

Table of Contents

Preface, Advisory Board and Local Organizing Committee

I. Plenary and Invited

Proteoglycan Analogues for Ophthalmic and Orthopaedic Applications B. Tighe, J. Bramhill and D.C. Campbell	3
SurgiLux: A Novel Thin Film, Laser-Activated Bioadhesive for Corneal Repair K. Thomson, H. Marcal, J. Shabazi, S. Watson, D. Wakefield and L.J.R. Foster	7
Polymers, Biomanufacturing and Regenerative Medicine G.R. Mitchell, M. Domingos and P.J. Bartolo	11
Biomedical Polymers Materials for a New Era in Molecular Engineering R. Molloy	15
Spinal Cord Repair and Regeneration: The Application of Bioadhesives and Extracellular Matrix Bioscaffolds H. Marcal, T. Ahmed, N. Wanandy and J. Foster	19
Bioactive Nano-Filters to Control Legionella on Indoor Air P.A.F. Rodrigues, S.I.V. Sousa, M.J. Geraldes, M.C.M. Alvim-Ferraz and F.G. Martins	23
Polyelectrolyte-Enhanced Ultrafiltration (PEUF) Process for Low Level Arsenic Removal: Recovery of Polyelectrolyte from Retentate Stream P. Pookrod, W. Dungkaew, P. Un-Arn and K.J. Haller	27
Antibacterial Wound Healing Gels from Oligochitosan Salts W. Janvikul, P. Ngamviriyavong, P. Uppanun, P. Tanjak and N. Sangjun	31
Effect of Physical Aging on Physical Properties of Pregelatinized Tapioca Starch S. Manchun, S. Piriayprasarth, V. Patomchaiviwat, S. Limmatvapirat and P. Sriamornsak	35
Novel Flexible NH₃ Gas Sensor Prepared by Ink-Jet Printing Technique C. Wongchoosuk, P. Jangtawee, P. Lokavee, S. Udomrat, P. Sudkeaw and T. Kerdcharoen	39

II. Biomaterials Science

Molecular Network and Crosstalk Effects for Network Reliability N. Moongfangklang, S. Mitatha and P.P. Yupapin	45
Blood Circulation Manipulation within Molecular Buffer and Bus Network for Molecular Diagnosis Use N. Moongfangklang, S. Mitatha and P.P. Yupapin	49
Molecular Design of a Speciality Polyester for Potential Use as a Fast-Absorbable Monofilament Surgical Suture P. Sansurin, K. Buakem, W. Kalathong, R. Molloy and J. Siripitayananon	53
The Fabricated Collagen-Based Nano-Hydroxyapatite/β-Tricalcium Phosphate Scaffolds M. Ebrahimi, N. Monmaturapoj, S. Sutrapreyasri and P. Pripatnanont	57
Effect of Apatite Precipitation on Failure Behavior of Hydroxyapatite Coating Layer on Titanium Substrate A.R. Nimkerdphol, T. Loanapakul, Y. Otsuka and Y. Mutoh	61
Fatigue Behavior and Apatite Precipitation of Plasma-Sprayed HA Coating on Commercially Pure Titanium Substrate in Simulated Body Fluid (SBF) T. Loanapakul, A.R. Nimkerdphol, Y. Otsuka and Y. Mutoh	66
Biomass-Based Sulfonic-Functionalized Carbon Solid Acid for Esterification of Acetic Acid W.W. Mar and E. Somsook	70
Preparation and Characterization of Modified Biphasic Calcium Phosphate Ceramics N. Monmaturapoj and W. Thepsuwan	74
Hydrothermal Synthesis of Zinc Oxide Nanoparticle from Zinc-Dust Waste for Photocatalytic and Antibacterial Applications K. Natrchalayuth, T. Wasanapiarnpong, S. Larpkiattaworn and P. Sujaridworakun	78

Influence of the Substrate Bias Voltage on the Structure of Rutile TiO₂ Films Prepared by Dual Cathode DC Unbalanced Magnetron Sputtering	82
P. Kasemanankul, N. Witit-Anun, S. Chaiyakun and P. Limsuwan	
Synthesis of Nanocrystalline β-Tricalcium Phosphate from Chicken Eggshells by Precipitation Method	86
E. Hoonnivathana, P. Pankaew, P. Klumdoung, P. Limsuwan and K. Naemchanthara	
Characterization of Apatite from Human Teeth via XRD, FT-IR and TGA Techniques	90
P. Pankaew, E. Hoonnivathana, S. Sujinnapram, K. Thamaphat, P. Limsuwan and K. Naemchanthara	
Sonochemical Synthesis of Zn₃(PO₄)₂.4H₂O and Zn₃(PO₄)₂ Powders	94
M. Sutapun, B. Boonchom and N. Vittayakorn	
Statistical Optimization of Esterification Reaction to Produce Biodiesel from the Mixture of PFAD and Palm Stearin Oil Using Two-Step Reaction	98
M.M. Khine, P. Srinoppakhun, A. Thanapimmetha and M. Saisriyoot	
Blood Circulation Network Incorporation an Artificial Bone for Real Time Operation	102
M. Tasakorn, N. Suwanpayak and P.P. Yupapin	
Effect of Apatite Wollastonite Glass Ceramic Addition on Brushite Bone Cement Containing Chitosan	106
N. Srakaew and S.T. Rattanachan	
Synthesis, Processing and Testing of a Poly (DL-Lactide-<i>co</i>-ε-Caprolactone) Resorbable Electrospun Membrane for Guided Tissue Regeneration	110
P. Piyakunakorn, B. Khumraksa, B. Thapsukhon, S. Rassameemasmaung, R. Molloy, K. Suchiva and W. Punyodom	
Attachment and Proliferation of Cultured Human Periodontal Ligament Cells on 75:25 Poly (DL-Lactide-<i>co</i>-ε-Caprolactone) Electrospun Resorbable Membrane	114
S. Phunturug, S. Rassameemasmaung, W. Punyodom, R. Molloy, A. Sirikulsathean, K. Suchiva and P. Piyakunakorn	
Preparation of Chitosan-Thiamine Pyrophosphate/Polyvinyl Alcohol Blend Electrospun Nanofibers	118
N. Charernsriwilaiwat, T. Rojanarata, T. Ngawhirunpat and P. Opanasopit	
Stability and Cytotoxicity of Well-Dispersed Magnetite Nanoparticles Prepared by Hydrothermal Method	122
S. Ngernpimai, C. Thomas, S. Maensiri and S. Siri	
Properties of Poly(lactic acid) (PLA)/Poly(butylene adipate-<i>co</i>-terephthalate) (PBAT) Blends in the Presence of Antioxidant	126
P. Pukpanta and K. Sirisinha	
Preparation and Characterization of Biopolymer Film from Pomelo Pectin and Flour	130
V. Trisithivanij and P. Tasaso	
Association Behavior of the Synthetic Protein-Lipid Complex Analogues	134
P. Punyamoonwongsa and B. Tighe	
Spontaneous Calcium Deposition in the Scaffolds from Human Dermal Solutions	138
K. Theerakittayakorn and T. Bunprasert	
Comparison of Metal Alkoxide Initiators in the Ring-Opening Polymerization of Caprolactone	142
W. Meelua, V. Bua-Own, R. Molloy and W. Punyodom	
Apatite-Wollastonite Bioactive Glass-Ceramic Scaffolds for Hard Tissue Engineering	146
P. Sooksaen, K. Chaithep, T. Saliwong and T. Duangart	
Magnesium Substitution in Hydroxyapatite Synthesized by Sol-Gel Method	150
J. Klinkaewnarong, P. Sritonwong and E. Swatsitang	
Lipase-Catalysed Polymerization of Lactic Acid and the Properties of the Polymer	154
C. Chuensangjun, C. Pechyen, Y. Chisti and S. Sirisansaneeyakul	
¹H-NMR Analysis of Degree of Substitution in N,O-Carboxymethyl Chitosans from Various Chitosan Sources and Types	158
A. Jaidee, P. Rachtanapun and S. Luangkamin	
Development of NLCs for Topical ATRAs Applications	162
P. Chareanputtakhun, T. Rojanarata, P. Opanasopit and T. Ngawhirunpat	

Effect of BaZr_{0.05}Ti_{0.95}O₃ Addition on Microstructure and Piezoelectric Properties of Hydroxyapatite Bone	166
N. Pisitpipathsin, P. Kantha, W. Leenakul, P. Sriprapha, K. Pengpat, S. Eitssayeam and G. Rujjanagul	
Phase Formation of Hydroxyapatite Particles at Different Calcination Temperatures	170
S. Tigunta, W. Leenakul, S. Eitssayeam, G. Rujjanagul, T. Tunkasiri and K. Pengpat	
Characteristics of 45S5 Bioglass-Ceramics Using Natural Raw Materials	174
W. Leenakul, N. Pisitpipathsin, P. Kantha, N. Tawichai, S. Tigunta, S. Eitssayeam, G. Rujjanagul, K. Pengpat and A. Munpakdee	
Synthesis and Characterisation of PLA-CO-PEG Copolymers	178
C. Thanomsilp and U. Phetthianchai	
Simplified Qualitative Analysis of Glycerides Derived from Coconut Oil Using Thin Layer Chromatography	182
S. Pengon, C. Limmatvapirat and S. Limmatvapirat	
Formation and Characterization of Shellac Phthalate Succinate through Organic Solvent-Free Reaction	186
T. Sangnim, J. Nunthanid, M. Luangtana-Anan, C. Limmatvapirat and S. Limmatvapirat	
Property Development of Hydroxyapatite Ceramics by Two-Step Sintering	190
S. Panyata, S. Eitssayeam, G. Rujjanagul, T. Tunkasiri and K. Pengpat	
Tyrosinase Inhibitory Activity of Pyrazole Derivatives	194
T. Suwunwong, T. Kobkeathawin, K. Chanawanno, N. Saewan, P. Wisitsak and S. Chantrapromma	
The Preparation and Morphology of Biphasic Calcium Phosphate Ceramics	198
P. Saiwanich, K. Pengpat, G. Rujjanagul, U. Intatha and S. Eitssayeam	
Determination the Effect of Silver Nanoparticles on Gram-Positive Bacterial Cells by Atomic Force Microscopy	202
O. Unger, A. Treetong, P. Na-Ubon and N. Supaka	
Synthesis and Characterization of Pure Natural Hydroxyapatite from Fish Bones Bio-Waste	206
R. Bunsiri, K. Thamaphat and P. Limsuwan	
Structural Analysis of Strontium-Substituted Hydroxyapatites	210
H. Paennarin and S.L. Seet	
Production and Characterization of Activated Carbon from Waste Tire by H₃PO₄ Treatment for Ethylene Adsorbent Used in Active Packaging	214
A. Sirimuangjinda, K. Hemra, D. Atong and C. Pechyen	
Synthesized Silica Powder from Rice Husk for Printing Raw Materials Application	218
N. Tipsotnaiyana, L. Jarupan and C. Pechyen	
Resonance Raman Enhancement of the v₄ Band in Fe (TMPP)Cl at NIR Laser Excitation Attributed to Supramolecular Interaction	222
R. Puntharod, B.R. Wood and K.J. Haller	
Preparation of Polycaprolactone/Ethanol Extract Propolis Nanofibers Films	226
K. Sutjarittangtham, S. Sanpa, T. Tunkasiri, P. Rachtanapun, P. Chantawannakul, U. Intatha, K. Pengpat, G. Rujjanagul and S. Eitssayeam	
Preparation of Glutinous Rice Starch Nanofibers by Electrospinning	230
P. Jaiturong, K. Sutjarittangtham, S. Eitssayeam and J. Sirithunyalug	
Effect of Metal Oxide Nanoparticles Addition on Physical Properties of Hydroxyapatite	234
N. Lertcumfu, P. Jarupoom, K. Pengpat, T. Tunkasiri and G. Rujjanagul	
Properties of Porous Alumina Fabricated by Ceramic Injection Moulding Using Environmentally Friendly Binder	238
J. Surawatthana, N. Chuankrerkkul and W. Buggakupta	
Factors Influencing the Morphology of Cellulose Acetate Electrospun Fiber Mats	242
S. Plianwong, K. Su-Utha, P. Opanasopit, T. Ngawhirunpat and T. Rojanarata	
Combination Effects of the Antimicrobial Agents and Cinnamon Oil	246
J. Mahadlek, J. Charoenteeraboon and T. Phaechamud	
A New Approach for the Preparation of Bleached Shellac for Pharmaceutical Application: Solid Method	250
S. Saengsod, S. Limmatvapirat and M. Luangtana-Anan	
Preparation of Nanosilver Loaded Calcium Phosphate by <i>In Situ</i> Phase Conversion Process	254
F. Thammarakcharoen, K. Wasoontararat and J. Suwanprateeb	

Molecular Dynamics Study of DNA Duplex Containing Carbazole-Derived Universal Base	258
W. Soodsawang, T. Benchawan, U. Wichai and Y. Tantrirungrotechai	
Effect of Crystalline Morphology on Mechanical Properties of PPB Polymer Nanofiber Composite	262
S. Sangthaiyarak, N. Tawichai, K. Pengpat, G. Rujijanagul, T. Tunkasiri and S. Eitssayeam	
Effect of Galactomannan on the Dynamic Properties of Xyloglucan Aqueous Solution	266
W. Sittikijyothin	
Determination of Surface Free Energy and Contact Angle for Hydrolyzed Shellac	270
P. Kraisit, S. Limmatvapirat, J. Nunthanid, M. Luangtana-Anan, K. Terada, E. Yonemochi and Y. Yoshihashi	
Comparison of <i>In Vitro</i> Binding of Bile Salt by Pectins from Various Sources	274
K. Cheewatanakornkool, A. Chaidedgumjorn, U. Sotanaphun, S. Limsirichaikul, C. Wessapan and P. Sriamornsak	
Thermal Analysis of Chitosan-Lactate and Chitosan-Aluminum Monostearate Composite System	278
K. Yodkhum and T. Phaechamud	
Drug-Loaded Pectin Microparticles Prepared by Emulsion-Solvent Evaporation	282
P. Sriamornsak, S. Konthong, K. Burapapadh and S. Sungthongjeen	
Pectin-Based Nano-Sized Emulsions Prepared by High-Pressure Homogenization	286
K. Burapapadh, H. Takeuchi and P. Sriamornsak	
Design of Shellac-Based Film with Improved Mechanical Properties through Composite Formation with Clay	290
P. Piyawatakarn, P. Sriamornsak, J. Nunthanid, C. Limmatvapirat and S. Limmatvapirat	
Effect of Ultrasonic Treatment on Physical Properties of Tapioca Starch	294
S. Manchun, J. Nunthanid, S. Limmatvapirat and P. Sriamornsak	
Heterocoaggulation of Natural Rubber Latex and Poly [Styrene-co-2-(Methacryloyloxy) Ethyl Trimethylammonium Chloride] Nanoparticles	299
S. Promdsorn, P. Chaiyasat and A. Chaiyasat	
Preparation of Poly(l-lactic acid) Capsule Encapsulating Fertilizer	303
W. Boontung, S. Moonmangmee, A. Chaiyasat and P. Chaiyasat	
Physical Stabilizing Effect of Biopolymers on Solid Dispersions Containing Indomethacin and Polyethylene Glycol	307
B. Chamsai and P. Sriamornsak	
Development of Biodegradable Films Based on Durian Seed Starch	311
W. Pimpa, C. Pimpa and P. Junsangsree	
Design and Preparation of Synthetic Hydrogels by Redox Initiation via Free Radical Polymerisation for Biomedical Use as Wound Dressings	315
C. Witthayaprapakorn and R. Molloy	
Effect of Zein Concentration on the Formation of Pectin-Zein Complexes	319
M. Juttulapa and P. Sriamornsak	
Compostability and Ecotoxicity of Poly(lactic acid) and Starch Blends	323
Y. Rudeekit, P. Siriyota, P. Intaraksa, P. Chaiwutthinan, M. Tajan and T. Leejarkpai	
The Ultimate Biodegradation of the Starch Based Biodegradable Plastics	327
P. Intaraksa, Y. Rudeekit, P. Siriyota, P. Chaiwutthinan, M. Tajan and T. Leejarkpai	
Study of the Disintegration of Poly (butylene adipate-co-terephthalate) and Starch Co-Extruded Materials	331
P. Siriyota, Y. Rudeekit, P. Intaraksa, P. Chaiwutthinan, M. Tajan and T. Leejarkpai	
In Situ Crosslinkable Thiolated Chitosan as Scaffold Material for Tissue Engineering	335
D. Sakoetsakun, S. Dünnhaupt, J. Barthelmes, W. Pfaller and A. Bernkop-Schnürch	
Development of Soaps Containing Betel Nut Extract	339
T. Phaechamud and S. Chitratha	
Surface Tension and Viscosity of Herbal Massage Oil	343
S. Anuchatkidjaroen and T. Phaechamud	
Non-Aqueous Virgin Coconut Oil Hair Gel	347
T. Phaechamud, P. Katewongs, A. Chuekaew and W. Saengthongpinit	
Instant Powder of Malabar Tamarind Fruit Extract Prepared by Foam-Mat Method	351
T. Phaechamud, K. Sarunyakasitri and C. Choncheewa	

Menthol, Borneol, Camphor and WS-3 Eutectic Mixture	355
S. Tuntarawongsa and T. Phaechamud	
A Novel Silk Sericin/Poly (Vinyl Alcohol) Composite Film Crosslinked with Genipin: Fabrication and Characterization for Tissue Engineering Applications	359
T. Siritientong and P. Aramwit	
Structural and Textural of Marine Mollusc Shell	363
W. Siriprom, K. Kirdsiri, J. Kaewkhao, N. Chumnanvej, A. Choeysuppaket and P. Limsuwan	
Release of Growth Factor from Platelet-Rich Fibrin and its Stability in Sinus Lifting in Minipigs	367
N. Pattaraporncharoen, P. Pripatnanont, S. Suttapreyasri and N. Leepong	
Ultrasonic Extraction of Thai Propolis for Antimicrobial and Antioxidant Properties	371
S. Sanpa, K. Sutjarittangtham, T. Tunkasiri, S. Eitssayeam and P. Chantawannakul	
Formulation Development of Gel-Based Lipstick Containing Longan Honey and Natural Color Extracted from Sappan Wood and Roselle	375
C. Wanjai, P. Sirisa-Ard and P. Chantawannakul	

III. Applications of Biomaterial

Assessment of Physical, Mechanical and Biological Properties of Thai Silk Fibroin Vascular Scaffold	381
P. Thitiwuthikiat and S. Kanokpanont	
The Gelation Study of Silk Fibroin for Biomedical Application	385
W. Rattanavises and B. Oonkhanond	
Preparation of <i>Zingiber officinale</i> Extract Loaded Solid Lipid Nanoparticles	389
N. Ratcharin, P. Wongtrakul and R. Indranupakorn	
Chemical Composition of Essential Oil and Antioxidant Activities of <i>Curcuma petiolata Roxb. Rhizomes</i>	393
A. Thakam and N. Saewan	
Natural Polysaccharide-Based Films and their Antibacterial Activities	397
K. Sawangkan, W. Sittikijyothin and C. Satirapipathkul	
Characterization of Konjac Glucomannan Film Containing the Extracts of <i>Atractylodes lancea</i> and <i>Saussurea lappa</i>	401
T. Kaewsomboon, K. Sawangkan and C. Satirapipathkul	
Gold Recovery from Aqueous Solutions Using Bioadsorbent Synthesized from Rambutan Peel	405
T. Rubcumintara, A. Aksornpan, W. Jonglertjunya, W. Koo-Amornpattana and P. Tasaso	
Film Formation of Inclusion Complexes between Acetyl-Beta-Cyclodextrin and Chitosan	409
W. Taweepreda and P. Wanichapichart	
Arsenic Removal by Precipitation with Calcium Phosphate Hydroxyapatite	413
W. Dungkaew, K.J. Haller, A.E. Flood and J.F. Scamehorn	
Characterization of Chitosan and Carboxymethyl Chitosan Films from Various Sources and Molecular Sizes	417
P. Rachtanapun, M. Jakkaew and R. Suriyatem	
Factors Affecting Design of Shellac-Based Matrix Tablet through Annealing Process	421
N. Chongcherdsak, C. Limmatvapirat and S. Limmatvapirat	
Characterization and Adsorption Efficiency of the Natural and the Modified Diatomite via the Low Temperature Hydrothermal Route	425
P. Pookmanee, P. Thippraphan, P. Jansanthea and S. Phanichphant	
Effect of Coconut Oil and Surfactants on Stability of Nanoemulsions	429
S. Piriyaprasarth, P. Sriamornsak, G. Chansiri, W. Promboot, U. Imerb and D. Sumpoung	
The Influence of Cyclodextrin and pH on the Solubility of Ketoprofen	433
W. Samprasit, T. Rojanarata, P. Akkaramongkolporn, T. Ngawhirunpat and P. Opanasopit	
Effect of Crosslinking Time on Ion Exchange Capacity of Polystyrene Nanofiber Ion Exchangers	437
T. Nitanan, P. Akkaramongkolporn, T. Rojanarata, T. Ngawhirunpat and P. Opanasopit	
Development of Ketoprofen Microemulsion for Transdermal Drug Delivery	441
N. Worachun, P. Opanasopit, T. Rojanarata and T. Ngawhirunpat	

Effect of Acyl Chain Length of Spermine Derivatives on Transfection Efficiency	
O. Paecharoenchai, N. Ni-yomtham, A. Apirakaramwong, B.E. Yingyongnarongkul and P. Opanasopit	445
Effect of Limonene and 1,8 Cineole on the Skin Penetration of Fluorescein Sodium Deformable Liposomes	
T. Subongkot, P. Opanasopit, T. Rojanarata and T. Ngawhirunpat	449
Thermal Insulation Produced from Pineapple Leaf Fiber and Natural Rubber Latex	
S. Kumfu and T. Jintakosol	453
Effect of Surfactants on Characteristic and <i>In Vitro</i> Release of Meloxicam Loaded in Deformable Liposomes	
S. Duangjit, P. Opanasopit, T. Rojanarata and T. Ngawhirunpat	457
Cream Stick Containing Natural Oil for Cracked Heel	
S. Kongmuang, D. Benjamala, W. Sangkarat and S. Buakwan	461
Application of Methylated <i>N</i>-(4-<i>N,N</i>-Dimethylaminocinnamyl) Chitosan for Oral Protein Drug Delivery	
J. Kowapradit, T. Rojanarata, T. Ngawhirunpat, A. Apirakaramwong, W. Sajomsang and P. Opanasopit	465
Chitosan Coated Alginate Microparticles for Oral Vaccine Delivery	
T. Suksamran, T. Rojanarata, T. Ngawhirunpat, S. Panomsuk and P. Opanasopit	469
Rapidly Dried Antimicrobial Spray for Foot Deodorant	
T. Phaeachamud and J. Charoenteeraboon	473
Customized Three Dimensional Printed Porous Polyethylene for Calvarial Reconstruction	
J. Suwanprateeb, F. Thammarakcharoen and P. Rukskul	477
Comparison of Vehicles for Vancomycin Drug Delivery in Extemporaneously Prepared Ophthalmic Solutions	
A. Khangtragool	481
Mechanisms of Cellular Uptake with Chitosan/DNA Complex in Hepatoma Cell Line	
A. Apirakaramwong, P. Pamonsinlapatham, S. Techaaarpornkul, P. Opanasopit, S. Panomsuk and S. Soksawatmaekhin	485
Comparison between Ethylcellulose Aqueous Colloidal Dispersion and Ethylcellulose Ethanolic Solution as Rupturable Coating Materials for Pulsatile Release Tablets	
S. Sungthongjeen and S. Puttipipatkhachorn	489
Fabrication of Dental Ceramics from Silicon Nitride Core with Borosilicate Glass Veneer	
T. Wasanapiarnpong, N. Cherdtham, P. Padipatvuthikul, C. Mongolkachit, R. Wanarusuksawong and S. Jinawath	493
Magnesium Stearate as Anti-Tacking Agent in Acrylic Polymer Films Intended for Gas-Entrapped Floating Delivery System	
W. Kriangkrai, S. Puttipipatkhachorn, P. Sriamornsak, T. Pongjanyakul and S. Sungthongjeen	497
Oral Bases Containing <i>Centella asiatica</i> Extract: Formulations and Evaluations	
S. Panomsuk, S. Indis, P. Panyasaroj, S. Chootrakulwattana, P. Opanasopit and T. Rojanarata	501
Gelatin/Fibroin Hydrogel for Controlled Release of Human Dentin Matrix Extract	
W. Anuchiracheewa, P. Pavasant and S. Kanokpanont	505
Fabrication of P_2O_5-CaO-Na₂O Glasses Doped with Zinc Oxide for Artificial Bone Applications	
S. Thonglem, S. Eitssayeam, G. Rujijanagul, T. Tunkasiri, K. Pengpat and A. Munpakdee	509
Antimicrobial Performance and Cytotoxicity of Antibiotics Impregnated Hydroxyapatite for Osteomyelitis Treatment	
P. Phanphiriya, F. Thammarakcharoen, W. Chokevivat and J. Suwanprateeb	513
Floating Alginate Beads as Carriers for Self-Emulsifying System Containing Tetrahydrocurcumin	
S. Sriraksa, N. Sermkaew, S. Setthacheewakul and R. Wiwattanapataapee	517
Study of Mechanical Properties of Magnesium Oxide Doped Alumina (Al_2O_3) and Yttria Stabilized Zirconia (YSZ) Composite for Medical Applications	
A. Phothawan, K. Nganvongpanit, T. Tunkasiri and S. Eitssayeam	521
Investigation of Antibacterial Properties of Soda Calcium Borosilicate Glass Doped with TiO₂	
K. Sornsanit, S. Pudwat, P. Limsuwan and J. Kaewkhao	525

Influence of Diluents on Physical Properties of Soybean Extracted Powder Prepared by Spray Drying Method	
P. Sobharaksha, R. Indranupakorn and M. Luangtana-Anan	529
Development of Acrylic Matrix Type Ketoprofen Patch	
N. Wonglertnirant, S. Tipwichai, P. Opanasopit, T. Rojanarata, S. Panomsuk and T. Ngawhirunpat	533
Antimicrobial Effect of Brazillian Propolis/Polycaprolactone Polymer on some Human Pathogenic Bacteria	
S. Sanpa, K. Sutjarittangham, T. Tunkasiri, S. Eitssayeam and P. Chantawannakul	537
Nanofiber Production Using Polyvinylalcohol (PVA) and Thai Honey and its Properties	
P. Puttamayutanon, K. Sutjarittangham, S. Eitssayeam and P. Chantawannakul	541
Antimicrobial Activity of Newly Formulated Propolis Cream	
P. Puttamayutanon, W. Trongarom, N. Janta, S. Ruengsiri, S. Kamjaisai and P. Chantawannakul	545
Surface Degradation and Mechanical Properties of PVC/Wood-Pallet Composite under UV-Weathering Environment	
B. Sreenual, D. Atong and C. Pechyen	548
Preparation of Polydiacetylene Vesicle and Amphiphilic Polymer as Time-Temperature Indicator	
A. Nopwinyuwong, W. Boonsupthip, C. Pechyen and P. Suppakul	552
Effect of Phthalic Anhydride Loading on Alkyd Resins for Paperboard Coating	
U. Noinak, L. Jarupan, C. Pechyen and C. Nandhivajrin	556
The Effect of Binder Phase on the Mechanical Properties of Particle Boards Based on Giant Sensitive Plant	
S. Kumfu, T. Jintakosol and S. Tangjuank	560
Effect of Lead Oxide on Glass Properties Produced from Rice Husk Fly Ash	
Y. Ruangtawee, J. Kaewkhao, N. Srisittipokakun and P. Limsuwan	563
Preparation and Properties of Glass Produced from Palm Ash	
J. Kaewkhao, S. Ruengsri, Y. Ruangtawee and P. Limsuwan	567
Properties of Thermal Insulation from Durian Peel Fiber and Natural Rubber Latex	
T. Jintakosol and S. Kumfu	571
Cheap Media for Inoculum Preparation of Acetic Acid Bacteria	
S. Supakod and A. Wongwicharn	575
The Efficiency Development of Ammonia-Odor Sensor Based on PSE-Polymer/SWNT Nanocomposite	
T. Piromjitpong, P. Lorwongtragool, P. Piromjitpong and T. Kerdcharoen	579
Sunscreen Liquid Foundation Containing <i>Naringi crenulata</i> Powder	
M. Kanlayavattanakul and N. Lourith	583
Stability of Anthocyanin from Mulberry Extracts in Alginate Microspheres at High Temperature	
R. Yamdech, P. Aramwit and S. Kanokpanont	587
Use of Response Surface Methodology for Phenolic Antioxidant Extraction from Lotus (<i>Nelumbo nucifera</i> Gaertn.) Pod Pericarp	
P. Pintathong, P. Chanphithak, P. Sereetaveekul, N. Thitipramote and P. Chaiwut	591
Prediction Models for Moisture Sorption Isotherms of Soy Protein Isolate/Carboxymethyl Chitosan/Oleic Acid Blend Films	
P. Rachtanapun and R. Suriyatem	595
Inhibitory Effect of Chitosan Films Incorporated with 1,8-Cineole on <i>Salmonella</i> Attached on Model Food Surface	
H. Thangvaravut, N. Chiewchan and S. Devahastin	599
Characterization of Eugenol Extracted from Lemongrass (<i>Cymbopogon citratus</i> (DC.) Stapf) for Food Packaging Materials	
N. Petchsoongsakul and C. Pechyen	603
Efficacy of Activated Carbon <i>In Situ</i> to Oil Palm Frond Paper for Active Packaging on Mechanical Properties	
N. Thongjun, L. Jarupan and C. Pechyen	607
Effect of Molecular Sizes, Sources of Chitosan and Plasticizer Types on Properties of Carboxymethyl Chitosan Films	
J. Tantala, C. Rachtanapun and P. Rachtanapun	611

**Surface Treatment on Low Density Polyethylene with TiO₂ Nano-Particles for Packaging
Printing**

D. Phokhaphaiboonsuk, L. Jarupan, C. Pechyen and C. Nandhivajrin

615

**Characterization Nanocrystalline of Hydroxyapatite Synthesized by a Co-Precipitation
Method**

S. Inthong, G. Rujijanagul, S. Eitssayeam, T. Tunkasiri and K. Pengpat

619