出國報告(參與國際研討會發表論文)

2012年農業、食品與生物工程國際學術會議

服務機關：國立臺東專科學校

姓名職稱：姚國山 教授

派赴國家：中國廣州

出國期間：2012/5/10~2012/5/14

報告日期：2012/6/8

摘 要

2012 年農業、食品與生物工程國際學術會議之主要目的是，讓全世界有關農業技術、食品科學與生物工程等領域專家能共聚一堂共同研討有關上述該領域之議題，以增進彼此之研究水平。本年度主辦單位所選擇之主題涵蓋範圍相當廣泛，農業類包含有Agricultural Biotechnology Regulations, Rules & Perceptions 等，食品類包括Food Chemistry and Biotechnology 等，生物類則包括 Biological Data Mining 等，醫藥類包括Drug screening and pharmaceutical synthesis 等， 工程類包括Electronics and Instrumentation in Food Iindustry 等，計算類包括Mathematical and Quantitative Models of Cellular and Multicellular Systems 等，基因工程類包括Gene Structure,Regulation and Modeling 等。

會議自 5 月 11 日至 5 月 13 日於中國廣州南洋長勝酒店 (Nanyang King's Gate Hotel) 舉行， 5 月 11 日所安排之行程爲報到註冊登記，晚間則是舉辦歡迎晚宴，5 月12 日上午時段 (08:30~11:30)則安排有開幕典禮及專題演講，開幕典禮由Malaya 大學 Jennifer Ann Harikrishna 教授主持，開幕典禮結束後即聆聽大會所邀請的專題演講（Keynote Speech），分別是由國立清華大學 Cheng-Hsien Liu 教授主講，與南韓韓東大學(Handong Global University)的Wilhelm Holzapfel 教授等主講。

5 月12 日下午時段(14:00~18:20)則開始進行個別的論文發表場次，論文發表議程分爲兩個Sessions，Session A 主題爲農業、生物及食品技術(Agricultural, Biological, Food Technology)，共計有 23 篇論文登記口頭報告，Session B 主題爲工程技術（Engineering Technology），則計有 20 篇論文登記口頭報告，本人則選擇與近來

實驗研究方向有關及感興趣之主題參加，並在會議中向與會的各國專家學者請益。

5 月13 日上午時段(08:30~12:20)持續進行論文發表場次，Session A 共有22 篇論文登記口頭報告，Session B 則有18 篇論文登記口頭報告。本人仍是選擇感興趣之主題參加，印象深刻的有Nurulhuda et al.團隊他們所發展的是利用TAPIOCA 發酵萃出液進行奈米碳管(carbon nanotubes, CNT)的生合成技術，並有相當不錯的生合成效率，該技術值得未來研究時之參考。

本人有幸參與此盛會，並發表論文一篇，主題爲利用植物(*Mimosa pudica* L.)萃取液生合成奈米銀粒子及其抗菌評估(Biosynthesis and antibacterial assessment of silver nanoparticles using plant extract)，同時能藉此機會向參加的各國專家學者請益，確實獲益良多。

目 次

一、目的：

本校現階段雖爲專科學校，但爲增進學校師長之研究水平，並與國際學者彼此交換研究心得，進而提昇本校能見度，故而投稿參與由香港工業技術研究中心(Hong Kong Industrial Technology Research Centre)主辦，並於2012 年5 月11~13日在中國廣州舉辦之2012 年農業、食品與生物工程國際學術會議(2012 International Conference on Agricultural, Food and Biological Engineering , AFBE 2012)。

本次國際學術研討會之主題涵蓋內容相當廣泛，其討論之議題如下：

(01) Agricultural and Biological Engineering

(02) Agricultural biotechnology & developing countries

(03) Agricultural Biotechnology regulations, rules & perceptions

(04) Animal biotechnology

(05) Application of artificial intelligence in food engineering research and in industry

(06) Beverage and Fermentation Technology

(07) Bio-Agricultural Engineering Techniques

(08) Biocatalysis, organocatalysis and nanobiotechnology

(09) Biofuels and bioenergy biotechnology research

(10) Bioinformatics

(11) Biological and biomedical imaging

(12) Biological data mining

(13) Biological Systems Engineering

(14) Biomedical Computational drug discovery

(15) Bio-MEMS and microbioreactors

(16) Biomimetic and self-assembled materials

(17) Bioremediation of polluted sites

(18) Biosensors and molecular diagnostics

(19) Breeding and genetics

(20) Cell and tissue engineering

(21) Cellular and molecular biology

(22) Comparative genomics and annotation

(23) Composition of foods

(24) Computational and Systems Biology

(25) Computational drug discovery

(26) Computational ecology

(27) Computational neurobiology

(28) Computational proteomics

(29) Constraint satisfaction

(30) Control and system engineering for food industry

(31) Crop breeding, genetics & genomics

(32) Diet-related diseases

(33) Domestic animal breeding, genomics & biotechnology

(34) Drug screning and pharmaceutical synthesis

(35) Electronics and instrumentation in food industry

(36) Environmental Biotechnology

(37) Enzyme Engineering

(38) Evolution and phylogenetics

(39) Food & dairy agricultural biotechnology

(40) Food and Nutritional Science

(41) Food bioavailability

(42) Food biotechnology

(43) Food Chemistry and Biotechnology

(44) Food fortification and supplementation

(45) Food microstructure development and characterization

(46) Food Nutrition and Evaluation

(47) Food Packaging, Materials and Equipments

(48) Food processing, preservations and packaging

(49) Food properties including thermal, chemical and mechanical properties

(50) Food safety and hygiene

(51) Food Sensory and Flavours

(52) Food Texture and Rheology

(53) Functional Food and Bioactive Factors

(54) Functional foods, nutrition, nutraceuticals & bioactives

(55) Functional genomics

(56) Gene expression databases

(57) Gene regulation

(58) Gene structure, regulation and modeling

(59) Genetic variation

(60) Heat, mass transfer and fluid flow in food processing

(61) High performance biocomputing

(62) Industrial Biotechnology

(63) Marine & algal biotechnology

(64) Marine Biotechnology

(65) Mathematical and quantitative models of cellular and multicellular systems

(66) Mathematical modeling and software development for food processing purposes

(67) Measuring cellular metabolism and cellular signaling

(68) Meat science

(69) Medical and biological devices

(70) Medical Biotechnology

(71) Micro RNA and RNAi

(72) Microarray data analysis

(73) Microbial community analysis

(74) Microbiology

(75) Microorganism technology

(76) Molecular pharming in plants & animals

(77) Nano Biotechnology

(78) Nanoparticle sequestration in biomolecules

(79) Nanoparticles, nanocomposites, and nanoporous materials for bio-applicationss

(80) Non-ruminant nutrition

(81) Non-thermal food processing

(82) Nutrition and health of the public

(83) Nutrition for people with special needs

(84) Nutritional status of various ages

(85) Ontologies and semantic web systems for biology

(86) Pharmaceutical Biotechnology

(87) Physiology and endocrinology

(88) Plant biotechnology

(89) Plant design using conceptual design techniques

(90) Promoter analysis and discovery, recognition of regulatory elements

(91) Protein and gene delivery systems

(92) RNA and DNA structure and sequencing

(93) Role of ag-biotech innovation for national and international competitiveness

(94) Ruminant nutrition

(95) Seed, fruit & reproductive plant biotechnology

(96) Separation and purification processes for food production

(97) Sustainable Agriculture

(98) Synthetic biological systems

(99) The future of plant genetic engineering

(100) Therapeutic applications of computational biology

(101) Thermal processing

二、參加會議經過：

茲將本次參與會議之經過簡要說明如下：

(一) 2012 年5 月11 日上午10:00 搭乘長榮航空BR707 班機從桃園機場直飛中國廣州，約中午12:00 到達廣州白雲國際機場。

(二) 出海關後搭乘接泊車至廣州天河區南洋長勝酒店(Nanyang King's Gate Hotel)研討會場地。

(三) 約下午14:30 立即向研討會大會註冊報到，並領取研討會會議資料。

(四) 隨後亦向南洋長勝酒店櫃台辦理住宿報到，該飯店外觀乃具有沙皇時期氣勢且金碧輝煌。並於晚上時段(18:00~19:30)參加由主辦單位所舉辦之歡迎晚宴。

(五) 2012 年 5 月12 日

1. 上午時段(08:30~11:30)則參與主辦單位所舉辦且由Prof. Jennifer Ann 主持之開幕典禮，接著是聆聽專題演講（Keynote Speech）分別是 Malaya 大學 Jennifer Ann Harikrishna 教授及南韓 Handong Global 大學的

Wilhelm Holzapfe 教授等主講，演講的主題主要是討論有關生物科技的發展，繼對半導體產業的重視之後，近十年來南韓國家亦在生物科技產業方面投入相當大的人力與物力，故而，在農產、食品及醫藥等生物科技產業方面未來亦將會是臺灣競爭的對象。

2. 下午時段(14:00~18:20)則是開始進行論文發表，總共分爲兩個場次，Session A 主題爲農業、生物及食品技術（Agricultural, Biological, Food Technology），共有計23篇的論文登記爲口頭報告，並在主樓皇廷1(Royal 1, Main Building)舉行，Session B 的主題則爲工程技術（Engineering Technology），共計有20 篇論文登記爲口頭報告，並在主樓皇廷2(Royal 2, Main Building)舉行。

因衡量個人近來實驗的研究方向，故依其論文發表的不同主題內容，分別參與農業、生物及食品技術組(Agricultural, Biological, Food Technology)及工程技術組(Engineering Technology)中相關之場次的發表，並在會議中向與會的各國專家學者請教其實驗研究的技術，而在會中較感興趣之論文主題則有：

- Izaddin et al. 團隊探討 2-Methyl-4-Chlorophenoxy 醋酸層狀雙氫氧化物作爲除草劑載體之理化特徵及控制釋放性能。
- Hou and Shao 團隊提出利用微陣列數據資料作爲腫瘤分類之統計方法及學習技術整合運用。
- Yang et al. 團隊提出在中國北方平原不同耕作系統之土壤凝結特徵研究。

- Mutalib and Mohamed 團隊提出探討在基因組相關性(Genome Wide Association, GWA)之分類方法。
- Jomdecha and Sritarathorn 團隊提出探討利用超音波處理延滯時期(Lag-Time)之酵母增殖模式研究。
- Nurdin et al. 團隊利用冷場發射掃描式電子顯微鏡(Field-emission scanning electron microscope, FESEM)及穿透式電子顯微鏡(Transmission Electron Microscopy, TEM)來探討氧化鐵及二氧化矽複合材料(Fe_2O_3/SiO_2 Nanocomposite)之試驗。
- Ai et al. 團隊所進行的研究”即利用烏龍茶多糖(polysaccharide from Oolong tea)對鏈脲佐菌素誘導(Streptozotocin induced))的糖尿病大鼠的保護效果評估。
- 本人發表之論文其主題爲利用植物(*Mimosa pudica* L.)萃取液生合成奈米銀粒子及其抗菌評估(Biosynthesis and antibacterial assessment of silver nanoparticles using plant extract)。並將所得之奈米銀粒子經電子顯微鏡觀察後其粒徑大小約爲 48 nm ± 10 nm，再利用 cup diffusion method 檢測奈米銀粒子對 *Erwinia carotovora* subsp. *carotovora 3, Erwinia carotovora* subsp. *carotovora 7, Xanthomona axonopodis pv. vesicatoria* XVT 40, 及 *Pseudomonas aeruginosa etc.* 等微生物之抗菌特性，實驗結果對 *E. carotovora* subsp. *carotovora 7, X. axonopodis pv. vesicatoria* XVT 40 and *P. aeruginosa* 具有較佳之抗菌效果，且其

最低之抑菌濃度(minimum inhibitory concentrations, MIC)分別爲 1.7 μM, 3.4 μM, 與 1.7 μM.。

(六)、2012 年 5 月 13 日：

上午時段(08:30~12:20)仍然是論文發表時間,亦分爲二個場地進行，Session A 則計有 22 篇論文登記爲口頭報告，Session B 則計 18 篇論文登記口頭報告。本人一樣是依其發表論文主題選擇參加其場次，其中較感興趣之論文內容摘要如下

- Nurulhuda et al.團隊利用TAPIOCA 發酵萃出液進行奈米碳管(carbon nanotubes, CNT)的生合成技術，同時其生合成的效率相當不錯，並於會中請教Dr. Nurulhuda於進行bio-synthesis CNT試驗時應注意之實驗細節，足可爲未來進行研究時的參考。
- Dadrasnia and Pariatamby 團隊則探討利用添加有機廢棄物進行柴油污染土壤之生體利用率與生物復育成效。
- Hung et al. 團隊則探討自動監測和控制溫室環境之最佳植物生長環境。
- Yahya et al. 團隊探討發展凝膠電泳技術以減少分離 DNA 處理之時間。
- Wang and Chiou 團隊探討癌症化學療法及免疫療法交換模型之控制設計。
- Chang et al.團隊提出對附設於學校建物之雨水收集系統進行評估。
- Chung et al.團隊探討無線感測網路中感測資料型態對

群性能評估之影響。

- Minghat et al.團隊則提出對永續農業在學校發展之驗證分析與策略探討。
- Hsieh et al.團隊所進行的研究”即利用電化學(electron-chemistry)生成二氧化氯(chlorine dioxide)技術”其生成二氧化氯的效果亦相當好，應可作爲本實驗室未來電解生成二氧化氯時的參考。
- Chen and Liu 團隊提出以流體動力學觀點探討快速微粒晶片在細胞融合技術之應用。

(七) 2012 年5 月14 日上午搭乘長榮航空BR708 班機從中國廣州白雲國際機場直飛桃園機場。

三、 與會心得

參與此次2012 年農業、食品與生物工程國際學術會議(2012 International Conference on Agricultural, Food and Biological Engineering , AFBE 2012)之盛會後，除了上述利用TAPIOCA 發酵萃出液進行奈米碳管(carbon nanotubes, CNT)的生合成，以及使用FESEM和TEM探討氧化鐵及二氧化矽複合材料(Fe_2O_3/SiO_2 Nanocomposite)和電化學(electronchemistry)生成二氧化氯(chlorine dioxide)技術的進展，與利用烏龍茶多糖(polysaccharide from Oolong tea)對鏈脲佐菌素誘導(Streptozotocin induced))的糖尿病大鼠的保護效果評估之外，同時也發現奈米技術(Nanotechnology) 與生物技術(Biotechnology)之跨領域結合成爲奈米生物技術(Nano-biotechnology)將會是未來一大趨勢，且將生合成之奈米碳管(carbon nanotubes, CNT)或奈米粒子(nanoparticles)應用於生物病原體之檢測技術將值得關注。

另外，此行亦發現近幾年中國之基礎建設進步相當快速，例如廣州市區已有完整之地下鐵規劃，且在街道中亦有完善的電動無軌公車提供市民選擇，足堪國內加以學習，以減少對綠色環境的衝擊。

同時，近幾年來中國的學術機構大力推動學術發展，並積極的爭取辦理相關國際研討會，其積極主動爭取主辦的精神足爲我們學術界學習，惟於辦理國際研討會之時，其學術主題或領域的選擇相當重要，應儘量避免太過於廣泛，而失去各國相同領域之專家學者共同聚會進行經驗交流分享與心得交換之內涵。

四、建議

爾後應鼓勵師長多參與國際研討會，以增進學校知名度及師長研究能量。

五、其他

攜回研討會議程資料乙份。

六、附錄：

(一)、與會照片

圖一：研討會當日註冊登記報到現場

(二)、研討會之議程

2012 International Conference on Agricultural, Food and Biological Engineering (AFBE 2012)

Organized by:

Hong Kong Industrial Technology Research Centre

Sponsored by:

National Tsing Hua University, Taiwan
The University of Auckland, New Zealand
Handong Global University, South Korea
University of California-Davis, USA
University of Malaya

Co-chairman:

Prof. Cheng-Hsien Liu, National Tsing Hua University, Taiwan
Prof. Mohammed Farid, The University of Auckland, New Zealand
Prof. Wilhelm Holzapfel, Handong Global University, South Korea
Dr. Robert Atwill, University of California-Davis, USA
Prof. Jennifer Ann Harikrishna, University of Malaya

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Prof. Shafique Qadir Memon, Allama Iqbal Open University
Prof. T. Sato, Institute of Gene Ecology, Tohoku University, Japan
Prof. Z. Singh, Curtin University of Technology, Perth, Australia
Prof. H. Ulukan, University of Ankara, Turkey
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Prof. E. Peterson James Cook University, Townsville, QLD, Australia
Prof. H. Kang Yonsei University, Seodaemun-Gu, Seoul, South Korea
Prof. T. Ross University of Tasmania, Hobart, TAS, Australia
Prof. A. Wahid, University of Agriculture
Prof. S. HONG, Chungnam National University
Prof. M. Khanif Yusop, Universiti Putra Malaysia
Prof. J. Ann Harikrishna, University of Malaya
Prof. V. M. Salokhe, Asian Institute of Technology
Prof. M. Kanjanamaneesathian, Silpako Rn University
Prof. M. Baum, Int. Center for Agricultural Research In The Dry Areas
Prof. C. Guglielmo, University Of Bologna
Prof. N. Singh, National Res. Centre on Plant Biotechnology Indian
Dr. Hamdino M.I. Ahmed, Horticulture Research Institute, Egypt.
Prof. Hassan A. M. El. Demerdash, King Saud University

Local Organizing Chairman

Dr. Mark Fong, Hong Kong Industrial Technology Research Centre

ConferenceWebsite

http://www.icafbe.org

Morning, May 12, 2012

Plenary Session (8:30 AM—11:30 AM)

Taihe Palace, 3/F (太和殿)

8:30—8:40 Opening Speech

Dr. Mark Fong, Hong Kong Industrial Technology Research Centre.

8:40—9:30 Keynote Speech

(Chairman: Prof. Cheng-Hsien Liu)

Prof. Jennifer Ann Harikrishna, University of Malaya

9:30—10:10 Keynote Speech

(Chairman: Prof. Jennifer Ann Harikrishna)

Prof. Cheng-Hsien Liu, National Tsing Hua University, Taiwan

9:30—9:50

Tea Break

9:50—10:40 Keynote Speech

(Chairman: Prof. Jennifer Ann Harikrishna)

Prof. Wilhelm Holzapfel, Handong Global University, South Korea

12:00—

Lunch

Afternoon, May 12, 2012

14:00 PM—17:30 PM

Parallel Session A: Agricultural, Biological, Food Technology

2/F, Loyal 1, Main Building (主楼皇廷 1)

(12 minutes for each presentation, including 2-3 minutes of answering questions)

1. Layered Double Hydroxide As Carrier Of Herbicide, 2-Methyl-4-Chlorophenoxy Acetic Acid:Physicochemical Characterization And Controlled Release Properties (AF6018)

Syeikh Mohd Izaddin Sheikh Mohd Ghazali, Mohd Zobir Hussein, Siti Halimah Sarijo

2. Azadirachta indicaExtract as Biopesticide for Controlling Golden Apple Snail, Pomacea canaliculata(AF5863)

Siti Noor Hajjar Md Latip, Maznah Mamat, Mohd Fahmi Keni

3. Stress Analysis of Human Shoulder Using 2D and 3D Finite Element Models (AF5712)

Ching-ChiehYang, Yun-Ting Hsieh, Meng-Kao Yeh

4. Numerical Model Construction of AC Joint Complex for Human Shoulder by Finite Element Method

(AF5716) *Ching-Chieh Yang, Chun-Lin Lu, Rongshun Chen, Meng-Kao Yeh, Jiunn-Jer Wu*

5. Prediction of Stress Upsurge in AC Joint with Subacromial Decompression and Its Clinical Relevance(AF5719)

Ching-Chieh Yang, Chun-Lin Lu, Jiunn-Jer Wu, Rongshun Chen, Meng-Kao Yeh

6. The Hybrid LR-ANN and MARS-ANN Modeling Schemes for Heart Disease Classification (AF6134)

Yuehjen E. Shao, Chia-Ding Hou

7. Integrated Use of Statistical-Based Approaches and Machine Learning Techniques for Tumors Classification Using Microarray Data (AF5684)

Chia-Ding Hou, Yuehjen E. Shao

8. Soil Aggregates Features under Different Tillage Systems In North China Plain (AF5372)

ZhichenYang, Yizhong Lv, Liandi Zhou, Hong Li, Danfeng Sun, Miao Yu

9. Using Data Mining to Simulating the Impact of Implantation of Tw-DRGs on the Income of Medical Specialties (AF5405)

Yuan-Huei Huang, Che-Wei Chang

10. Constructing a grey forecast model to analysis the impact of implantation Tw-DRGs on the income of orthopedics (AF5437)

Yuan-Huei Huang, Che-Wei Chang

11. The Biological Effect of a Radix Dipsaci Combined with Ultrasound on the MG-63 Osteoblast-like Cells (AF5509)

Wen-Tao Huang, Ko-Nien Shih, Yi-Zhu Lin

12. Tithonia Diversifolia Extract Induced DNA damage via ROS/p38MAPK Activating Cascade Involvement (AF5835)

Wen-Chieh Lin, Mei-Yu Huang,May-Hua Liao

13. Study on Surface-hydrolyzed Poly(butylenes succinate)/Hydroxyapatite Composite Scaffolds for Cartilage Regeneration (AF5685)

Paweena Uppanan, Preyapan Meesap, Boonlom Thavornyutikarn, Wasana Kosorn, Wanida Janvikul

14. Recycling of Cellulose Ethers from Skim Natural Rubber Recovery Process (AF5827)

Chaveewan Kongkaew, Chotiros Dokkhan, Surapich Loykulnant

15. Use of Cellulose Ethers as Creaming Agents for Skim Natural Rubber Latex (AF5828)

Chotiros Dokkhan，Chaveewan Kongkaew, Surapich Loykulnant

16. Study on Classification Methods in GenomeWide Association (AF6095)

Sofianita Mutalib, Azlinah Mohamed

17. Properties of dry natural rubber produced by novel continuous process (AF6017) *Puripong Wannavilai*

18. A Bioinformatics Approach to Model and Analyze an Industrial Radiation Therapy System with Respiratory Compensation (AF5478)

Ka Lok Man, Tomas Krilavičius, Kaiyu Wan

19. The Observation of Human Genetic Research Regulation in Taiwan (AF5125) *Fa-Chang Cheng*

20. Co-electrospinning with ethanol aqueous solution for preparing high quality Zein nanofibers (AF5746)

Deng-Guang Yu, Xia Wang, Zhi-Chao Liang, Zhi-Jie Chen

21. Kinetics and Thermodynamics of Paralytic Shellfish Poisoning Adsorption on Chitosan (AF6045)

Wancui Xie, Xiaoli Liu, Xihong Yang, Chaohua Zhang, Zhongyuan Bian

22. Protective Effect of Polysaccharide from Oolong tea against Streptozotocin induced diabetic rats (AF5676)

Zhi Yu, Yun Zhang, Jirong Zhou, Dejiang Ni, Yujie Ai

23. Bacteriostasis Testing in Vitro of Several Common Chinese Medicinal Herbs upon Esherichia coli (AF5747)

Dehai Li, Lei Yang, Enling Hou, Chunyang Zuo

Afternoon, May 12, 2012

14:00 PM—17:30 PM

Parallel Session B: Engineering Technology

2/F, Loyal 2, Main Building (主楼皇廷 2)

(12 minutes for each presentation, including 2-3 minutes of answering questions)

1. Effect of Annealing Temperature on Pd–B/γ-Al2O3 Activity and Selectivity for Palm Oil Hydrogenation (AF5488)

Abdulmajid Alshaibani，Zahira Yaakob，Ahmed Alsobaaib, Miskandar Sahri

2. Sustainable Building Design Framework: Covering Intelligent Building, User Comfort and Energy Efficiency (AF5130)

M. Z. Abd. Majid, H. Lamit, A. Keyvanfar, A. Shafaghat, Izran Sarrazin Mohammad, T. A. Malik, M. Pirmohammadi

3. Comparison Study of Mango Packaging Materials (AF5674)

Somchai Wongsuriyasaka, Panya Srichandrb

4. The Path Walkability Index (PAWDEX) Model: To Measure Built Environment Variables Influencing Residents' Walking Behavior (AF5744)

H. B. Lamit, A. Shafaghat, M. Z. Abd. Majid, A. Keyvanfar, Mohd Hamdan Bin Ahmad, T. A. Malik

5. Quantifying Skin Properties Using a Novel Integration of Experiment-Finite Element Simulation and Skin Pre-stretch Model (AF5977)

Jamaluddin Mahmud, Cathy A Holt, Sam L Evans, Nor Fazli Adull Manan

6. Fragment Reweighting in Ligand-based Virtual Screening (AF5468)

Ali Ahmed, Naomie Salim, Ammar Abdo

7. Wavelength Selection in Visible and Near Infrared Spectra for Detection of Bruises on Apples (AF5416)

Xuan Luo, Teruo Takahashi, Shuhuai Zhang

8. Create an evolution of the Innovation model- A case study base on TRIZ theory (AF5514)

Yun-Tien Ma, Pei-Yu Hsieh

9. Double Stacked Interdigital Ppy-PVA Supercapacitor for Compact Packaging and Improved Capacitance Performance (AF5994)

Hafzaliza Erny Zainal Abidin, Azrul Azlan Hamzah, Burhanuddin Yeop Majlis, Jumril Yunas*

10. Simple fabrication technique of thermopneumatic driven microactuator for fluid transport purposes(AF5892)

Norihan Abdul Hamid, Jumril Yunas, Mimiwaty Mohd Noor, Burhanuddin Yeop Majlis

11. Fe2O3-SiO2 nanocomposite derived from Bagasse Ash for Cr(VI) Removal (AF5862)

Patcharin Worathanakul, Panchana Mothong, Pimluck Engkawara

12. Fabrication and Mechanical Behavior of Al/APC-2 Centrally Notched Nanocaomposite Laminates at Elevated Temperature (AF6143)

Ming-Hwa R. Jen， Yi-Chun Sung，Che-Kai Chang，Chun-Kan Liu，Feng-Chi Hsu

13. Nano-toxicology in Engineering: Health Implication of Nano-materials in Building (AF5483)

Yee Lin Lee, Hamzah Abdul-Rahman, ChenWang

14. The Integration of RAID and Smart Phone for Mobile Nursing Information System Development (AF5269)

Chen-ShuWang, Shiang-Lin Lin, Meng-Yuan Hsieh

15. Simultaneous Organic Removal and Nitrification Using Calcium Dosed Aerobic Granular Sludge During SBR Star-up (AF6107)

Fenghao Cui, Inhwan Song, Moonil Kim

16. Applying C4.5 learning program to classification of Tw-DRGs Medical Specialties (AF5447)

Yuan-Huei Huang, Hao-En Chueh,Che-Wei Chang,Kai-Sheng Chuang

17. Week-ahead Price Forecasting for Agricultural Products Based on Adaptive SlidingWindow, BP and RBF Neural Network (AF5775)

Quanying Zhu, Yonghua Yin, Pei Zhou, Yunyang Yan, Sunqun Cao

18. Study on Reliability of Slanted Micro-Cantilever under Shock Stress (AF6167)

Junyong Tao，Bin Liu，Xiaotao Li， Yun-an Zhang

19. Pore Size Controllable preparation for low density porous nano-carbon (AF5995)

Yaning Feng, JuanjuanWang , Liling Ge , Bailing Jiang , Lei Miao, Masaki Tanemura

20. Preparation and Characterization of Novel Chitosan-based Microcapsule Containing Patchouli Oil (AF5580)

Ziming Yang, Maofang Huang, Zheng Peng, Yuxin Pang, Lingxue Kong, Guangtao Han,Puwang Li

Morning, May 13, 2012

8:30 AM—12:00 AM

Parallel Session A: Agricultural, Biological, Food Technology

2/F, Loyal 1, Main Building (主楼皇廷 1)

(12 minutes for each presentation, including 2-3 minutes of answering questions)

1. Synthesis of carbon nanotubes from fermented tapioca extract (AF6003)

I. Nurulhuda, R. Poh, M.Z. Mazatulikhma, M. Rusop

2. Rapid microparticle pairing chip via hydrodynamics for cell fusion applications (AF5680)

Hungpo Chen, Cheng-Hsien Liu

3. Bioavailability and bioremediation of diesel fuel-contaminated soil using organic wastes as supplement (AF5855)

Arezoo Dadrasnia, Agamuthu Pariatamby

4. Micrometeorological Technique for Estimation of Nitrate dry deposition over Forest in Tropical Climatology (AF5569)

Kan Khoomsab，Pojanie Khummongkol

5. Treatment of Cr(VI) using PVA-alginate Ferro Photo Gels under Different Types of Lamps (AF5590)

Ani Idris, Effaliza Misran, Noordin Mohd Yusof

6. Effect of Photoperiod on the Growth of Unicellular Microalgae Nannochloropsis sp. (AF5413)

Suzana Wahidin, Ani Idris

7. Distribution and Source of Polycyclic Aromatic Hydrocarbons in the Sediments of Northern Kaohsiung Harbor, Taiwan (AF6161)

Cheng-Di Dong, Chih-Feng Chen, and Chiu-Wen Chen

8. Real-time Detection of Tannin Concentration of Crude Gall Using Dynamic Microfluidic Centrifugal-and-fluorescence Platform (AF5620)

Hsing-Cheng Chang, Jung-Chih Lin, San-Shan Hung, Chun-Han Li, Che-Ming Chang, Chern-Sheng Lin

9. Detection of Real-time Tannic Acid Concentration Based-on Quasi-static Centrifugal-and-fluorescence Microfluid Technology (AF5550)

Hsing-Cheng Chang, Jung-Chih Lin, San-Shan Hung, Chun-Han Li,Ya-Hui Chen, I-Nan Chang, and Che-Ming Chang*

10. Particle Swarm Optimization for Tissue Engineering Scaffold Parameters Design (AF5854)

Nattapon Chantarapanich,Puttisak Puttawibul,Kriskrai Sitthiseripratip,Sedthawatt Sucharitpwatskul,Pongnarin Jiamwatthanachai

11. Automatic monitoring and Control for Green House Environment Base on Optimal Plant Growing Condition (AF5654)

San Shan Hung, Hsing Cheng Chang，Pao Ti Kao

12. Improvement of Yields and Surface Areas of Biochar from Chicken Manure (AF5466)

Minh-Viet Nguyen, Byeong-Kyu Lee

13. Critical Review on the Customer Satisfaction Metrics for project success in Construction (AF5686)

Pooria Rashvand, Muhd Zaimi Abd Majid, Khairulzan Yahya, Rosli Mohamad Zin, Rozana Zakaria*

14. Development of Gel Electrophoresis Unit to Reduce DNA Separation Process Time –A Proof of Concept (AF5759)

Azli Yahya, Mohammed Rafiq, Razaudeen Zulkifli, Muhammad Arif, Trias Andromeda, Ameruddin Baharom

15. Temperature Impact on Reforming ofWood Derived Pyrolysis Gas for Hydrogen Production and Tar Reduction (AF5427)

Thawatchai Wongchang, Suthum Patumsawad, Bundit Fungtammasan

16. Quarter Milking Management System for Dairy Cow UsingWireless Sensor Technologies (AF6077)

Chien-Hsing Chen, Ming-Chih Chen, Chong-Yu Siang, Jung-Sheng Yang

17. Development of a Coconut-Shell Stepping-Massage Prototype to Improve Sensations in the Feet of Diabetic Patients (AF5731)

Dusanee Supawantanakul, Pichet Banyati, Thanawat Imsomboon, Laongtip Mathurasa

18. Controller Design for Cancer Chemo-Immunotherapy with Switched Model (AF5225)

Chi-Jo Wang, Juing-Shian Chiou

19. Quality of Treatment Planning Evaluation for Nasopharyngeal Carcinoma Using Artificial Neural Networks Intelligence System (AF6013)

Tsair-Fwu Lee, Tsung-I Liao, Pei-Ju Chao, Hui-Min Ting, Li-Fu Wu, Shih-Yao Lin, Jia-Ming Wu, Wen-Pen Chen

20. Simulation of Ventilatory Responses to Dead Space and CO2 Inhalation with Optimal Respiratory Control Model (AF5903)

Shyan-Lung Lin, Nai-Ren Guo

21. The effect of bioplastic mixed in organic fertilizer on corn growth and soil properties (AF6055)

Rochana Tangkoonboribun, Suriya Sassanarakkit, Rattana Tantisiriwit, Preecha Rungkvae, Prasit Bumrungsuk

22. Assessment the Environmental Impacts of PLA/Starch and PET Boxes Using LCA Methodology : Cradle toWaste Treatment (AF6019)

Unchalee Suwanmanee, Thanawadee, Leejarkpai, Thumrongrut Mungcharoen

Morning, May 13, 2012

8:30 AM—12:00 AM

Parallel Session B: Engineering Technology

2/F, Loyal 2, Main Building (主楼皇廷 2)

(12 minutes for each presentation, including 2-3 minutes of answering questions)

1. The Assessment on the Rain Water Harvesting System Attached in School Building, Taiwan (AF5638)

Li Zone Chang, Jen Chun Wang, Yih Feng Chang

2. Impact of Sensor Data Patterns on Performance Evaluation of Clustering Schemes inWireless Sensor Networks (AF5839)

Dongmin Choi, Sangman Moh, Ilyong Chung

3. Electro-mechanical Integrated Models of the PMSG-based Turbine Generator Units (AF5536)

Chi Hsiang Lin

4. Design of Multi-Sensory Integrated Interactive Robot with Genetic Algorithm (AF5226)

Ming-Yuan Shieh, Juing-Shian Chiou

5. Omni-directional Control System for Android Robot with Genetic Algorithm (AF5227)

Ming-Yuan Shieh, Juing-Shian Chiou

6. Choquet integral with respect to high order extensional L-measure and its application (AF5971)

Shang-Ling Ou, Yih-Chang Ou, Hsiang-Chuan Liu

7. The generation of chlorine dioxide by electrochemistry technology (AF5956)

Yi-Tze Tsai, Chen-Yu Chang, Yung-Hsu Hsieh

8. The Intelligent Quality Strategy of Baking Stores by Using Intelligent Quality Prediction (AF5748)

Chung-Lin Huang, Cong-Hui Huang, Chung-Chi Huang

9. Development of Cloud Computing Based Intelligent E-Pedigree System with Quality Assessment and Auto Foolproof in Food Industry (AF5749)

Chung-Chi Huang, Cong-Hui Huang, Chung-Lin Huang

10. Oseto tissue regeneration on PCL with biomedical ceramic materials (AF5586)

Ming-Jyh Chern, Yung-Kang Shen,, Jia-Hsiang Hung

11. Application of Intelligent Energy Saving in Smart Greenhouse Farm with Wireless Technique (AF5612)

Cong-Hui Huang, Chung-Chi Huang, Chung-Lin Huang

12. Technologies for Water and Electricity Efficiencies in Greenhouse (AF5779)

Ming-Rong Lee, Cong-Hui Huang

13. Multi-response Surface Optimization of a Cryogenic Freezing Process via Variable Neighborhood Modified Simplex Search (AF5682)

Rapeepat Uporn, Pongchanun Luangpaiboon

14. Effect of Crowning on Differential Pinion Shaft Contact in the Patial Elasto-hydrodynamic

Lubrication (AF6184)

Young Whan Park, TaeWan Kim

15. Development of Sustainable Agriculture Subjects in Secondary Academic Schools: A Comfirmatory Factor Analysis (CFA) Approach (AF5783)

Asnul Dahar Minghat, Ruhizan M.Yasin, Yahya Buntat, Yusri Kamin, Adnan Ahmad

16. Nano-Particles in the Flow Field Velocity Analysis (AF5453)

Ming-Chi Chiou , Wen-Zong Hsu

17. Numerical Study of a Three-dimensional Modified Graft for the End-to-Side Anastomosis (AF5961)

Jyh-Haw Tang, Bo-Chun Wu*

18. Immobilisation capacity of cement hydration against the hexavalent chromium (AF6108)

Ki Yong Ann, Min Sun Jung

19. Post Occupancy Evaluation Assessment Model for Low Energy Office Buildings (AF5957)

M. Z. Abd. Majid, H. Ganjbakhsh, A. Abdullah, Izran Sarrazin Mohammad

(三)、研討會發表之論文摘要

Biosynthesis and Antibacterial Assessment of Silver Nanoparticles Using Plant Extract

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Abstract

The plant extract (*Mimosa pudica* L.) is used in the *in vitro* intracellular synthesis of silver nanoparticles. The results showed that aqueous silver ions are reduced to solution when exposed to aqueous extract from the leaves of *Mimosa pudica*, thereby leading to the formation of silver hydrosol. The SEM observed that the silver nanoparticles were approximately 48 nm ± 10 nm in dimension. The biosynthetic nano-silver antibacterial activity was determined using the cup diffusion method against bacteria including *Erwinia carotovora* subsp. *carotovora 3, Erwinia carotovora* subsp. *carotovora 7, Xanthomona axonopodis pv. vesicatoria* XVT 40, *and Pseudomonas aeruginosa etc.* The most significant antibacterial activity was found against *E. carotovora* subsp. *carotovora 7, X. axonopodis pv. vesicatoria* XVT 40 and *P. aeruginosa* observed in comparison to the positive controls. The minimum inhibitory concentrations (MIC) were approximately 1.7 μM, 3.4 μM, and 1.7 μM, respectively.

Keywords: Biosynthesis, silver nanoparticles, minimum inhibitory concentration(MIC)

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