

Table of Contents

Preface

Chapter 1: Agricultural Technologies, Food Processing and Biotechnologies

Paddy Soil Profile Distribution of $\delta^{13}\text{C}$ Subjected to Rice Straw Amendment and Burning W. Kulsawat, B. Porntepkasemsan and P. Nochit	3
Estimation of Evaporative Loss of Surface Water Using Stable Isotopes in a Lowland Rice Field, Suphanburi, Thailand B. Porntepkasemsan, W. Kulsawat and P. Nochit	8
Protein Biomarkers from Physiological Disorder Syndrome in Leave, Peel and Seed of Longan on Fruit Growth Using One-Dimension Electrophoresis Technique Followed by Protein Identification with LC-MS/MS E. Threenet, A. Kleawkla, Y. Kaewkalong, W. Wiriyaalongkorn, A. Joomwong, T. Kleawkla and T. Kleawkla	14
The Protein Extraction from Longan Pulp (<i>Dimocarpus longan</i> Lour. cv. Daw) for Proteomic Analysis Using One-Dimensional Electrophoresis A. Kleawkla, E. Threenet, W. Khonkham, W. Wiriyaalongkorn, A. Joomwong, T. Kleawkla and T. Kleawkla	21
Effect of <i>Jasminum sambac</i> Flower Extracts on Fibroblast Cell Viability and Film Characteristics P. Eakwaropas and N. Wisidsri	27
Antioxidant Activities of Chaba Maple (<i>Hibiscus acetosella</i>) Flower Extract S. Thungmungmee, N. Wisidsri and W. Khobjai	34
High Performance Liquid Chromatography Using Ultrasonic Extraction for Benzoic Acid Analysis in Curry Paste Samples N. Thongsrinooon, N. Phiwdee, Y. Duangsa, K. Muensub and V. Duang-Iad	40
Total Antioxidant Capacity of Thai Herbal Teas by the Ferric Reducing Antioxidant Power T. Surachai, J. Khemjira and K. Warachate	46
Total Phenolic Content and Free Radical Scavenging Activity of <i>Nelumbo nucifera</i> Gaertn. K. Jarmkom, N. Wisidsri, P. Eakwaropas and W. Khobjai	52
Inhibition of Coliform Bacteria by Lactic Acid Bacteria Isolated from Nham Hed (Fermented Mushroom) S. Wittanalai, K. Tanruean and P. Mapoong	56
Total Phenolic Content and DPPH Free Radical Scavenging Activity of Young Turmeric Grown in Southern Thailand S. Sukati and W. Khobjai	61
The Influence of Silver Nanoparticle Sizes on Antibacterial Activity, Cytotoxicity and Genotoxicity of Alginate Hydrogel Beads Containing Silver Nanoparticles P. Mahasawat, S. Mudtaleb and P. Eaidprap	70
Cathodic Stripping Voltammetric Study for Determination of Inorganic Arsenic Species in Seaweed <i>Gracilaria fisheri</i> C. Khamkaew, L. Wongsuwan and A. Sareedeh	78
Evaluation of Free Radical Scavenging Activity and Reducing Power of <i>Careya arborea</i> Roxb. W. Ninlaor, T. Thongom, C. Phoomphong and W. Khobjai	86
Evaluation of Hurdle Technology on Shelf Life Extension of Thai Red Curry Paste and Sour Curry Paste A.N. Phoem, S. Sankalee and P. Aryae	92
Production and Application of Biosurfactant Produced by <i>Agrobacterium rubi</i> L5 Isolated from Mangrove Sediments P. Dikit, S. Maneerat and A. Saimmai	98

Chapter 2: Environmental Engineering Technologies

Enhanced Photocatalytic Degradation of Methylene Blue by Using Au-TiO₂ P. Jansanthea and W. Chomkitichai	107
Photocatalyst Prepared from the Groundwater Sediment P. Jansanthea, P. Muangphan, S. Sakprasertsiri, W. Chomkitichai, J. Ketwaraporn, O. Sangswang and C. Soavakon	114
Preparation of Groundwater Sediment/Titanium Dioxide for Decomposition of Agricultural Residues C. Soavakon, P. Muangphan, S. Sakprasertsiri, W. Chomkitichai, J. Ketwaraporn, O. Sangswang and P. Jansanthea	122
Adsorption of H₂S Gas by Modified Diatomite and Leonardite W. Chomkitichai, P. Sujit, J. Ketwaraporn, P. Pookmanee, S. Phanichphant and P. Jansanthea	130
Dye Mixtures Degradation by Multi-Phase BiVO₄ Photocatalyst W. Chomkitichai, J. Pama, P. Jaiyen, S. Pano, J. Ketwaraporn, P. Pookmanee, S. Phanichphant and P. Jansanthea	138
Synthesis of Indium Sulfide/Zinc Oxide Composites Films and their Photocatalytic Activities N. Boonprakob and A. Masa-Ad	146
The Utilization of Bamboo Residues and Grease Waste for Charcoal Briquette Production S. Pongthornpruek and A. Sasitharanuwat	154
Hydrogen Sulfide Removal by Iron Oxide-Based Clay from Biogas for Community Use C. Mingchai, S. Sakunphun, S. Palas and S. Samposree	159
Physical Characterization of Rocks in Thung Nui Hot Spring, Satun Province, the South of Thailand P. Khoonphunnarai, P. Yongsiriwit, C. Fongsuwan and M. Daoh	166

Chapter 3: Research and Designing in Materials and Machinery

Developing Shallot Chemical Mixer through Mutually Incorporated Technology Transfer Technique G. Intuwong	175
Comparative Efficiency Analysis of Data Fusion Methods for Vehicle Trajectory Reconstruction A. Chomputawat and W. Chatwiriya	182
The Development of Supervised Motion Learning and Vision System for Humanoid Robot S.T. Lin, J. Hu, C.H. Shih, C.J. Huang and P.H. Kuo	188
Evaluation of Specific Heat Capacity and Entropy of Particle Bound Harmonics Oscillator Cosine Asymmetric Potential by Partition Function P. Moonsri and A. Hutem	194
Theory Mathematics and Physics Model Fitting of Kinematic Parameter for Usain Bolt 100 Metres Sprint at Beijing Olympic Games 2008 N. Thongsit, Y. Sangnok, W. Wannapak, K. Khoomsab, S. Iamsamang, S. Sangnok, J. Pakamwang and A. Hutem	201
Determine the Specific Heat Capacity, the Entropy, and the Standard Deviation of Particle Vibration Bound-State under the Anharmonic Oscillator Asymmetric Potential by Partition Function Method M. Apiratigosol, K. Jeeradit, P. Keawpeai, S. Hutem, A. Hutem, S. Suwanwong and P. Moonsri	206
Effect of Filler Types on Properties of the Natural Rubber Closed Cell Foam E. Phumnok, J. Boonphang and O. Bourkaew	213

Chapter 4: Information Technologies

Sentiment Classification Using Text Embedding for Thai Teaching Evaluation K. Boonchuay	221
---	-----

Quality of Service on Link Aggregation Network Virtualization for Docker Containers

Y. Chuchuen, K. Rattanaopas and S. Chunkaew

227

The Development of Prototype Equipment for Information System of Environmental Monitoring and Production Factor in Agroforestry Area, Uttaradit, Thailand

C. Ruangsiriwattanakul

233