

報告人姓名	林暉翔	就讀校院 (科系所)	國立屏東科技大學 熱帶農業暨國際合作系	博士班研究生
時間	May 28th to May 30th 2018	本會核定補 助文號		
會議地點	Jeju, Korea			
會議名稱	(中文) 第九屆農業暨生物系統工程機具機械研討會			
	(英文) The 9th International Symposium on Machinery and Mechatronics for Agricultural and Biosystem Engineering			
發表論文 題目	將智慧農業已問題導向教學導入高職學校生物機電教育			
	USING PROBLEM-BASED LEARNING APPROACH INTRODUCE SMART AGRICULTURE INTO BIO-MECHATRONICS EDUCATION FOR VOCATIONAL HIGH SCHOOL			

報告內容應包括下列各項：

一、參加會議經過

05/27 Departed from Kaohsiung, Taiwan

05/27 Arrived in Incheon, Seoul, Korea

05/27 Transferred to Gimpo Airport, Seoul, Korea

05/27 Departed from Gimpo to Jeju

05/27 Arrived in Jeju, Korea

05/28 Registration

05/28 Attended opening ceremony and plenary session

05/28 Oral presentation at (RmA-1), Chairperson: Prof. Yoshinari Morio (Mie University, Japan)

05/29 Attended different sessions of conference

05/30 Attended different sessions of conference

05/31 Departed from Jeju to Gimpo airport, Seoul, Korea.

05/31 Departed from Incheon, Seoul, Korea

05/31 Arrived in Kaohsiung, Taiwan

二、與會心得

第 9 屆農業和生物系統工程機械與機電一體化國際研討會 (ISMAB 2018) 由韓國農業機械學會 (KSAM) 組織主辦。本次會議並由日本農業機械與食品工程師協會

(JSAM) 和中國農業機械學會 (CIAM) 共同主辦。該組織每兩年舉辦一次國際會議。我是台灣屏東國立屏東科技大學 (NPUST) 的熱帶農業暨國際合作系 (DTAIC) 博士生。我目前正在致力於研究使用農業廢棄物來生產活性化合物以及智慧農業的發展，也就是希望農業 4.0 的政策普遍用於台灣的農業市場。更希望能透過新教學方法 (問題導向學習模式) 向下從高職教育開始扎根。

我的演講題目是：將智慧農業已問題導向教學導入高職學校生物機電教育，以 10 分鐘

的有限時間呈現，以及來自委員會的 5 分鐘問題和討論來改善肉的嫩度。觀眾對我的演講非常感興趣，並在我的口頭報告後提出了很多問題。我覺得這是我的偉大成就，為他們帶來了新的東西。

三、考察參觀活動（無是項活動者省略）

四、建議

該會議為學生提供了卓越的學術體驗，不僅提供了更多信心分享知識的經驗，還提供了與各自領域專家見面的經驗和機會。會議還提供了我們更新我們的技術開發知識和研究的機會，這些知識正在成為我們科學領域的最新趨勢。因此，為國際和國內學生提供國際研討會的資金非常必要，以便在其應用中分配和使用。

五、攜回資料名稱：我的稿件已經在會議論文集集中被接受並印製出。

六、其他（See Attachment）

4.大會資料

PROGRAM

2018 ISMAB
www.ISMAB2018.org

The 9th International Symposium on
**Machinery and Mechatronics for
Agricultural and Biosystems Engineering
(ISMAB2018)**

May 28~30, 2018
Jeju KAL Hotel, Jeju, Korea

Organized by
Korean Society for Agricultural Machinery (KSAM)

Co-Organized by
Japanese Society of Agricultural Machinery and Food Engineers (JSAM)
Chinese Institute of Agricultural Machinery (CIAM)

Sponsored by
KIST Korea Institute of Science & Technology
Jeju CVB Jeju Convention & Visitors Bureau
Upland Field Machinery Research Center
Agricultural Robotics and Automation Research Center
Smart Farm Research Center

Opening Ceremony and Plenary Session

>> May 28 (Monday)
Room A

Opening Ceremony							
Moderator : Prof. Sun-Ok Chung Chungnam National University							
09:15 - 09:45	<table border="1"> <tr> <td>Opening Address</td> <td>Prof. Chang-Hyun Choi Chairman of the Organizing Committee</td> </tr> <tr> <td>Welcome Address</td> <td>Prof. Jong Hoon Chung President of Korean Society for Agricultural Machinery</td> </tr> <tr> <td>Congratulatory Address</td> <td>Dr. Yong-Bom Lee Director General of the National Institute of Agricultural Sciences</td> </tr> </table>	Opening Address	Prof. Chang-Hyun Choi Chairman of the Organizing Committee	Welcome Address	Prof. Jong Hoon Chung President of Korean Society for Agricultural Machinery	Congratulatory Address	Dr. Yong-Bom Lee Director General of the National Institute of Agricultural Sciences
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Congratulatory Address	Dr. Yong-Bom Lee Director General of the National Institute of Agricultural Sciences						
09:45 - 10:00	Group photo						
Plenary Session							
Chairperson : Prof. Kyeong-Hwan Lee Chonnam National University, Korea							
10:00 - 10:20	The Future Development of Agriculture Machinery in Taiwan Prof. Pehng-Kwei Lei President of CIAM, National Chung Hsing University						
10:20 - 10:40	Sensing Technologies of Precision Livestock and Aquaculture toward Global Population 9 Billion Time Prof. Naoshi Kondo President of JSAM, Kyoto University						
10:40 - 11:00	Recent Progress of Agricultural Machinery in Korea Prof. Jong Hoon Chung President of KSAM, Seoul National University						
11:00 - 11:20	Agricultural and Biological Engineering for a Sustainable World Prof. Lalit R. Varma University of Arkansas, ASABE Past-President						
11:20 - 11:40	Proximal Soil Sensing and Sensor Fusion in Precision Agriculture Dr. Kenneth A. Sudduth Agricultural Engineer, Cropping Systems and Water Quality Research Unit, USDA-ARS, University of Missouri						
11:40 - 12:00	VRT Oil Palm Fertilizer Applicator And Rice Yield Mapping System Prof. Azmi Dala Yahya Universiti Putra Malaysia						

● ● ● Plenary Session ● ● ●

May 28 (Mon)

A (RmA) May 28(Mon) 10:00 – 11:45

Chairperson: Prof. Kyeong-Hwan Lee (Chonnam National University, Korea)

- A-1 The Future Development of Agriculture Machinery in Taiwan
Prof. Perng-Kwei Lei (President of CIAM, National Chung Hsing University)
- A-2 Sensing Technologies of Precision Livestock and Aquaculture toward Global Population 9 Billion Time
Prof. Naoshi Kondo, (President of JSAM, Kyoto University)
- A-3 Recent Progress of Agricultural Machinery in Korea
Prof. Jong Hoon Chung (President of KSAM, Seoul National University)
- A-4 Agricultural and Biological Engineering for a Sustainable World
Prof. Lalit R. Verma (University of Arkansas, ASABE Past-President)
- A-5 Proximal Soil Sensing and Sensor Fusion in Precision Agriculture
Dr. Kenneth A. Suduth (Agricultural Engineer, Cropping Systems and Water Quality Research Unit, USDA-ARS, University of Missouri)
- A-6 VRT Oil Palm Fertilizer Applicator and Rice Yield Mapping System
Prof. Azmi Dana Yahya (Universiti Putra Malaysia)

● ● ● Oral Sessions ● ● ●

May 28 (Mon)

GA#1 (RmA-1) May 28(Mon) 13:00 – 14:45

Chairperson: Prof. Yoshinari Mario (Mie University)

- GA1-1 Global Climate Indices and Its Effect to Local Rainfall and Productivity of Rainfed Sugarcane (*Saccharum officinarum*) 43
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- GA1-2 Implementation Strategies of Knowledge Management for Irrigation Management Case in Lodoyo Irrigation System Indonesia 43
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- GA1-3 Pressure Distribution Assessments for a Beam of a Flat Wiper Blade 44
*D.-C. Huang, M.-Z. Zhang, Z.-Q. Huang, K.-C. Liao**
- GA1-4 Classifying Endemic Fagaceae Species in Taiwan using Leaf Images 44
*Hao-Chun Hsu, Cheng-Hao Lee, Chih-Kai Yang, Fang-Hao Chu, Ming-Jer Tsai, Yan-Fu Kuo**

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- GA1-5 The Role of University in System of Rice Intensification Development Model and Its Implication: UGM Case 45
Sigit Supadmo Arif, Rizki Muflikhat, Suparmi, Erni Romasari*
- GA1-6 Different Generation of Air Ultrafine Bubble on Hydroponic Solution for Lettuce Growth in Plant Factory 45
Indrawan Cahyo Adilaksono, Hiroshi Shimizu, Hiroshi Nakahama, Juro Miyazaki, Katsuki Ohdoi*
- GA1-7 Improving Meat Tenderness by using Protease Extract from Paddy Oats (*Gaetum gremom*) Fruit Peel 46
*Cahyo Indarto, Shiyang-Chwen Sheu, Pomin LI**
- GA1-8 Using Problem-based Learning Approach Introduce Smart Agriculture into Bio-mechatronics Education for Vocational High School 46
*Spencer LIN, Pomin LI**

BE#1 (RmA-1) May 28(Mon) 15:15 – 17:45

Chairperson: Prof. Jangho Kim (Chonnam National University)

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- BE1-2 Development of PEI / Calcium Phosphate Complex as Non-viral Carrier using Horse Bones as Agricultural By-products 47
*Myungchal Lee, Hoon Seomwoo, Kyoung-Je Jang, Sangbae Park, Jong Hoon Chung**
- BE1-3 Study on in vitro Osteogenic Differentiation on Calcium Phosphate Composite using Naturally Derived Size Controlled Hydroxyapatite and Chitosan 48
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- BE1-4 Development of Leaves-inspired Micro- and Nanostructures for the Manipulation of Functional Engineering Platforms 48
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- BE1-5 Bone Drilling System for Quantifying Hand Feeling in Orthopedic Surgery 49
C.-Y. Wu, J.-Y. Su, C.-S. Hsu, Y.-H. Chen, K.-F. Chang, C.-C. Huang, H.-M. Wu, Y.-C. Tsai*
- BE1-6 An IoT based Temperature Control System for Honey Bee Colony Winter Loss Prevention 49
*Sheng-Hao Chen, Hung-Jen Lin, Yu-Cheng Yang, En-Cheng Yang, Joe-tir Jiang**
- BE1-7 Iron Oxide Nanoparticles-incorporated Alginate Capsules as Magnetic Field-assisted Potential Delivery Platforms of Agriculture Pesticides and Biocontrol Agents 50
*Dohyeon Lee, Sungmin Park, Sanho Park, Daan Kim, Woosun Kim, Hoon Seomwoo, Sujin Kim, Jangho Kim**

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圖為簡報會場



圖為屏科大與會人員在會場合照