



## About the Conference



# Opening Ceremony


















**WELCOME**

**44<sup>th</sup>** ASAIHL THAILAND CONFERENCE

12<sup>th</sup> December 2019

The Association of Southeast Asian Institutions of Higher Learning (ASAIHL)

at Aranya Grand Hotel Bangkok, Thailand






**RI<sup>2</sup>C 2019**

2019 Research, Invention, and Innovation Congress

DECEMBER 11-13, 2019 Arnom Grand Hotel, Bangkok, Thailand















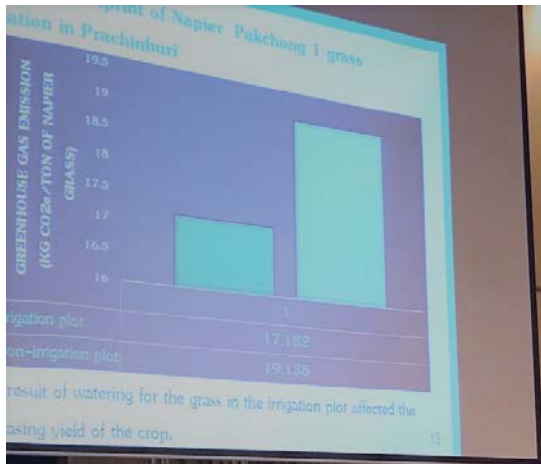







## Presenter iSS – December 12, 2019







KING MONGKUT'S UNIVERSITY OF TECHNOLOGY NORTH BANGKOK



# Mobility of Polyethylene Glycol-Modified Urethane Acrylate (PMUA) Nanoparticles in Soils

WARAPONG TUNGITTIPLAKORN, VIRANART KONGBUA, ANYAMANE TULAPHAN, AND KANNIKA KAEWTAWEE  
KING MONGKUT'S UNIVERSITY OF TECHNOLOGY NORTH BANGKOK, THAILAND


EXIT







# Investigation of Morphology and Photocatalytic activities of electro spun chicken feather keratin/PLA/TiO<sub>2</sub>/Clay nanofibers



**Siriorn Isarankura Na Ayutthaya**  
*Department of Power Engineering Technology,  
College of Industrial Technology*  
**King Mongkut's University of Technology North Bangkok**

**Jatuphorn Wootthikanokkhan**  
*Hybrid Nanomaterials for Alternative Energy (HyNAE),  
School of Energy, Environment and Materials*  
**King Mongkut's University of Technology Thonburi**









2019 Research, Invention, and Innovation Congress (RI2C2019)



## Electrochemical Oxygen Reduction Reaction Performance of Water Hyacinth Derived Porous Non-precious Electrocatalyst in Alkaline Media

By

Kriangsak Ketpang<sup>1</sup>, Jenkamol Prathum<sup>1</sup>, Punnarut Juprasat<sup>1</sup>, Wararak Junla<sup>1</sup>, Kittisak Wichianwat<sup>1</sup>, Apichat Saejio<sup>2</sup>, Chedthawut Poompipatpong<sup>3,4</sup>, and Noppavan Chanunpanich<sup>5,6</sup>

12 November 2019

<sup>1</sup> Faculty of Science, Energy and Environment, KMUTNB-Rayong

<sup>2</sup> Faculty of Engineering and Technology, KMUTNB-Rayong

<sup>3</sup> Automotive Eco-Energy and Industrial Product Standard Research Center, STRI, KMUTNB

<sup>4</sup> College of Industrial Technology, KMUTNB

<sup>5</sup> Integrated Nanoscience Research Center, STRI, KMUTNB

<sup>6</sup> Department of Industrial Chemistry, Faculty of Applied Science, KMUTNB

XIT





2019 Research, Invention, and Innovation Congress (RI<sup>2</sup>C 2019)  
Bangkok, Thailand, 11-13 December 2019



# Highly Active and Durable Transition Metal-Coordinated Nitrogen Doped Carbon Electrocatalyst for Oxygen Reduction Reaction in Neutral Media



by  
Kriangsak Ketpong<sup>1</sup>  
Apikom Boonkitkason<sup>2</sup>  
Nattawan Pitipuech<sup>2</sup>  
Chedthavit Poornipatpong<sup>3</sup>  
Jakkid Sanetuntikul<sup>2\*</sup>  
Sangaraju Shanmugam<sup>4</sup>

12 - 12 - 2019

<sup>1</sup> Faculty of Science, Energy and Environment (SCEE), KMUTNB-Rayong, THAILAND

<sup>2</sup> Faculty of Engineering and Technology (EAT), KMUTNB-Rayong, THAILAND

<sup>3</sup> College of Industrial Technology (CIT), KMUTNB, THAILAND

<sup>4</sup> Department of Energy Science & Engineering (ESE), DGIST, Republic of KOREA







60 NB

R²C

# Rapid drying of high-moisture paddy using a pneumatic dryer with corrugated-surface drying column

Presented by  
**Aswin Yodrux<sup>1,\*</sup>**  
Research Members  
**Chatchai Nimmol<sup>1</sup>**  
**Anucha Hirunwat<sup>1</sup>**

<sup>1</sup>Department of Materials Handling and Logistics Engineering,  
Faculty of Engineering,  
King Mongkut's University Technology North Bangkok,  
Bangkok, 10800, Thailand



# Input/output Linearization Control Technique for Anaerobic Digestion Reactor with Recirculation

Sura Srisuddee<sup>1</sup>, Malinee Sriyanun<sup>1</sup>, Chanin Panjapornpon<sup>2</sup>, and Atthasit Tawai<sup>1\*</sup>

<sup>1</sup> Chemical and Process Engineering Program, The Srinthorn International Thai-German Graduate School of Engineering, King Mongkut's University of Technology North Bangkok, Bangkok 10800, Thailand

<sup>2</sup> Department of Chemical Engineering, Faculty of Engineering, Kasetsart University, Bangkok 10900, Thailand

Presented by : Mr. Sura Srisuddee



**TGGS** Thai-German  
Graduate School  
of Engineering

**CPE** Chemical & Process  
Engineering













# Preliminary analysis of hydrogen production integrated with proton exchange membrane fuel cell

*Lida Simasattikul<sup>1\*</sup>, Suksum Amornraksa<sup>2</sup>, Natcha Wangprasert, and Thanaporn Wongjirasavat<sup>1</sup>*

<sup>1</sup>Department of Industrial Chemistry, Faculty of Applied Science, King Mongkut's University of  
Technology North Bangkok, 10800 Thailand

<sup>2</sup>The Sirindhorn International Thai-German Graduate School of Engineering (TGGS) King  
Mongkut's University of Technology North Bangkok, 10800 Thailand

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# Development of Purification Process using Electrocoagulation Technique for Biodiesel Produced via Homogenous Catalyzed Transesterification Process of Refined Palm Oil

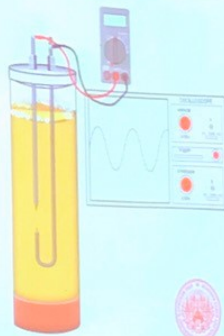


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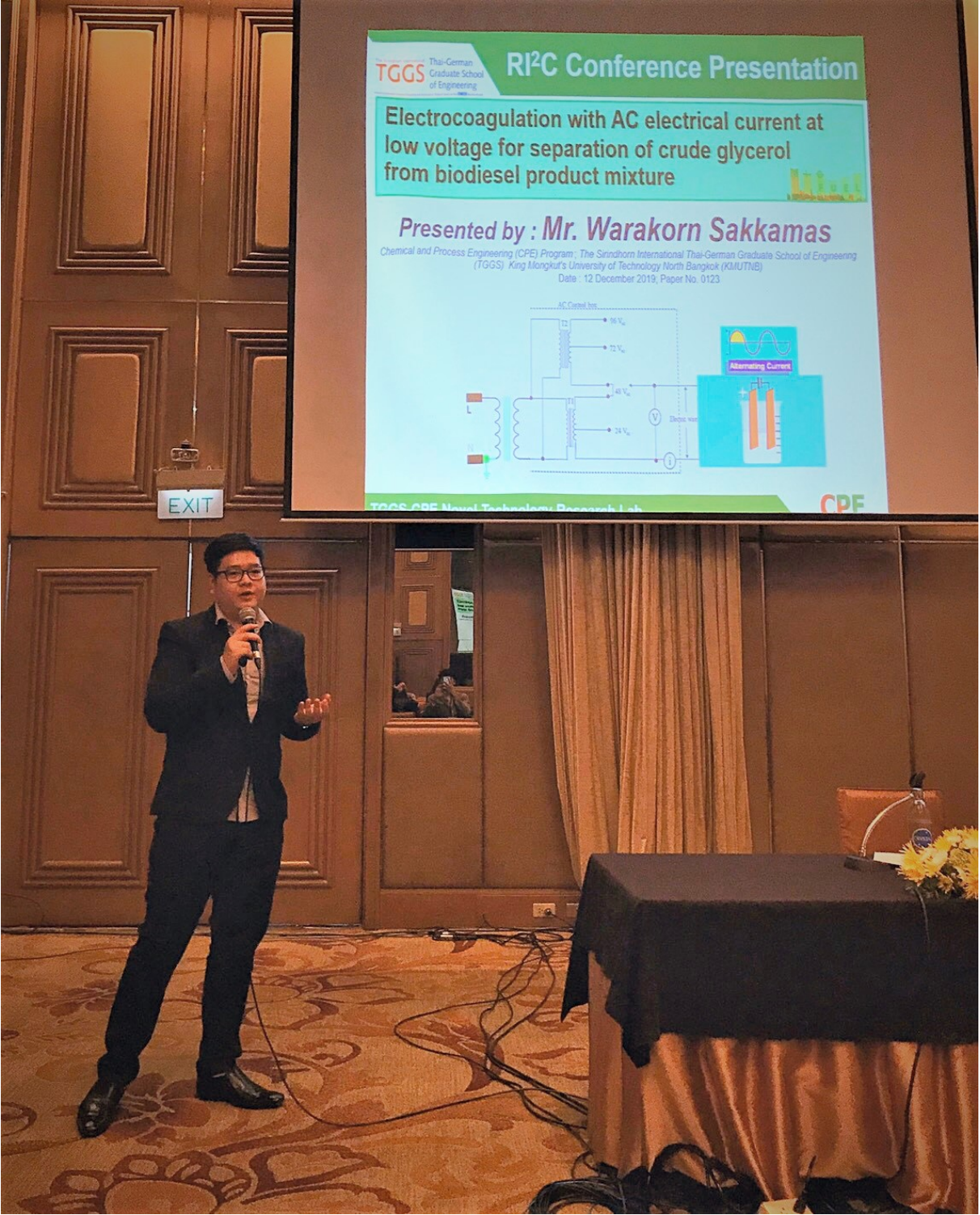
**Ms. Rossarin Ampairojanawong**

Chemical and Process Engineering (CPE) Program  
The Sirindhorn International Thai-German  
Graduate School of Engineering (TGGS)  
King Mongkut's University of Technology  
North Bangkok (KMUTNB)

Date : 12 December 2019  
Paper No.122



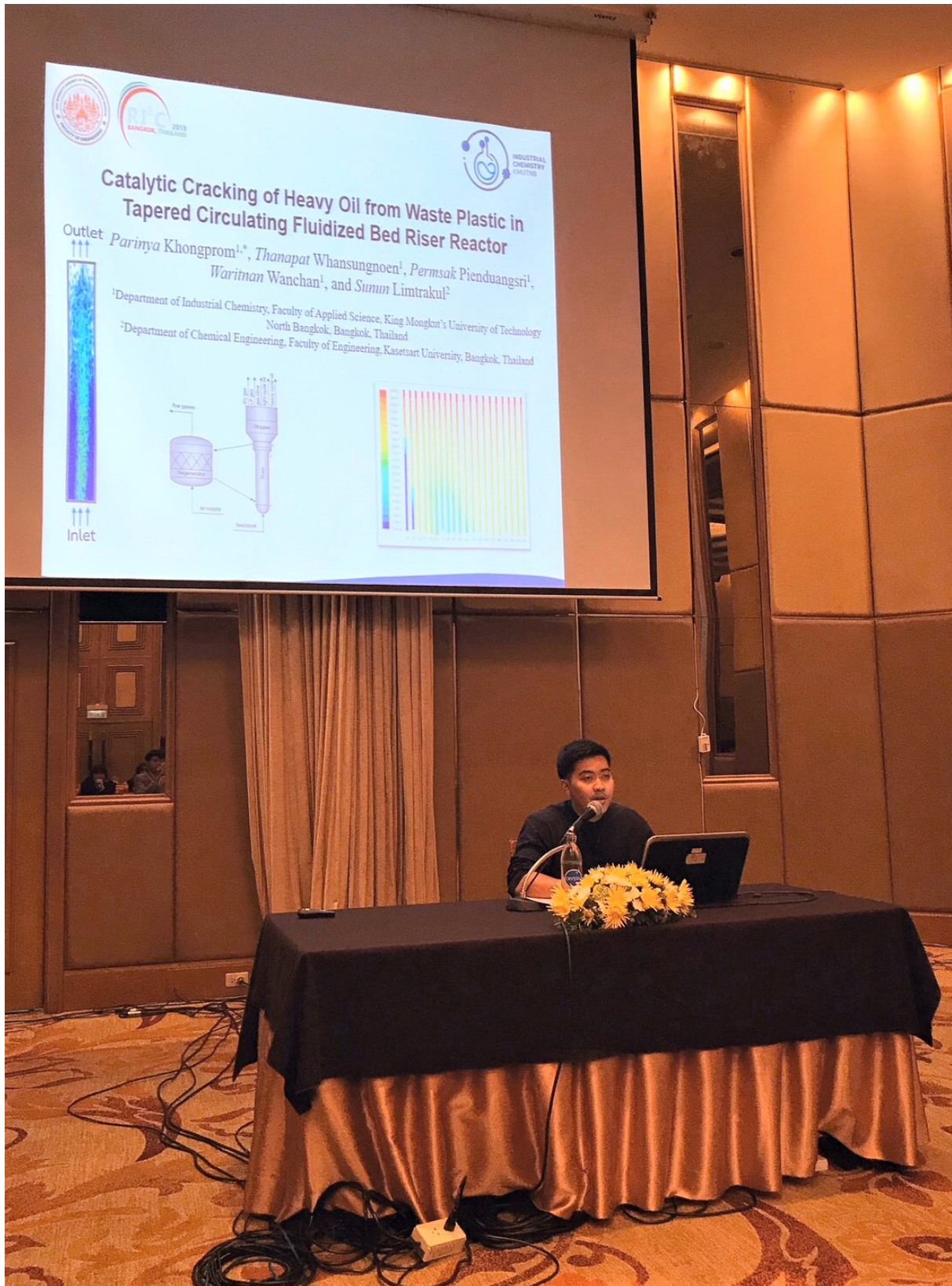






$X2+X3 = 1.0$





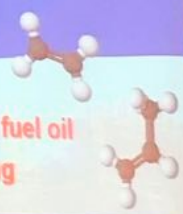




Research Topic:



Microwave-assisted pyrolysis of fuel oil for hydrocarbons upgrading



By Suksun Amornraksa\* and Thanida Sritangthong







IR2C2019) 11-13 DECEMBER 2019 IN BANGKOK, THAILAND

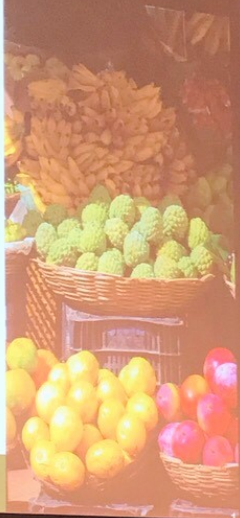


# CRITERIA ANALYSIS OF FOOD SAFETY USING THE ANALYTIC HIERARCHY PROCESS (AHP)

## A CASE STUDY OF THAILAND'S FRESH MARKETS

Chewaphorn Chaiyaphan, Kasin Ransikarbun

Department of Industrial Engineering, Ubonratchathani University, Thailand







# Influence of Packaging and Storage Conditions on the Quality and Shelf-life of Chewy Santol (Kraton-Yee) Candies

Phanida Renumarn\* and Natthaya Choosuk

Department of Innovation and Product Development Technology

Faculty of Agro-Industry

King Mongkut's University of Technology North Bangkok, Prachinburi Campus, THAILAND











King Mongkut's University of Technology North Bangkok

# Resistant Starch from Mixed Flours (Banana, Jackfruit seed and Job's tears) and The Application in Food Product

Presented by Assist. Prof. Dr. Ratchanee Charoen  
Department of Innovation and Product Development Technology  
Faculty of Agro-Industry, KMUTNB Prachinburi campus






## Presenter iSS – December 13, 2019







# Effect of oatmeal as a fat replacer on physical properties and sensory acceptance of creamy salad dressing

Nutsuda Sumonsiri\*, Benjaporn Panjun,  
Supanna Naksuk, Sarisara Boonmawat,  
Amomrat Mukprasirt, Pattama Phasuthan

Department of Agro-Industrial, Food, and Environmental Technology  
Faculty of Applied Science  
King Mongkut's University of Technology North Bangkok









**Effect of Drying on  $\beta$ , $\alpha$ -Carotene, Lutein and Zeaxanthin Content in Vegetables and Its Application for Vegetable Seasoning**

Piyarach Kullamethee\*, Nipawan Kumnerd, Chadapon Chumphukhaw,  
Daluwan Suwannasit and Kunjana Rotjanapun  
Department of Innovation and Product Development Technology, Faculty of Agro-Industry  
King Mongkut's University of Technology North Bangkok, THAILAND



# Nutritional Quantification and Shelf Life Analysis of non-Thermal Processed Juice

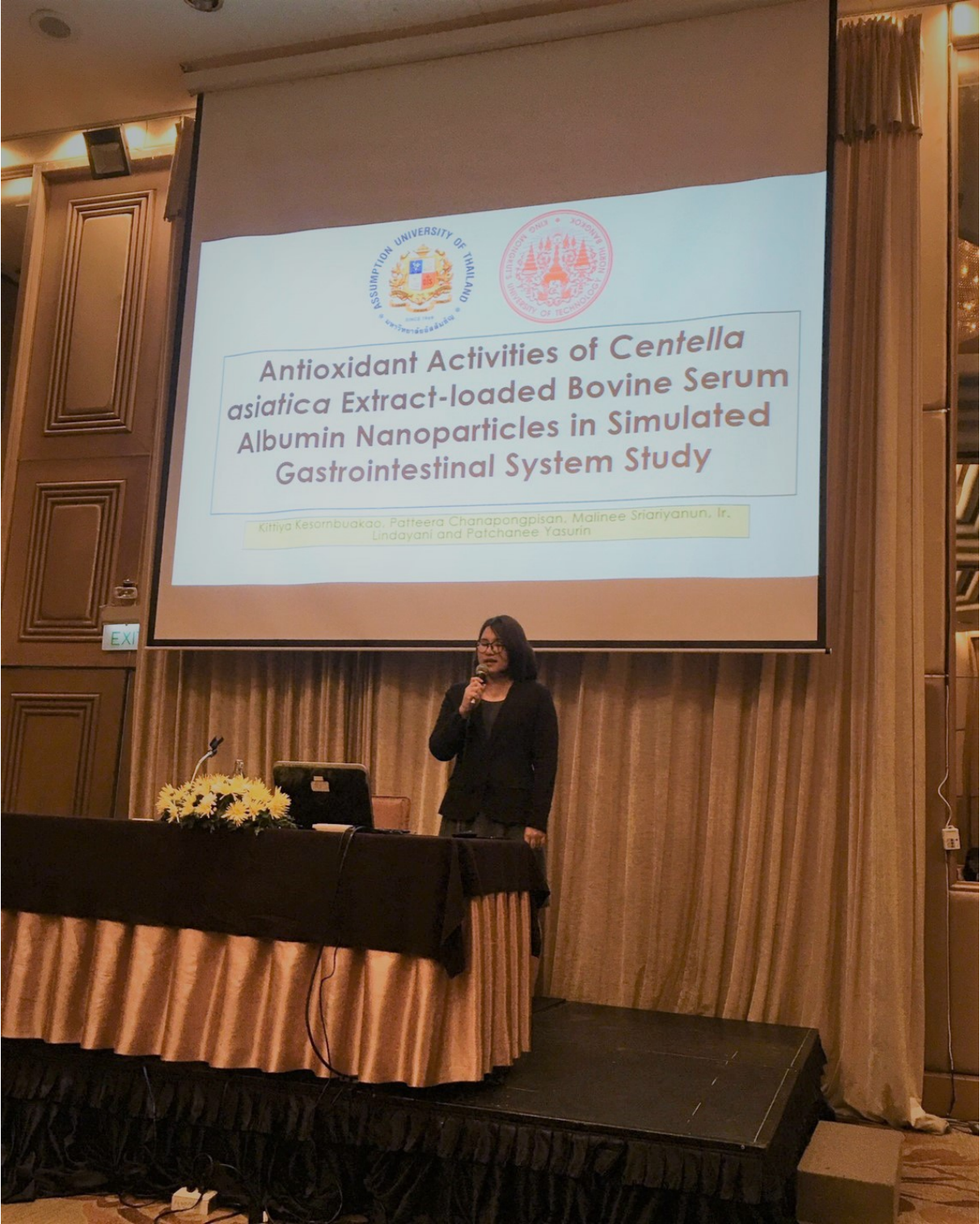
Sasithorn Kongruang\* and Srawut Kleesuwan  
Bioprocess Engineering and Biotechnology Center  
Department of Biotechnology, Faculty of Applied Science,  
King Mongkut's University of Technology North Bangkok,  
Bangkok, Thailand



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# Antioxidant Activities of *Centella asiatica* Extract-loaded Bovine Serum Albumin Nanoparticles in Simulated Gastrointestinal System Study

Kitiya Kesombuakao, Patteera Chanapongpisan, Malinee Sriyanun, Ir. Lindayani and Patchanee Yasurin







# Surface Characteristics of Leafy Vegetables and Their Effects on *Salmonella* Attachment

Chanthima Phungamngoen<sup>1\*</sup> and Sriwang Rittisak<sup>2</sup>

Faculty of agro industry, King mongkut's university of technology north bangkok, Thailand

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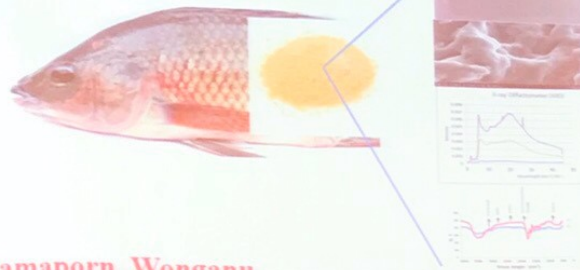








# Application of Gelatin derived from Waste Tilapia Scales to an Antibiotic Hydrogel Pad



Benjamaporn Wonganu

Department of Biotechnology, Faculty of applied Science,  
King Mongkut's University of Technology North Bangkok, Thailand







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## Analysis of microbial consortia with high cellulolytic activities for cassava pulp degradation

Raviporn Runajak<sup>1</sup>, Santi Chuetor<sup>2</sup>, Wawat Rodiahwati<sup>3</sup>, Malinee Sriyanunt  
Prapakorn Tantayota<sup>4</sup>, and Somkiat Phomphisutthimas<sup>5</sup>

**Raviporn Runajak**

Department of Biology, Faculty of Science,  
Srinakharinwirot University, Bangkok, Thailand





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# Profiling analysis of fatty acids and collagens obtained from sea cucumbers



Presented by

**Parita Mutrakulcharoen**



*P Budzinski, M Maimetun, P Mutrakulcharoen, B Wonganu, and M Sriariyanun*





**Certificate of Attendance**

This is to certify that  
"Pascal Bocharin, Mananya Maneeon, Parit Mutsakulchuen,  
Rojanaporn Wongmu, and Maling Srirattanas"  
attended the presentation entitled  
"Profiling analysis of fatty acids and collagens  
obtained from sea cucumbers"  
Attended the 2019 Research, Innovation, and Innovation Congress  
Bangkok, Thailand, 11 - 13 December 2019

Professor Nadeem Iqbal, Ph.D., FRCGS, FRCR  
President of RIIIC 2019

Professor Anand Chandra Subramaniam, Ph.D.  
Conference Chair



Physicochemical profiles, antioxidant and antibacterial capacity of honey from stingless bee *Tetragonula laeviceps* species complex

RIPC 2019  
2019 Research, Innovation and Intellectual Challenge



Jakkrawut Maitip, Ph.D.  
Faculty of Science, Energy and Environment  
King Mongkut's University of Technology North Bangkok, Rayong Campus







## Improvement of Anthocyanin Stability in Butterfly Pea Flower Extract by Co-pigmentation with Catechin

Phoomjai Charurungsipong<sup>1</sup>, Chairath Tangduangdee<sup>1</sup>, Suksun Amornraksa<sup>2</sup>, Suvaluk Asavasanti<sup>3\*</sup>, and Jenshin Lirn<sup>4</sup>

<sup>1</sup>Food Engineering Department, Faculty of Engineering, KMUTT, Thailand

<sup>2</sup>Mechanical and Process Engineering, TGS, KMUTNB, Thailand

<sup>3</sup>Food Technology and Engineering Lab, PDTI, KMUTT, Thailand

<sup>4</sup>Food Science Department, NPUST, 91207, Pingtung, Taiwan





# Statistical Approach of Nutrient Optimization for Microalgae Cultivation.

Pichayatom Bunkaew\*<sup>1</sup>, Sasithorn Kongruang<sup>2</sup>

<sup>1</sup>Bioprocess Engineering and Biotechnology, Department of Biotechnology, Faculty of Applied Science, King Mongkut's University of Technology North Bangkok, Bangkok, Thailand



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# Renewable Biodiesel Production from Oleaginous Yeast Biomass using Industrial Wastes

Sasithorn Kongruang, Malinee Sririyanun and Sitiruk Roytrakul

E-mail: [sasithorn.k@sci.kmutnb.ac.th](mailto:sasithorn.k@sci.kmutnb.ac.th)

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