

Table of Contents

Preface

Zno Nanorod Synthesis via Controlled ZnO Seed Layer by Filtered Pulse Cathodic Vacuum Arc: Luminescence Enhancement	
A. Deachana, P.K. Chu and D. Boonyawan	1
Processing and Characterizations of Bi₂O₃/BaTiO₃ Ceramic	
W.C. Vittayakorn, D. Banjong and N. Vittayakorn	7
Synthesis, Characterization and Dielectric Properties of Mn_(2-x)Zn_xP₂O₇ Ceramics	
M. Sutapun, R. Muanghlua, S. Niemcharoen, W.C. Vittayakorn, P. Seeharaj and N. Vittayakorn	12
Thermoelectric Properties of Sn²⁺-Substituted CuFeO₂ Delafossite-Oxide	
C. Ruttanapun, P. Jindajitawat, W. Thowladda, W. Neeyakorn, C. Thanachayanont and A. Charoenphakdee	17
Magnetoelectric Properties of BaTiO₃ – Co_{0.5}Ni_{0.5}Fe₂O₄ Composites Prepared by the Conventional Mixed Oxide Method	
N. Pulphol, R. Muanghlua, S. Niemcharoen, W. Pecharapa, W.C. Vittayakorn and N. Vittayakorn	22
A Comparative Investigation of a Pentacene Layer on Gold and PMMA in Bottom-Contact Pentacene Thin Film Transistors	
T. Tippo, C. Thanachayanont, H. Nakajima, P. Songsiriritthigul, M. Hietschold and A. Thanachayanont	27
Modification of Working Electrode of Dye-Sensitized Solar Cell Using TiO₂ Nanoparticles/TiO₂ Nanofibers/CNT Composite	
W. Mekprasart, W. Jarernboon and W. Techitdheera	32
Fabrication of Small Size Inner Spiral Ribbed Copper Tube Using Tube Sinking Method	
T. Tangsri and S. Norasethasopon	37
Environmental Treatment for Perfect Spray Photoresist Morphology and Analysis	
L. Supadee, S. Chatrprachewin and W. Titiroongruang	42
Structural, Morphological and Adhesion Properties of Cofeb Thin Films Deposited by DC Magnetron Sputtering	
C. Ibusi and R. Sakdanuphab	47
Immobilization of Silk Fibroin as Scaffold for Cell Culture by Plasma Grafting Polymerization	
S. Tunma, E. Kanjai, J. Nuandee and D. Boonyawan	53
Impedance Spectroscopy Studies of DCM Doped Alq₃ Organic Material	
P. Keeratithiwakorn, K. Onlaor, T. Thiawong and B. Tunhoo	59
Sol-gel Combustion Synthesis and Characterizations of Nanocrystalline Zinc, Nickel and Nickel-Zinc Ferrites	
T. Tangcharoen, A. Ruangphanit, W. Klysubun and W. Pecharapa	64
Effect of Sputtering Power on Physical Properties and Electrochromic Performance of Sputtered-WO₃ Thin Films	
R. Noonuruk, K. Paipitak, M. Horprathum, W. Techitdheera, S. Porntheeraphat and W. Pecharapa	69
Increasing Plant Flavonoid Biomaterials in Response to UV-A Light	
S. Kanthang and K. Sompornpailin	74
Effect of Substrates on Preparation of Dissolved PMMA in DMF Solution Used as a Dielectric Layer in Oftts	
T. Tippo, C. Thanachayanont, C. Junin, S. Prichanont, M. Hietschold and A. Thanachayanont	79
Microwave-Assisted Solution Combustion Synthesis and Characterization of Thermoelectric Ca₃Co₂O₆ Powders	
S. Kahatta, N. Chaiyo, C. Ruttanapun, W. Techitdheera, W. Pecharapa and N. Vittayakorn	84
Study of Antifungal Activities of CuO/ZnO Nanocomposites Synthesized by Co-precipitation Method	
K. Phiwdang, M. Phensajai and W. Pecharapa	89
A Study of Fluorescent Chemosensor for Fe(II) Based On Cyanoacrylic Derivatives	
P. Thanakit, T. Chodjarusawad, P. Chittratan, S. Pratontep and D. Phromyothin	94
Investigation of a Biodegradable Polymer Electrolytes Based on Carboxy Methylcellulose and its Potential Application in Solid-State Batteries	
A.S. Samsudin, J.J.P. Tham and M.I.N. Isa	99

Preparation and Microstructure of Titania (TiO_2) Nanotube Arrays by Anodization Method	104
B. Samran, P. Krongkitsiri, S. Pimmongkol, S. Budngam and U. Tipparach	
First-Principles Investigation on Elastic Constants of TiN under High Pressure	109
K. Prasert, P. Thanomngam and K. Sarasamak	
Effect of Anodization Process on Morphology of Nickel Coating	114
J. Jadto, S. Porntheeraphat, S. Pratontep and A. Eiad-Ua	
Nanocrystalline Barium Zirconium Titanate Synthesized by the Sonochemical Process	119
S. Wirunchit, R. Muangluua, S. Wirunchit, W. Vittayakorn and N. Vittayakorn	
Preparation and Characterization of Cu-Doped ZnO Sol-Gel Derived Optical Thin Films	124
K. Chongsri, S. Aunpang, W. Techidheera and W. Pecharapa	
Effect of N Incorporation on Growth Behavior of InGaAsN/GaAs/Ge Multi-Layered Structure by MOVPE	129
P. Wanarattikan, S. Sanorpim, S. Denchitcharoen, K. Uesugi, T. Kikuchi, S. Kuboya and K. Onabe	
Effect of Platinum Substitution on the Microstructures and Dielectric Relaxation of $CaCu_3Ti_4O_{12}$ Ceramics	134
W. Makcharoen	
Studies Thermophysical Properties of MgO by First Principle Simulation	139
H. Wattanasarn and T. Seetawan	
Effect of Compounding Methods on Mechanical Properties of Poly(lactic acid)/Starch/Natural Rubber Blends	144
J. Chouaytan and V. Tanrattanakul	
Effect of the Fuel Type on the Synthesis of Barium Strontium Titanate by Sol-Gel Combustion Method	149
C. Thongchanthep and S. Thountom	
An Investigation on Structure and Morphology of Strontium Titanate Nanopowders Synthesized by Sol-Gel Combustion Method with Chitosan Solution Addition	154
T. Klaytae and S. Thountom	
Influence of Aluminium on the Color, Microstructure and Hardness of White Alloys	159
S. Jitchoom, S. Rojananan and S. Rojananan	
Micro-Raman Investigation of Epitaxial Lateral Overgrown Cubic GaN on Patterned GaAs (001) with Different Mask Stripe Directions	164
P. Suwanyangyaun, S. Sanorpim and K. Onabe	
Lead-Free Cu-Si-Zn Brass with Tin Addition	169
S. Puathawee, S. Rojananan and S. Rojananan	
The Effect of Injection Parameters on Morphology in Metal Injection Moulding	174
B. Muangwaeng, S. Rojananan and S. Rojananan	
Microstructure and Hardness of Cu-Zn-Si-Al-Sn Brasses with Antimony Addition	179
D. Suksongkarm, S. Rojananan and S. Rojananan	
Influence of Propylene Carbonate as A Plasticizer in CMC-OA Based Biopolymer Electrolytes: Conductivity and Electrical Study	184
M.A. Ramlli, M.N. Chai and M.I.N. Isa	
Investigation on Magnetic Properties of $L1_0$-FePt/Fe Graded Media Multilayer	189
W. Tipcharoen, A. Kaewrawang, A. Siritaratiwat and K. Tonmitra	
Ionic Conduction Behavior of CMC Based Green Polymer Electrolytes	194
M.I.N. Isa and A.S. Samsudin	
Current Transport Mechanism of n-Type Nanocrystalline $FeSi_2$/Intrinsic Si/p-Type Si Heterojunctions Fabricated by Facing-Targets Direct-Current Sputtering	199
N. Promros, S. Funasaki, R. Iwasaki and T. Yoshitake	
Study on Optical and Electronic Properties of Sn-Doped ZnPc	204
A. Rangkasikorn, C. Saributr, S. Rojanasawan, N. Tammarugwattana, K. Mano, P. Thanomngam and J. Nukeaw	
Characterization P-Ca₃Co₄O₉ and N-CaMnO₃	209
S. Paengson, T. Seetawan, P. Muthitamongkol and C. Thanachayanont	
Synthesis and Characterization of Mg₂Si Thermoelectric Material	213
C. Nakhowong, T. Sumpao and T. Seetawan	
Microstructure and Thermoelectric Properties of Na_{0.5}CoO₂	218
W. Namhongsa, T. Seetawan, P. Muthitamongkol and C. Thanachayanont	

Thermoelectric Properties of PbTe	223
S. Phewphong and T. Seetawan	
Characterization of Zn_{0.96}Al_{0.02}Ga_{0.02}O Thermoelectric Material	227
P. Pilasuta, P. Muthitamongkol, C. Thanachayanont and T. Seetawan	
High Sensitive Nanocrystal Titanium Nitride EG-FET pH Sensor	
Y. Rayanasukha, S. Porntheeraphat, W. Bunjongpru, N. Khemasiri, A. Pankiew, W. Jeamsaksiri, A. Srisuwan, W. Chaisriratanakul, C. Hruanun, A. Poyai and J. Nukeaw	232
Photocatalytic Activities under UV Light of Ball-Milled TiO₂ Photocatalysts	
J. Rattanarak, W. Mekprasart, W. Pecharapa and W. Techitdheera	237
Effect of Operated Pressure on Anticorrosive Behavior of Ta₂O₅ Thin Film Grown by D.C. Reactive Magnetron Sputtering System	
N. Khemasiri, C. Chananonawathorn, M. Horprathum, Y. Rayanasukha, D. Phromyothin, W. Bunjongpru, S. Porntheeraphat and J. Nukeaw	242
Effect of Calcinations Temperature on Structural Properties, Phase Transformation and Photocatalytic Activity of Electrospun TiO₂ Nanofibers	
S. Suphankij, W. Mekprasart and W. Pecharapa	247
Effect of Sonication Time and Calcination Temperature on Physical Properties of Titanium Dioxide Synthesized via Sonochemical-Assisted Process	
C. Kahattha, N. Vittayakorn and W. Pecharapa	252
Efficeincy Improvement of Triphenylamine-Based Organic Dyes in DSSCs, An Effects of Linker Moiety	
P. Chittratan, P. Thanakit, W. Jarernboon and D. Phromyothin	257
Electroless Copper Deposition on PET Sheets	
K. Phasuksom, W. Prissanaroon-Oujai, N. Brack and P. Pigram	262
Polymer-Coated Single-Walled Carbon Nanotubes for Ethanol and Dichloromethane Discrimination	
W. Muangrat, R. Maolanon, S. Pratontep, S. Porntheeraphat and W. Wongwiriyapan	267
Hole Doping Through Indium Intercalation into Copper Phthalocyanine	
A. Jaruvanawat, P. Prajuabwan, S. Rojanasuwann, A. Chanhom, A. Rangkasikorn and J. Nukeaw	273
XPS Investigation of an Increasing C-H Vibration of Pentacene Doped with Indium	
A. Chanhom, P. Prajuabwan, S. Rojanasuwann, A. Jaruvanawat, A. Rangkasikorn and J. Nukeaw	279
Reinvestigation the Thermal and Electrical Transport Properties of Tl₇Sb₂	
A. Charoenphakdee, A. Harnwangmuang, T. Seetawan, C. Ruttanapun, V. Amornkitbamrung, K. Kuroasaki and S. Yamanaka	284