of Bi-Based Compounds Synthesized Using the Soft Combustion Method	156
K.A. Razak, M.A. Anuar and C.Y. Ng	
Study on the Influence of Synthesis Temperature of Anatase TiO₂ Nanoparticles for Electrophoretic Deposition	161
K.A. Yaacob and J.D. Riley	
XRD Analysis of Cu-Al Interconnect Intermetallic Compound in an Annealed Micro-Chip	166
K.Y. Chua, M.T. Hng, C.C. Lee and T.J.S. Anand	
Discovery of WO₃/TiO₂ Nanostructure Transformation by Controlling Content of NH₄F to Enhance Photoelectrochemical Response	173
C.W. Lai and S. Sreekantan	
XRD and EDXRF Analysis of Anatase Nano-TiO₂ Synthesized from Mineral Precursors	179
E.M. Mahdi, M.H. Abdul Shukor, M.S. Meor Yusoff and P. Wilfred	
X-Ray Diffraction Study of High Velocity Oxy-Fuel (HVOF) Sprayed Cr₃C₂-NiCr Coating	186
M. Kaur, H. Singh and S. Prakash	
A Simple Method to Prepare Indium Oxide Nanoparticles on Si (110)	193
M. Amirhoseiny, H. Zainuriah and S.S. Ng	
The Effect of Stoichiometry to the Phase Formation of Barium Titanate	198
M.A. Faris, Y.C. Keat, W.M. Arif, P.L. Teh and N. Abdullah	
Heterogeneous Combustion of Ti/Si/C Powders with Estimated Ti₃SiC₂ Routes Morphologies	203
M.J. bin Abu, J.J. Mohamed and Z.A. Ahmad	
Thermal, Electrical and Physical Properties of Recycled Copper Filled Epoxy Composites	208
M.N.F. Pargi, P.L. Teh, S. Husseinsyah and Y.C. Keat	
X-Ray and Morphological Characterization of Al-O Thin Films Used for Vertically Aligned Single-Walled Carbon Nanotube Growth	213
M.A. Azam, M.W. Abd Rashid, K. Isomura, A. Fujiwara and T. Shimoda	
The Effect of MgO Dopant on the Dielectric Properties of CaCu₃Ti₄O₁₂ Ceramics	219
M.F. Ab Rahman, J.J. Mohamed, M.F. Ain and S.D. Hutagalung	
Characterization of Potential Used Rubber Seed Coat Waste for the Removal of Remazol Brilliant Blue R Reactive Dye	224
M.N. Idris, Z.A. Ahmad and M.A. Ahmad	
Investigation of Grain Size Effect on the Impedance of CaCu₃Ti₄O₁₂ from 100 Hz to 1 GHz of Frequency	230
M.A. Sulaiman, S.D. Hutagalung, Z.A. Ahmad and M.F. Ain	

Hybrid Multiwalled Carbon Nanotubes/Minerals as Potential Fillers for Polymer Composites	236
M.H.A. Kudus, M.A. Hazizan and S.S.M. Saleh	
Structural and Optical Properties of Nanocrystalline CdO Thin Film Growth by Solid-Vapor Deposition	241
M. Zaien, N.M. Ahmed and H. Zainuriah	
Investigation into the Metal Oxide Surge Arrestors' Failures	246
N.G. Peng, N.R.N. Khan, M.N. Harun and B. Ahmad	
Structural and Microstructure Relationship with Fracture Toughness of CeO₂ Addition into Zirconia Toughened Alumina (ZTA) Ceramic Composites	252
N.A. Rejab, A.Z.A. Azhar, M. Ratnam and Z.A. Ahmad	
X-Ray Diffraction Study of Cold Sprayed Ni-20Cr and Ni-50Cr Coatings on Boiler	257
N. Bala, H. Singh and S. Prakash	
Microstructure Evolution of Sn-3.5Ag-1.0Cu-0.5Ni/Cu System Lead Free Solder under Long Term Thermal Aging	263
N.A. Ab Ghani, I. Yahya, M.A.A. Mohd Salleh, S. Shamsuddin, Z.A. Ahmad and R. Mayappan	
Iron Salt Concentration Effect to the Precipitation of Iron Oxide Nanoparticles Conjugated Antibody	268
M.N. Noorhashimah, A.R. Khairunisak, A. Abdul Aziz and R. Noordin	
Morphology and Intermetallics Study of (Sn-8Zn-3Bi)-1Ag Solder under Liquid-State Aging	273
N.A. Jasli, H. Abd Hamid and R. Mayappan	
Synthesis, Characterisation and Catalytic Activity of Sol-Gel Derived Silica-Mineral Acids	278
N.A.M. Nordin, N. Hamzah, N.F. Adnan, W.N.R. Wan Isahak, M.Z.M. Yusof, J. Salimon and M.A. Yarmo	
Luminescence of SrAl₂O₄:Eu²⁺, Dy³⁺ Ceramics Synthesized at Different Firing Condition	284
A.N. Nazida, M.N.A. Fauzi, M. Nazarov, A. Azizan and K.S. Rizal	
Study on Effect Recyclability of Ru/Bentonite-TiO₂ Catalysts in Glycerol Hydrogenolysis Reaction Using X-Ray Photoelectron Spectroscopy (XPS)	289
N. Hamzah, N.A.M. Nordin, W.N.R. Wan Isahak, M.B. Kassim and M.A. Yarmo	
Phase Formation of α-Cordierite Using Different Sintering Profile	295
I. Norfadhilah, H. Mohamad and Z.A. Ahmad	
Preparation of Cellulose Microfibrils from Banana (<i>Musa acuminata</i>) Pseudo-Stem Waste	299
N.B. Azraie, F. Abdul Aziz and R. Shahidan	
Formation of Titanium Silicon Carbide (Ti₃SiC₂) via Modified Self-Propagating High Temperature Synthesis (SHS) System through Arc Melting	304
N. Mazuki, J.J. Mohamed and Z.A. Ahmad	
Effect of Ball-Milling Parameter on the Synthesis of MWCNT/Alumina Hybrid Compound	309
N. Nosbi and M.A. Hazizan	
Preliminary Preparation and Characterization Studies of Cellulose from Merbau (<i>Intsia bijuga</i>)	314
N.A. Mamat Razali, F. Abdul Aziz and S.A. Rahman	
Synthesis and Growth Mechanism of Catalyst-Free ZnO Nanowires Using Chemical Vapour Deposition	320
N.A.B. Hamzah, S.Y. Pung, S. Sreekantan and S.N.Q.A.B.A. Aziz	
Studies of Cell Growth on TiO₂ Nanotubes	325
N.H. Ahmad Barudin, S. Sreekantan, O.M. Thong and L.K. Lay	
X-Ray Spectrometry Study on Historical Decorative Glasses in Thailand: Lanna-Style Glass	330
P. Dararutana, K. Won-In, S. Intarasiri, T. Kamwanna, S. Tancharakorn, N. Sirikulrat and C.A. Hauzenberger	
Production of Biodiesel from Non-Edible <i>Jatropha curcas</i> Oil via Transesterification Using Nd₂O₃-La₂O₃ Catalyst	335
M.F. Rabiah Nizah, Y.H. Taufiq-Yap and M.Z. Hussein	
X-Ray Diffraction Studies of Cd_xZn_{1-x}S Thin Films Prepared by Spray Pyrolysis Technique	340
Y. Raviprakash, K.V. Bangera and G.K. Shivakumar	
Influence of Silica and Zirconia Particles as Filler Loading on the Radiopacity of Dental Resin Composites	345
S.O. Alsharif, M.A. Hazizan, N.A.A. El-Aziz and Z.A. Ahmad	

Synthesis and Gas Sensing Properties of SnO₂ Nanostructures by Thermal Evaporation W.N. Wan Mustapha, S.A.R.S. Abdul Hamid, S.D. Hutagalung, N.V. Hieu, K. Mohamed and C.K. You	350
Formation of Well Aligned ZnO Nanorods Grown on Silicon Substrate by Chemical Bath Deposition Method N. Zakaria, H. Nainggolan and S.D. Hutagalung	356
Compressive and Wear Resistance of Alumina Reinforced Fe-Cr Matrix Composites S. Shamsuddin, S.B. Jamaludin, Z. Hussain and Z.A. Ahmad	362
Structural and Optical Properties of In_{0.27}Ga_{0.73}N/Si (111) Film Grown Using PA-MBE Technique S.H. Abud, H. Zainuriah, F.K. Yam and A.J. Ghazai	368
Preparation and Characterization of Biphasic Calcium Phosphate Coatings on 316L Stainless Steel Fabricated by Electrophoretic Deposition A.M.A. Abudalazez, S.R. Kasim, A.B. Ariffin and Z.A. Ahmad	373
Tin Oxide Doped on Activated Dolomites as Efficient Catalyst for Biodiesel Production Z.A.S. Nur, Y.H. Taufiq-Yap and M.Z. Hussein	378
Effect of Nickel on Titanium Carbide Synthesized via Tungsten Inert Gas (TIG) Method S.A.S. Salim, J.J. Mohamed, Z.A. Ahmad and Z.A. Ahmad	384
Porous Ceramic Supports Prepared from Porcelain Mixture M.S. Sharmiwati, Z.A. Ahmad and M.R. Othman	389
Preparations and Characterization of Sago Starch Dispersion and Modification S.R. Yahya, A.R. Azura and B. Azahari	395
Synthesis and Characterization of MWCNT/Dolomite Hybrid Compound as Potential Composite Fillers S.S. Mohd Saleh, M.A. Hazizan and M.H. Abdul Kudus	400
Bamboo Sawdust as a Reduction Agent in Leaching Applications: Characterization Studies S. Ismail, N.S. Abdullah, H. Hussin and S.F. Saiyid Hashim	405
Crystallization of TiO₂ Nanotubes Arrays Grown by Anodization of Ti in Organic Electrolyte S. Ismail, Z. Lockman and Z.A. Ahmad	412
Computational Studies of Electronic Structures and Hyperfine Interactions of Muonium in Tetraphenylgermane P.L. Toh, S. Sulaiman and M.I. Mohamed-Ibrahim	418
Role of NbC Grain Growth Inhibitor on Microstructure and Hardness of WC-Stainless Steel Hard Metals T.B. Trung, Z. Hussain, Z.A. Ahmad and K.N. Ishihara	424
Single Step Combustion Synthesis for the Preparation of Bismuth Titanate Ceramics for Potential Applications U.A. Azlan, S. Sreekantan, A.F. Mohd Noor and K.A. Razak	429
Synthesis and Characterization of Ba_{0.3}Sr_{0.7}ZrO₃ Ceramic Thick Films Prepared by Sol-Gel Technique W.F.F. Wan Ali, M.A. Othman, N.A. Rejab, M.Z. Abdullah, A. Marzuki, S.D. Hutagalung, J.J. Mohamed, M.F. Ain, N.S. Abdullah and Z.A. Ahmad	435
Oxidative Degradation Monitoring of Natural Rubber Using S K-Edge X-Ray Absorption near-Edge Spectroscopy (XANES) W. Taweeprada, W. Limphirat and P. Songsiriritthigul	440
Mesoporous Silica Sol-Gel as Catalyst for the Synthesis of Alkylpolyglucosides I.A. Amin, M.A. Yarmo, N.I. Nik Yusoff, M.Z. Yusoff and A. Ayatollah	446
Electrical and Optical Characterization of Mg Doping in GaN E. Azimah, N. Zainal, H. Zainuriah, A.S. Abu Bakar and A. Bahrin	453
Preliminary Evaluation of Mukah Clay Deposits H. Selvi, J. Bujang and Z.A. Ahmad	458
Fabrication of Nanoporous Aluminum Oxide via a Two-Step Anodisation Process N.U. Saidin, K.K. Ying, I.K. Ng and S.H. Ilias	464
Fundamental Characterisation of Dredged Marine Sediments from Kuala Perlis Jetty by XRF, XRD and FTIR N. Ramli, M.H. Haji Jumali and W.S. Wan Salim	469

Properties of Aluminium Thin Films on Polyimide Plastics as Back Contacts in Thin Film Silicon Solar Cells	474
M.Z. Pakhuruddin, K. Ibrahim and A. Abdul Aziz	
Quantitative Energy Dispersive X-Ray Flourescence Analysis of Low Alloy Steel by Regression and Modified Fundamental Parameter Techniques	480
M.Y. Meor Sulaiman, M. Muslimin and P. Wilfred	
Pb(Zr_{0.52}Ti_{0.48})O₃ Ceramics Synthesized Using Planetary Ball Mill	486
S.A. Sharif, J.J. Mohamed and W.A.W. Yusoff	
Dehydration Studies of Biomass Resources for Activated Carbon Production Using BET and XRD Techniques	491
W.N.R. Wan Isahak, N. Hamzah, N.A.M. Nordin, M.W. Mohamed Hisham and M.A. Yarmo	
Modeling Microfibril Angle and Tree Age in <i>Acacia mangium</i> Wood Using X-Ray Technique	496
T.A. Tamer, F. Abdul Aziz and N. Abdulla	
Characteristics of Airborne Pm_{2.5} and Pm_{2.5-10} in the Urban Environment of Kuala Lumpur	502
Y.Y. Sara, M. Rashid, T.G. Chuah, M. Suhaimi and N.N. Mohamed	
The Effects of Superheating Treatment on Distribution of Eutectic Silicon Particles in A357-Continuous Stainless Steel Composite	511
M. Mohd Noor and S.B. Jamaludin	