

Table of Contents

Preface, Organizing Committee and Sponsors

Chapter 1: Nanomaterials Synthesis and Characterization

Properties of ZnO Rod-Like Structures Due to Collapse of Bubble Implosion Process M.D. Johan Ooi, A.A. Aziz and M.J. Abdullah	3
Kinetics Transformation of Anatase to Rutile Phase for Titanium Dioxide Nanoparticles Prepared by Sol-Gel Method M.M. Ba-Abbad, A.A.H. Kadhum, A.B. Mohamad, M.S. Takriff, K. Sopian and S.S. Al-Shamali	11
Ex Situ Doping of ZnO Nanorods by Spray Pyrolysis Technique S.N. Qurratu Aini Abd Aziz, S.Y. Pung, Z. Lockman, N.A. Hamzah and Y.L. Chan	16
Effect of CVD Synthesis Parameters on the Growth of Catalyst-Free ZnO NRs N.A. Hamzah, S.Y. Pung, S. Sreekantan and S.N. Qurratu Aini Abd Aziz	24
Synthesis of Titania Nanowires From Local Synthetic Rutiles M. Muslimin, M.S. Meor Yusoff and S.P. Wilfred	31
Preparation and Characterization of TiO₂ Nanowire - Cu₂O Nanocube Composite Thin Film F.Y. Naumar, A.A. Umar, M.Y.A. Rahman, M.M. Salleh, M.I.A. Umar, S. Nafisah, S.K.M. Saad and S.T. Tan	37
Synthesis and Characterization of Nano-Wollastonite from Rice Husk Ash and Limestone H. Ismail, R. Shamsudin, M.A.A. Hamid and A. Jalar	43
Synthesis and Characterization of Grape-Like SnO₂ Structures Grown by a Thermal Evaporation Method K.K. Lim, M.A.A. Hamid, R. Shamsudin, A. Jalar and N.H. Al-Hardan	48
A Study of Properties of the Nanocrystalline CdO Thin Film Prepared by Solid-Vapor Deposition Method M. Zaien, N.M. Ahmed and H. Zainuriah	54
Free Catalyst Synthesis of GaN Nanostructures on Si-Substrate via CVD Q.N. Abdullah, F.K. Yam, H. Zainuriah and M. Bououdina	59
Preparation and Thermal Stability Characterization of Copper Tin Selenide Semiconductor Nanoparticles J. Ying Chyi Liew, Z.A. Talib, M.Y. Wan Mahmood and Z. Zainal	66
Sonochemical Synthesis of Silica Coated Super Paramagnetic Iron Oxide Nanoparticles B.K. Sodipo and A. Abdul Aziz	74
Effect of Selenium on Structure and Electrical Property for Bi_{0.4}Sb_{1.6}Se_{3x}Te_{3(1-x)} Novel Hexagonal Rods A. Kadhim, A. Hmood and A.H. Haslan	80
Synthesis of CdS Nanoparticles via AOT-Water-<i>n</i>-Heptane Microemulsion Technique R. Zulkafli, N.K. Othman, M.A.A. Hamid and A. Jalar	85
Annealing Effects on the Physical and Magnetic Properties of Tb_{1.5}Y_{1.5}Fe₅O₁₂ Films Nanoparticles Prepared by Sol-Gel Method F.W. Aldbea, N.B. Ibrahim and M.H. Abdullah	91
Facile Synthesis of Silver Nanoparticles by Chemical Reduction Route R. Ratnamalar, M. Mariatti, Z. Ahmad and S.Z. Sharif Hussein	99
Green Synthesis of Silver Nanoparticles Using Aqueous Floral Extract of <i>Nelumbo Nucifera</i> S. Arokiyaraj, U.P. Nyayiru Kannaian, V. Elakky, T. Kamala, S. Bhuvaneswari and K.V. Dinesh	106
Synthesis and Characterization of Gold Nanoplates onto Solid Substrates by Seed-Mediated Growth Method Iwantono, A.A. Umar, E. Taer and V. Asyana	112
Epoxidized Natural Rubber-Organommodified Montmorillonite Nanohybrids; Interaction and Thermal Decomposition A. Salehabadi and A.B. Mohamad	119

The Effect of Zinc to Aluminium Molar Ratio on the Physico-Chemical Properties of Zinc-Aluminium-3,4-Dichlorophenoxy Acetate Nanocomposite S.A.I.S.M. Ghazali, M.Z. Hussein and S.H. Sarijo	127
A Comparative Study on the Effect of Adiabatic Extrusion by Twin-Screw Extruder to the Crystallization Pattern and Thermal Behavior of Polyamide 6/C20A Nanocomposites Z. Ismail and K. Yusoh	135
Study of the Etching Processes of Si [1 0 0] Wafer Using Ultra Low Frequency Plasma A.R. Galaly, F.F. Elakshar and M.A. Khedr	143
Effect of Nanoindentation Loading Rate on Gold Ball Bond M.N. Zulkifli, A. Jalar and S. Abdullah	151
Optimization of the Production of Aligned CNTs Array as the Gas Sensing Element M.S. Mohamed Saheed, M.M. Norani and Z.A. Burhanudin	156

Chapter 2: Nanomaterials for Energy, Catalyst and Devices

Photocatalytic Degradation of Rhodamine B Using MnO₂ and ZnO Nanoparticles Y.L. Chan, S.Y. Pung, N.S. Hussain, S. Sreekantan and F.Y. Yeoh	167
Fabrication of Ca(OH)₂ Nanostructures by Facile Solution – Based Synthesis at Various Reaction Temperatures as CO₂ Adsorbent F.D. Mohd Daud, S. Sreekantan and A.R. Mohamed	175
Effects of Reaction Temperature on CO₂ Reforming of CH₄ over Multi-Walled Carbon Nanotubes Catalyst with Co-Mo-MgO Nanoparticles M. Khavarian and A.R. Mohamed	182
Graded Multilayered TiO₂ Photoelectrode for Improving the Performance of Dye Solar Cells A.E. Samsudin and M.M. Norani	190
Solvent Controlled Synthesis of Tin Oxide Nanocatalysts and their Applications in Photodegradation of Environmental Hazardous Materials I. Muneer, M.A. Farrukh, S. Shaghraf, M. Khaleeq-Ur-Rahman, A.A. Umar and R. Adnan	197
Elucidating the Dependence of Size and Concentration of Gold Nanoparticles in Cellular Uptake N.S. binti Rosli, A.A. Rahman and A. Abdul Aziz	205
The Effect of Cu Concentration on TiO₂ Nanotubes for Low Concentration of Pb(II) Removal S.M. Zaki and S. Sreekantan	212
Stability of WO₃/CuO Heterojunction Photoelectrodes in PEC System K.H. Ng, H.A. Kadir, L.J. Minggu and M.B. Kassim	219
Nanofibers - A Simple and Practical Way Forward for Air Pollution Abatement N. Shahzad and Q. Chen	225
Molybdenum Complex as Potential Photosensitiser for Direct Water Splitting M.L. Wun Fui, L.K. Pui, L.Y. Heng and M.B. Kassim	231
Antibacterial Activity of Ag-TiO₂ Nanoparticles with Various Silver Contents N.H. Ahmad Barudin, S. Sreekantan, O.M. Thong and G. Sahgal	238
Absorption Characteristics of Ruthenium (Ru)-II Nanoparticles as a Dissolved Oxygen Sensing Material A. Farahiyah, P.S. Menon, S. Shaari, S. Saharudin and M.S. Abdullah	246
Synthesis, Structural and Sensor Characterization of Ga-ZnO Nanodisk/Nanorods Prepared by One Step Polymer Assisted Hydrothermal Process on AlN/Si Substrate R.J. Ramalingam and G. Dinesh	251
Fabrication and Characterization of Pb_{1-x}Yb_xSe_{0.2}Te_{0.8} Based Alloy Thin Films Thermoelectric Generators Grown Using Thermal Evaporation Method A. Hmood, A. Kadhim and A.H. Haslan	259
The Performance of Nanosilicate from Rice Husk Ash as Green Corrosion Inhibitor for Carbon Steel in 0.5M HCl D. Asra Awizar, N.K. Othman, A.R. Daud, A. Jalar and R. Zulkafli	266
CuZnSnSe Thin Film Electrodes Prepared by Vacuum Evaporation: Enhancement of Surface Morphology and Photoelectrochemical Characteristics by Argon Gas N. Sabli, Z.A. Talib, M.Y. Wan Mahmood, Z. Zainal, H.S. Hilal and M. Fujii	273

Enhancement of Poly(9,9'-di-n-octylfluorenyl-2,7-diyl) Optoelectronic Properties in Novel Conjugated Polymer/Laser Dye Hybrid OLEDs

B.A. Al-Asbahi, M.H. Haji Jumali, C.C. Yap and M.M. Salleh

281