## **Table of Contents**

## **Preface**

## Chapter 1: Pharmaceutical and Biomedical Materials and Technology

Deproteinized Natural Rubber Latex as Matrix Base of Meloxicam Transdermal Patches J. Suksaeree, R. Waiprib, W. Simchareon, T. Phaechamud and W. Pichayakorn	3
<b>Development of </b> <i>In Situ</i> <b> Cooling Natural Rubber Film</b> S. Chitrattha and W. Pichayakorn	9
Impact of Polymers as Precipitation Inhibitors on Physicochemical Properties of Spray- Dried Astaxanthin-Loaded Self-Microemulsifying Delivery Systems W.T. Aung and V. Boonkanokwong	15
Cold-Pressed Coconut Oil Cream: Preparation and Evaluation W.W. Lwin, N. Puyathorn and T. Chantadee	23
Anticancer Activity of Nanoemulsions Loading Biomaterial <i>Amomum kravanh</i> Oil against Oral Cancer Cells N. Chaothanaphat, Y. Weerapol, S. Manmuan, S. Limmatvapirat and S. Tubtimsri	31
Antioxidant Activity, Antimicrobial Activities, and Effect on the Viability of Fibroblast Cells of <i>Boesenbergia rotunda</i> - Loaded Hydrogel Patches P. Eakwaropas, N.M.M. Aye, T. Ngawhirunpat and B. Pamornpathomkul	37
Development of Floating 3D-Printed Devices for Carvedilol Tablet T. Chareonying, P. Akkaramongkolporn and P. Opanasopit	45
Assessment of Shellac as Alternative Material for Preparation of Fused Deposition Modeling (FDM) 3D Printing Filaments S. Chansatidkosol, C. Limmatvapirat, S. Piriyaprasarth, V. Patomchaiviwat and S. Limmatvapirat	53
Design and Investigation of Optimal Dissolving Polymeric Microneedles for Ocular Application by Using Three-Level Factorial Design	
P. Suriyaamporn, M. Sukma and W. Rangsimawong  Measurement of Surface Tension/Contact Angle of Saturated Fatty Solution for Developing  In Situ Forming Drug Delivery Systems	63
T. Chantadee, S. Senarat, C. Chinpaisal and J. Mahadlek	69
Formulation and Optimization of Progesterone Microemulsion Using Simplex Lattice Mixture Design P. Aumklad, P. Suriyaamporn and P. Patrojanasophon	75
Role of Simulated Body Fluid in Biofilm Formation and Growth on a Polycarbonate Material	0.1
W. Wattanakaroon, J. Chonpracha and T. Subsomboon  Synthesis of Fluorinated N- Benzylaniline Derivatives and Evaluations on Anti-Tyrosinase	81
and Anti-Melanogenic Activities  K. Singpanna, P. Limpachayaporn, M. Sukma, A. Athipornchai and N. Nuntharatanapong	87
Synergistic Anticancer Activity of Cinnamon Bark Oil and Imatinib Mesylate Combination on Colorectal Cancer Cell Lines E.M. Khaing, T. Phaechamud and T. Intaraphairot	93
Antimicrobial and Anti-Colorectal Cancer Activities of Some Volatile Oils T. Intaraphairot and E.M. Khaing	99
Determination of Antimicrobial Activity from Various Plant Parts of <i>Typha angustifolia</i> Using Agar Disc Diffusion and Bioautography W. Narakornwit and J. Charoenteeraboon	105
Newly Designed Geldanamycin Analogues for Targeted Cancer-Causing Hsp90 Protein Inhibitor: Molecular Docking Study	
S. Suttayasorranakhom, C. Jaramornburapong, W. Phuthawong and J. Sirirak  Exposure Evaluation of Toxic Trace Elements in Thai Mulberry Leaves and Commercial	111
Tea Infusion Products A. Thida, O. Toyama, L. Sratthaphut, P. Tanamatayarat and M. Satiraphan	117

One-Pot Two-Step Microwave-Assisted Synthesis of 4-(Hydroxy-(1 <i>H</i> -1,2,3-Triazol-4-yl))Methyl Phenol Derivatives	
E.E. Thin, P. Kanjanapruk, K. Pochanakom and S. Niratisai	123
Oxypeucedanin Hydrate: A Natural Furanocoumarin as P-Glycoprotein Substrate M.P.T. Maw, N. Piyapolrungroj, P. Phattanawasin and C. Sukonphan	129
Yields, Phytochemicals, and Biological Activities of Different Solvent Extracts of <i>Senna alata</i> Leaves	
W.W. Aung, W. Krongrawa, J. Ponphaiboon, P. Kulpicheswanich and C. Limmatvapirat	135
Synthesis of Benzhydrol Derivatives as Antituberculosis Agents via Fries Rearrangement Method Investigated by DSC Analysis	
P. Kanjanapruk, T. Prammananan, S. Niratisai and K. Pochanakom	141
Chapter 2: Materials Modification and Processing Technologies	
Effect of Calcination Time on the Microstructure and Optical Properties of	
(Zn <sub>0.5</sub> Cu <sub>0.5</sub> )Al <sub>2</sub> O <sub>4</sub> Spinel Color Pigments N. Yongvanich, K. Wannapoklang, K. Tanayut and P. Lakkanasri	149
Influence of Lignin Content on Morphology and Properties of Poly(Lactic Acid)/Lignin Composite Films	
A. Arjhan, S. Wacharawichanant and P. Opaprakasit	155
Effect of Sn Impurity on a Commercial Aluminium Alloy for Die Casting P. Sooksaen and P. Thongyoug	163
The Recycling Feasibility of Disposable Face Masks by Compression Molding P. Patanathabutr, J. Chutam, C. Eliamso, A. Surakit and N. Hongsriphan	169
The Preparation of Luminescent Phosphor in SiO <sub>2</sub> -B <sub>2</sub> O <sub>3</sub> -ZnO-K <sub>2</sub> O Glasses V. Loryuenyong, K. Ruangsiri, S. Paldee and A. Buasri	175
Properties of Recycled Poly(Lactic Acid) Contaminated with Poly(Ethylene Terephthalate) N. Hongsriphan, C. Jamjalern, P. Thikulwong, R. Yooyen and P. Patanathabutr	181
Microwave Pyrolysis Combined with CO <sub>2</sub> and Steam as Potential Approach for Waste Valorization	
S.Y. Foong, R.K. Liew, B.H.K. Lee and S.S. Lam	187
<b>Biochar Waste Palm Shell for NO</b> <sub>X</sub> <b>Post-Emission Reduction in Biodiesel Combustion</b> X.Y. Lim, P.Y.N. Yuh, R.K. Liew, M.C. Chiong, C.T. Chong and S.S. Lam	193