

The 31st Thai Institute of Chemical Engineering and Applied Chemistry Conference



15 - 16 March

The Virtual Conference via

ZOOM

TICChE
2022



The 31st Thai Institute of Chemical Engineering and Applied Chemistry Conference (TIChE2022)



PROGRAM FOR ACADEMIC CONFERENCE

Tuesday, 15th March

March 15th

Plenary Speaker

“Biomass Valorization for Sustainable Carbon Neutral Society”

Deputy Director
Division for Multidisciplinary
Global Education Center for
International Education

**Professor
Armando T. Quitain**

Kumamoto University,
Japan

| | | |
|---------------|--|--|
| 08:00 - 09:00 | Registration | |
| 09:00 - 09:15 | Opening Ceremony | |
| 09:15- 10:00 | <p>Thapho <i>Plenary Speaker</i> Biomass Valorization for Sustainable Carbon Neutral Society Professor Armando T. Quitain Kumamoto University, Japan</p> | |
| 10:00 -10:15 | <i>Refreshment Break</i> | |
| 10:15- 10:45 | <p>Thapho <i>Invited Speaker</i> “Separation Process”</p> | <p>Wangchan <i>Invited Speaker</i> “Bio Circular Green Economy (BCG)”</p> |
| 10:45 – 12:00 | <p>Thapho Session 01</p> | <p>WangChan Session 02</p> |
| 12:00 - 13:00 | <i>Lunch Break</i> | |
| 13:00 - 14:30 | <p>Thapho Session 03</p> | <p>WangChan Session 04</p> |
| 14:30 - 14:45 | <i>Refreshment Break</i> | |
| 14:45- 15:30 | <p>Thapho Session 05</p> | <p>WangChan Session 06</p> |
| 15:30 -15:45 | <p>Thapho <i>Design Project Competition</i> “Cold Energy Utilization from LNG”</p> | <p>WangChan <i>Refreshment Break</i></p> |
| 15:45- 17:00 | | <p>WangChan Session 07</p> |

The 31st Thai Institute of Chemical Engineering and Applied Chemistry Conference (TIChE2022)



PROGRAM FOR ACADEMIC CONFERENCE

Wednesday, 16th March

March 16th

Plenary Speaker

"Bio-dust Combustion for Heat and Power Production"



Department of Chemical and Biochemical Engineering,
CHEC Research Centre

Professor Peter Glarborg
Technical University of Denmark

| | | | |
|---------------|---|---|---|
| 08:00 - 09:00 | Registration | | |
| 09:00 - 09:30 | Thapho <i>Invited Speaker</i> "Biotechnology & Biochemical Engineering" | WangChan <i>Invited Speaker</i> "Process Simulation" | |
| 09:30 - 10:45 | Thapho Session 08 | WangChan Session 09 | Thathong Session 10 |
| 10:45 - 11:00 | <i>Refreshment Break</i> | | |
| 11:00 - 11:45 | Thapho <i>Plenary Speaker</i> Bio-dust Combustion for Heat and Power Production Professor Peter Glarborg Technical University of Denmark, Denmark | | |
| 11:45 - 13:00 | <i>Lunch Break</i> | | |
| 13:00 - 14:00 | Thapho Session 11 | WangChan Session 12 | Thathong Head of Department Meeting |
| 14:00 - 14:10 | <i>Refreshment Break</i> | | |
| 14:10 - 15:10 | Thapho Session 13 | WangChan Session 14 | |
| 15:10 - 15:20 | <i>Refreshment Break</i> | | |
| 15:20 - 16:20 | Thapho Session 15 | WangChan Session 16 | |
| 16:20 - 16:35 | <i>Refreshment Break</i> | | |
| 16:35 - 17:10 | Award Ceremony & Closing Ceremony | | |

The 31st Thai Institute of Chemical Engineering and Applied Chemistry Conference (TIChE2022)



Speakers

March 15th 

Plenary Speaker

“ Biomass Valorization for Sustainable Carbon Neutral Society ”



Deputy Director
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Global Education Center for
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**Professor
Armando T. Quitain**

Kumamoto University,
Japan

March 16th 

Plenary Speaker

“ Bio-dust Combustion for Heat and Power Production ”



Department of Chemical and
Biochemical Engineering,
CHEC Research Centre

**Professor
Peter Glarborg**

Technical University of
Denmark

March 15th 

Invited Speaker

“ Separation Processes ”



“ Challenges in Cannabinoid Isolated and Cannabis Extract Production ”

Assoc. Prof. Dr. Kornkanok Ingkaninan

Director of Center of Excellence in Cannabis Research (NU-CAN) Department of Pharmaceutical Chemistry and Pharmacognosy, Faculty of Pharmaceutical Sciences, Naresuan University, Phitsanulok, Thailand

March 15th 

Invited Speaker

“ Bio Circular Green Economy (BCG) ”



“ A-Z of Biorefinery- A Way Toward Sustainable Development ”

Prof. Dr. Suttichai Assabumrungrat

Director of Bio-Circular-Green economy Technology and Engineering Center (BCGeTEC), Chulalongkorn University, Thailand

March 16th 

Invited Speaker

“ Biotechnology & Biochemical Engineering ”



“ Microparticles Formation of Bioactive Compounds Extracted from Medicinal Plant with Supercritical Anti Solvent ”

Assoc. Prof. Dr. Siti Machmudah

Department of Chemical Engineering, Institut Teknologi Sepuluh Nopember, Surabaya, Indonesia.

March 16th 

Invited Speaker

“ Process Simulation ”



“ Synthesis Gas Production Through Gasification of Mixed Plastic Waste ”

Assoc. Prof. Dr. Yaneeporn Patcharavorachot

Department of Chemical Engineering, King Mongkut's Institute of Technology Ladkrabang, Thailand.

The 31st Thai Institute of Chemical Engineering and Applied Chemistry Conference (TIChE2022)

Tuesday, 15th March

Thapho



Opening Ceremony 09:00 – 09:15

**Welcome Speech by President of TIChE:
Mr. Surachate Chalothorn**



**Opening Speech by Dean of Faculty of Engineering,
Naresuan University:
Assoc. Prof. Dr. Suchart Yammen**



The 31st Thai Institute of Chemical Engineering and Applied Chemistry Conference (TIChE2022)

Tuesday, 15th March

Thapho



Plenary Speaker 09:15 – 10:00

Session Chair:

Asst. Prof. Dr. Panatpong Boonnoun,
Naresuan University

March 15th 

Plenary Speaker

“ Biomass Valorization for Sustainable Carbon Neutral Society ”



Deputy Director
Division for Multidisciplinary
Global Education Center for
International Education

**Professor
Armando T. Quitain**

Kumamoto University,
Japan

Plenary Speaker

Biomass Valorization for Sustainable Carbon Neutral Society

Professor Armando T. Quitain

Kumamoto University, Japan

The 31st Thai Institute of Chemical Engineering and Applied Chemistry Conference (TIChE2022)

Tuesday, 15th March

Thapho



Parallel Sessions Session 01: 10:15 – 12:00

Oral Session

Track 4. Chemical Reaction Engineering & Catalysis and Track 5. Separation Processes

Session Chair: Asst. Prof. Dr. Thirawat Mueansichai, Rajamangala University of Technology Thanyaburi

Co-Chair: Asst. Prof. Dr. Panatpong Boonnoun / Dr. Pamornrat Chantam / Dr. Watanachai Yaowarat

March 15th 

Invited Speaker

“ Separation Processes ”



“ Challenges in Cannabinoid Isolated and Cannabis Extract Production ”

Assoc. Prof. Dr. Kornkanok Ingkaninan
Director of Center of Excellence in Cannabis Research (NU-CAN) Department of Pharmaceutical Chemistry and Pharmacognosy, Faculty of Pharmaceutical Sciences, Naresuan University, Phitsanulok, Thailand

Invited Speaker: 10:15 - 10:45

Challenges in Cannabinoid Isolated and Cannabis Extract Production.

Assoc. Prof. Dr. Kornkanok Ingkaninan
Naresuan University, Phitsanulok, Thailand

SEPP-01: 10.45 - 11.00

Binary Mixture Adsorption of CO₂/CH₄ in Activated Carbon.

Allan Hua Heng Sim, Curtin University, Australia

SEPP-02: 11.00 - 11.15

Experimental and Correlation of Solubility of the Metastable Polymorph B of L-histidine in Binary Solvent Mixtures.

Lek Wantha, SUT, Thailand

CATA-01: 11.15 - 11.30

Long-Chain Bio-olefins from Oxidative Dehydrogenation of Oleic Acid over Vanadium Oxide Supported on SBA-15 Catalyst.

Nattaporn Chaidherasuwet, CU, Thailand

CATA-02: 11.30 - 11.45

Factorial Experimental Design for Evaluation of Mold Stain Formation during Rubber Vulcanization.

Sireethon Utamachote, CU, Thailand

CATA-03: 11.45 – 12.00

A Comparative Study on Effects of Water Adsorption during Water-Gas Shift Reaction of Pt-based Metal and High-Entropy Alloy Catalysts via Density Functional Theory.

Suphawich Boonchuay, CU, Thailand

The 31st Thai Institute of Chemical Engineering and Applied Chemistry Conference (TIChE2022)

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Parallel Sessions **Session 03: 13:00 – 14:30**

Oral Session

Track 4. Chemical Reaction Engineering & Catalysis and Track 5. Separation Processes

Session Chair: Asst. Prof. Dr. Thirawat Mueansichai, Rajamangala University of Technology Thanyaburi

Co-Chair: Asst. Prof. Dr. Panatpong Boonnoun / Dr. Pamornrat Chantam / Dr. Watanachai Yaowarat

CATA-04: 13.00 – 13.15

Density Functional Theory Investigation on Adsorption Energy of *OOH, *O and *OH on Pd-doped α -MnO₂ during Oxygen Reduction Reaction in Rechargeable Zn-Air Batteries.

Nuttanon Aumnongpho, CU, Thailand

CATA-05: 13.15 – 13.30

Effect of the FSP-made Co-TiO₂ Support on the Selective Hydrogenation of Furfural over Copper Based Catalyst.

Janjira Pongkan, SU, Thailand

CATA-06: 13.30 – 13.45

A Density Functional Theory Study on the Stability of γ -Al₂O₃-supported Ni-based Dry Reforming Catalysts Affected by Mg and La Promoter.

Nuttapat Kerdprasit, CU, Thailand

CATA-07: 13.45 – 14.00

Solution Combustion Synthesis of Niobia-promoted Alumina Catalysts for Direct Production of 5-HMF from Glucose.

Poramathe Jarunothai, SU, Thailand

CATA-08: 14.00 – 14.15

Effects of Salts on the Stability of Hydrogen Peroxide.

Chanyanuch Chantatemee, CU, Thailand

CATA-09: 14.10 – 14.30

Biodiesel Production from Palm Oil in Electromagnetic Induction Reactor.

Namfon Sirikul, CU, Thailand

The 31st Thai Institute of Chemical Engineering and Applied Chemistry Conference (TIChE2022)

Tuesday, 15th March

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Parallel Sessions **Session 05: 14:45 – 15:25**

Poster Session

Track 7. Environment and Sustainability

Session Chair: Asst. Prof. Dr. Sarayooth Vaivudh, Naresuan University

Co-Chair: Asst. Prof. Dr. Suchada Ukaew / Dr. Noppawan Motong

BCEN-12: 14.45 – 14.55

Systematic Chemicals-Based Product Development, Analysis and Chemical Substitution
Nichakorn Kuprasertwong, PSE for SPEED Company Limited, Thailand

BCEN-13: 14.55 – 15.05

Investigation of Methane Hydrate Formation and Dissociation in the Presence of Biofriendly Amino Acid for Natural Gas Storage Application
Chuvich Chaovarinn, CU, Thailand

BCEN-14: 15.05 – 15.15

Resource Efficiency Assessment of European Countries via Data Envelopment Analysis
Phatcharanan Pipatnawakit, KU, Thailand

BCEN-15: 15.15 – 15.25

Sustainability Assessment towards Circular Economy of European Countries using Data Envelopment Analysis
Adithep Banjerdpaiboon, KU, Thailand

The 31st Thai Institute of Chemical Engineering and Applied Chemistry Conference (TIChE2022)

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Parallel Sessions 15:30 – 17:00

Design Project Competition

"Cold Energy Utilization from LNG"

Session Chair: Mr. Theerawee Wonggowit, Operation Director, Thai Petroleum & Trading Co., Ltd.

Co-Chair: Dr. Weerawun Weerachaipichasgul



Winner: 15.30 – 16.00

1st runner-up: 16.00 – 16.30

2nd runner-up: 16.30 – 17.00

The 31st Thai Institute of Chemical Engineering and Applied Chemistry Conference (TIChE2022)

Tuesday, 15th March

WangChan



Parallel Sessions Session 02: 10:15 – 12:00

Oral Session

Track 7. Environment and Sustainability and Track 8. Bio Circular Green economy (BCG)

Session Chair: Asst. Prof. Dr. Sarayooth Vaivudh, Naresuan University

Co-Chair: Asst. Prof. Dr. Suchada Ukaew / Dr. Noppawan Motong

March 15th 

Invited Speaker

“ Bio Circular Green Economy (BCG) ”



“ A-Z of Biorefinery- A Way Toward Sustainable Development ”

Prof. Dr. Suttichai Assabumrungrat

Director of Bio-Circular-Green economy Technology and Engineering Center (BCGeTEC), Chulalongkorn University, Thailand

Invited Speaker: 10:15 - 10:45

A-Z of Biorefinery-A Way Toward Sustainable Development
Prof. Dr. Suttichai Assabumrungrat
Chulalongkorn University, Thailand

BCEN-01: 10.45 - 11.00

Mechanical Properties Enhancement of Liquid Silicone Rubber Filled with Recycled Silicone Nipples.
Chanasit Tangtrakul, CU, Thailand

BCEN-02: 11.00 - 11.15

Modification of K₂CO₃/Al₂O₃ Solid Sorbent with MEA and MDEA Solutions for CO₂ Capture Application.
Pacharapol Nokpho, CU, Thailand

BCEN-03: 11.15 - 11.30

Material Flow Analysis and Life Cycle Impact Assessment of Single-use Polyethylene Terephthalate Recycling Process Towards Circular Economy in Thailand.
Sararin Khitkannan, KU, Thailand

BCEN-04: 11.30 - 11.45

Effects of Zinc Particle Size and Electrolyte Concentration on Performance of Alkaline Zinc-Air Battery.
Naratorn Chamyai, KMUTT, Thailand

BCEN-05: 11.45 – 12.00

Demulsification of Oil from Produced Water Using Fibrous Coalescer.
Nutcha Thianbut, KMUTNB, Thailand

The 31st Thai Institute of Chemical Engineering and Applied Chemistry Conference (TIChE2022)

Tuesday, 15th March

WangChan



Parallel Sessions **Session 04: 13:00 – 14:30**

Oral Session

Track 7. Environment and Sustainability

Session Chair: Asst. Prof. Dr. Kullapa Soratana, Naresuan University

Co-Chair: Asst. Prof. Dr. Suchada Ukaew / Dr. Noppawan Motong

BCEN-06: 13.00 – 13.15

Depolymerisation of Lignin Model Compound by Electrochemical Advanced Oxidation Process in a Microreactor.

Lee Kevin, CU, Thailand

BCEN-07: 13.15 – 13.30

The Study of Water Footprint of Load Bearing Walling Materials in Sri Lanka.

Navodya Perera, University of Ruhuna, Sri Lanka

BCEN-08: 13.30 – 13.45

Roles of Amino Acid Hydrophobicity on the Methane Hydrate Formation at Ambient Temperature.

Kan Jeenuang, CU, Thailand

BCEN-09: 13.45 – 14.00

Innovative Production of Bagasse Ash-Derived Functional Porous Materials to Improve Air Transmission for Woody Perennials Under Flooding Conditions.

Sittikorn Chumpornrat, KU, Thailand

BCEN-10: 14.00 – 14.15

Carbon Dioxide Capture and Sequestration via Gas Hydrates in the Presence of Amino Acid.

Viphada Yodpetch, CU, Thailand

BCEN-11: 14.10 – 14.30

Hydrate-based Technology for Natural Gas Storage Application at Mild Conditions: Impacts of a Co-promoter in Simulated Seawater.

Katipot Inkong, CU, Thailand

The 31st Thai Institute of Chemical Engineering and Applied Chemistry Conference (TIChE2022)

Tuesday, 15th March

WangChan



Parallel Sessions **Session 06: 14:45 – 15:30**

Oral Session

Track 4. Chemical Reaction Engineering & Catalysis and Track 5. Separation Processes

Session Chair: Asst. Prof. Dr. Thirawat Mueansichai, Rajamangala University of Technology Thanyaburi

Co-Chair: Asst. Prof. Dr. Panatpong Boonnoun / Dr. Pamornrat Chantam / Dr. Watanachai Yaowarat

CATA-10: 14:45– 15.00

Effects of H_2SO_4 and H_3PO_4 on the Stability of Hydrogen Peroxide at Room and Elevated Temperatures.

Thanaporn Jokloy, CU, Thailand

CATA-11: 15.00 – 15.15

Effect of Metal Surfaces on the Decomposition of Hydrogen Peroxide.

Chanyanuch Promma, CU, Thailand

CATA-12: 15.15 – 15.30

Catalytic Hydrogenation of CO_2 to Aromatic Hydrocarbons over Bifunctional Iron Oxides/ZSM-5 Zeolite under External Magnetic Field

Ratchanon Chotchaipitakkul, KU, Thailand

The 31st Thai Institute of Chemical Engineering and Applied Chemistry Conference (TIChE2022)

Tuesday, 15th March

WangChan



Parallel Sessions **Session 07: 15:45 – 16:15**

Poster Session

Track 4. Chemical Reaction Engineering & Catalysis and Track 5. Separation Processes

Session Chair: Asst. Prof. Dr. Panatpong Boonnoun, Naresuan University

Co-Chair: Dr. Pamornrat Chantam / Dr. Watanachai Yaowarat

CATA-13: 15:45– 15.55

Carbon Dioxide Reforming of Biogas on Hydrotalcite-Derived Ni-Mg-Al Catalyst Pellets: Effects of Ce and La Promoters.

Aekburut Yuangthong, CU, Thailand

CATA-14: 15:55– 16.05

Study the Production and Crystal Properties of Potassium Laurate for Facial Cleansing Cosmetic Products.

Jidapha Fuengfu, CU, Thailand

CATA-15: 16:05– 16.15

Direct Methanation of Biogas into Biomethane over Ni-based Catalysts

Jidapa Tatiyapantarak, MU, Thailand

The 31st Thai Institute of Chemical Engineering and Applied Chemistry Conference (TIChE2022)

Wednesday, 16th March

Thapho



Closing Ceremony 16:35 – 17:10

LUCKY DRAW

Zoom meeting ID : 847 7360 9159

MARCH 16 | CLOSING REMARKS
4.35 PM

AWARD CEREMONY

1 Big Prize
Apple Watch Series 7 GPS
45 mm Starlight Aluminium Case
with Sport Band

1 Prize
Apple AirPods
(3rd generation)

TIChE 2022

* Lucky draw available for the presenter who paid the registration fee

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PROGRAM FOR ACADEMIC CONFERENCE

Wednesday, 16th March

March 16th

Plenary Speaker

" Bio-dust Combustion for Heat and Power Production "



Department of Chemical and Biochemical Engineering,
CHEC Research Centre

Professor Peter Glarborg
Technical University of Denmark

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|---------------|---|---|---|
| 08:00 - 09:00 | Registration | | |
| 09:00 - 09:30 | Thapho <i>Invited Speaker</i> "Biotechnology & Biochemical Engineering" | WangChan <i>Invited Speaker</i> "Process Simulation" | |
| 09:30 - 10:45 | Thapho Session 08 | WangChan Session 09 | Thathong Session 10 |
| 10:45 - 11:00 | Refreshment Break | | |
| 11:00 - 11:45 | Thapho <i>Plenary Speaker</i> Bio-dust Combustion for Heat and Power Production Professor Peter Glarborg Technical University of Denmark, Denmark | | |
| 11:45 - 13:00 | Lunch Break | | |
| 13:00 - 14:00 | Thapho Session 11 | WangChan Session 12 | Thathong Head of Department Meeting |
| 14:00 - 14:10 | Refreshment Break | | |
| 14:10 - 15:10 | Thapho Session 13 | WangChan Session 14 | |
| 15:10 - 15:20 | Refreshment Break | | |
| 15:20 - 16:20 | Thapho Session 15 | WangChan Session 16 | |
| 16:20 - 16:35 | Refreshment Break | | |
| 16:35 - 17:10 | Award Ceremony & Closing Ceremony | | |

The 31st Thai Institute of Chemical Engineering and Applied Chemistry Conference (TIChE2022)



Speakers

March 15th 

Plenary Speaker

“ Biomass Valorization for Sustainable Carbon Neutral Society ”



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March 16th 

Plenary Speaker

“ Bio-dust Combustion for Heat and Power Production ”



Department of Chemical and
Biochemical Engineering,
CHEC Research Centre

**Professor
Peter Glarborg**

Technical University of
Denmark

March 15th 

Invited Speaker

“ Separation Processes ”



“ Challenges in Cannabinoid Isolated and Cannabis Extract Production ”

Assoc. Prof. Dr. Kornkanok Ingkaninan

Director of Center of Excellence in Cannabis Research (NU-CAN) Department of Pharmaceutical Chemistry and Pharmacognosy, Faculty of Pharmaceutical Sciences, Naresuan University, Phitsanulok, Thailand

March 15th 

Invited Speaker

“ Bio Circular Green Economy (BCG) ”



“ A-Z of Biorefinery- A Way Toward Sustainable Development ”

Prof. Dr. Suttichai Assabumrungrat

Director of Bio-Circular-Green economy Technology and Engineering Center (BCGeTEC), Chulalongkorn University, Thailand

March 16th 

Invited Speaker

“ Biotechnology & Biochemical Engineering ”



“ Microparticles Formation of Bioactive Compounds Extracted from Medicinal Plant with Supercritical Anti Solvent ”

Assoc. Prof. Dr. Siti Machmudah

Department of Chemical Engineering, Institut Teknologi Sepuluh Nopember, Surabaya, Indonesia.

March 16th 

Invited Speaker

“ Process Simulation ”



“ Synthesis Gas Production Through Gasification of Mixed Plastic Waste ”

Assoc. Prof. Dr. Yaneeporn Patcharavorachot

Department of Chemical Engineering, King Mongkut's Institute of Technology Ladkrabang, Thailand.

The 31st Thai Institute of Chemical Engineering and Applied Chemistry Conference (TIChE2022)

Wednesday, 16th March

Thapho



Plenary Speaker 11:00 – 11:45


Session Chair:

Dr. Noppawan Motong,
Naresuan University

March 16th

Plenary Speaker

“ Bio-dust Combustion for Heat and Power Production ”



Department of Chemical and Biochemical Engineering,
CHEC Research Centre

Professor Peter Glarborg
Technical University of Denmark

Plenary Speaker

Bio-dust Combustion for Heat and Power Production

Professor Peter Glarborg

Technical University of Denmark, Denmark

The 31st Thai Institute of Chemical Engineering and Applied Chemistry Conference (TIChE2022)

Wednesday, 16th March



Thapho

Parallel Sessions **Session 08: 09:00 – 10:45**

Oral Session

Track 3. Biotechnology & Biochemical Engineering

Session Chair: Assoc. Prof. Dr. Paweena Prapainainar, Kasetsart University

Co-Chair: Dr. Suttipong Songprawat / Dr. Watcharapong Khaodee

March 16th 

Invited Speaker

"Biotechnology & Biochemical Engineering"



"Microparticles Formation of Bioactive Compounds Extracted from Medicinal Plant with Supercritical Anti Solvent"

Assoc. Prof. Dr. Siti Machmudah

Department of Chemical Engineering, Institut Teknologi Sepuluh Nopember, Surabaya, Indonesia.

Invited Speaker: 09:00 - 09:30

Microparticles Formation of Bioactive Compounds Extracted from Medicinal Plant with Supercritical Anti Solvent.

Assoc. Prof. Dr. Siti Machmudah

Institut Teknologi Sepuluh Nopember, Indonesia

BIOT-01: 09:30- 09:45

Kinetic Parameters Evaluation of Fructooligosaccharide from Sucrose using Immobilized Levansucrase.

Sasina Plubwungklam, CU, Thailand

BIOT-02: 09:45 - 10:00

Mathematical Modeling of Growth Kinetics and Recombinant Butyrylcholinesterase Production of Transgenic Rice Cell Suspension Cultures.

Paradon Sakornpanich, KMUTT, Thailand

The 31st Thai Institute of Chemical Engineering and Applied Chemistry Conference (TIChE2022)

Wednesday, 16th March

Thapho



Parallel Sessions Session 11: 13:00 – 14:00

Oral Session

Track 1. Biofuel, Bioenergy and Biorefinery

Session Chair: Assoc. Prof. Dr. Pornnapa Kasemsiri, Khon Kaen University

Co-Chair: Dr. Watanachai Yaowarat / Dr. Suttipong Songprawat

BIOF-01: 13:00- 13:15

Washing Process of Crude Biodiesel Using Fine-droplets.
Phiratcha Tawiya, KMUTNB, Thailand

BIOF-02: 13:15- 13:30

Prediction of Higher Heating Value and Ultimate Analysis of Biochar from Proximate Analysis Data.
Prodpran Siritheerasas, TU, Thailand

BIOF-03: 13:30- 13:45

Bio-jet Fuel Production from Simultaneous Hydro-deoxygenation and Isomerization of Palm Oil over Ni/SAPO-11 Catalyst.
Jirawat Chusang, CU, Thailand

BIOF-04: 13:45- 14:00

Solution Combustion Synthesis of Tungsten-promoted Alumina for One-pot Conversion of Sugarcane Leaves to Furfural.
Navee Ampolsing, SU, Thailand

The 31st Thai Institute of Chemical Engineering and Applied Chemistry Conference (TIChE2022)

Wednesday, 16th March

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Parallel Sessions **Session 13: 14:10 – 15:10**

Oral Session

Track 1. Biofuel, Bioenergy and Biorefinery

Session Chair: Assoc. Prof. Dr. Pornnapa Kasemsiri, Khon Kaen University

Co-Chair: Dr. Watanachai Yaowarat / Dr. Suttipong Songprawat

BIOF-05: 14:10- 14:25

Conversion of Water Lettuce to Fermentable Sugars by Liquid Hot Water Pretreatment.

Orawee Champadang, CU, Thailand

BIOF-06: 14:25- 14:40

High Conversion of Palm Oil Transesterification with Short-Chain Alcohols.

Palawat Unruean, CU, Thailand

BIOF-07: 14:40- 14:55

Optimization of Enzymatic Hydrolysis of Rice Straw for Reducing Sugar Production by Response Surface Methodology.

Sengthong Lee, National University of Laos, Lao P.D.R

The 31st Thai Institute of Chemical Engineering and Applied Chemistry Conference (TIChE2022)

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Thapho



Parallel Sessions Session 15: 15:20 – 16:20

Poster Session

Session Chair: Asst. Prof. Dr. Veerayut Lersbamrungsuk, Silpakorn University

Co-Chair: Dr. Watanachai Yaowarat / Asst. Prof. Dr. Panatpong Boonnoun

BIOF-08: 15:20- 15:30

The Quality of Biomass Fuels for Use as Biofuel in the Combustion Chamber.

Piyanan Prasing, CMU, Thailand

BIOT-03: 15:30- 15:40

Optimization of C22 Bacteriophage Lyophilization Factors Using Response Surface Methodology.

Nathida Manbua, KMITL, Thailand

BIOT-04: 15:40- 15:50

Preliminary Study of Lysozyme Crystallization in Ammonium Sulfate Solution using Solvent Freeze-Out Crystallizer.

Chonut Xaiyathoumma, SUT, Thailand

PROS-13: 15:50 - 16:00

Process Simulation and Economic Analysis of Biodiesel Production: Hybridization Reactive Distillation and Conventional Process.

Thirawat Mueansichai, RMUTT, Thailand

PROS-14: 16:00- 16:10

Heat Transfer Modeling of Deferasirox Purification in A Batch Process.

Naruporn Savetvivat, CU, Thailand

PROS-15: 16:10- 16:20

Fast, Efficient and Reliable Sustainable Process Design with New Class of Methods and Software Tools.

Orakotch Padungwatanaroj, PSE for SPEED Company Limited, Thailand

The 31st Thai Institute of Chemical Engineering and Applied Chemistry Conference (TIChE2022)

Wednesday, 16th March



WangChan

Parallel Sessions Session 09: 09:00 – 10:45

Oral Session

Track 6. Process Simulation

Session Chair: Asst. Prof. Dr. Pornsiri Kaewpradit, Prince of Songkla University

Co-Chair: Asst. Prof. Dr. Panatpong Boonnoun / Dr. Weerawun Weerachaipichasgul

March 16th 

Invited Speaker

"Process Simulation"



"Synthesis Gas Production Through Gasification of Mixed Plastic Waste"

Assoc. Prof. Dr. Yaneeporn Patcharavorachot

Department of Chemical Engineering, King Mongkut's Institute of Technology Ladkrabang, Thailand.

Invited Speaker: 09:00 - 09:30

Synthesis Gas Production Through Gasification of Mixed Plastic Waste.

Assoc. Prof. Dr. Yaneeporn Patcharavorachot
KMITL, Thailand

PROS-01: 09:30- 09:45

Design for Uniform Airflow Distribution in A New Waste Heat Dryer by CFD Modeling.

Nuthathai Chuenban, KMUTT, Thailand

PROS-02: 09:45 - 10:00

Hydrodynamic Simulations of the Photocatalyst Suspension in an Annulus Photoreactor for the Photoreduction of Carbon Dioxide.

Thirawit Sornsuchat, MU, Thailand

PROS-03: 10:00 – 10:15

Algorithm for Reflux and Boil-Up Ratio Prediction in Distillation Column using Trained Neural Network by McCabe-Thiele Graphical Method.

Panthakarn Chunnawattanakit, CU, Thailand

PROS-04: 10:15 – 10:45

The Extended Graetz Problem with Heat convection Boundary.

Satok Chaikunchuensakun, TU, Thailand

The 31st Thai Institute of Chemical Engineering and Applied Chemistry Conference (TIChE2022)

Wednesday, 16th March

WangChan



Parallel Sessions Session 12: 13:00 – 14:00

Oral Session

Track 6. Process Simulation

Session Chair: Asst. Prof. Dr. Veerayut Lersbamrungsuk, Silpakorn University

Co-Chair: Asst. Prof. Dr. Panatpong Boonnoun / Dr. Weerawun Weerachaipichasgul

PROS-05: 13:00- 13:15

Economic Evaluation of Furfural Production Process with Vaporization Reactor in Thailand Using Aspen Plus Program.

Surawut Hansirisawad, SU, Thailand

PROS-06: 13:15- 13:30

Simulation of Microwave Thawing: Effect of On-Off Cycle.

Nuttharin Promsawas, KMUTT, Thailand

PROS-07: 13:30- 13:45

Process Simulation of Butanol Separation from Acetone-Butanol-Ethanol (ABE) Aqueous Solution Using Mesitylene and Dibutyl Phthalate by a Hybrid Extraction-Distillation Process.

Chinnakrit Pongnarudech, KMUTT, Thailand

PROS-08: 13:45- 14:00

Performance Analysis of Bagasse Gasification Integrated with Methanol Production.

Nitsara Panichkittikul, KMITL, Thailand

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Parallel Sessions Session 14: 14:10 – 15:10

Oral Session

Track 2. Bioplastic, Biomaterial & Advanced Material

Session Chair: Asst. Prof. Dr. Sukunya Ross, Naresuan University

Co-Chair: Asst. Prof. Dr. Suchada Ukaew / Dr. Weerawun Weerachaipichasgul

BIOM-05: 14:10- 14:25

The Emulsion Size Distribution of D-limonene in the Sodium Caseinate and Sodium Tripolyphosphate Solution.

Theeraphat Bunchaiput, CU, Thailand

BIOM-06: 14:25- 14:40

Starch-based Hydrogel with Thermo-responsive Behavior.

Sorapat Niyomsin, CU, Thailand

BIOM-07: 14:40- 14:55

Synthesis Strontium Boron Hydroxyapatite/Calcium Doped Zirconia (SrBHA/Ca-ZrO₂) for Bone Replacements Application.

Chanakarn Raksat, NU, Thailand

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Parallel Sessions Session 16: 15:20 – 16:20

Poster Session

Session Chair: Dr. Nutchapon Chotigkrai, Silpakorn University

Co-Chair: Asst. Prof. Dr. Suchada Ukaew / Dr. Suttipong Songprawat

BIOM-08: 15:20- 15:30

Drug Tablet Coating by Sugar Crystallization Technology.
Channakhone Phoumixay, SUT, Thailand

BIOM-09: 15:30- 15:40

Synthesis and Characterization of SnS₂ Nanoparticle via the Hydrothermal Method for using as Electron Transport Layer in Perovskite Solar Cell.
Wijak Larpyai, CMU, Thailand

PROS-09: 15:40- 15:50

Techno-Economic Analysis of Alternative Process for Dimethyl Carbonate Production using Urea Alcoholysis Reaction.
Chanon Bunsaksit, CU, Thailand

PROS-10: 15:50- 16:00

Modelling of A Benzoxazinone Process Based on a Pilot Scale with Scale-down Approach.
Thitirat Monprapakamon, CU, Thailand

PROS-11: 16:00- 16:10

Techno-Economic Analysis of Methanol Production from CO₂ Hydrogenation with Alternative Alcohol-Assisted Method.
Phornchanok Mungchan, CU, Thailand

PROS-12: 16:10- 16:20

Economic Analysis of Methanol-to-Dimethyl Ether Process Using Aspen Hysys V.9.
Tanit Bhibhatbhan, TU, Thailand

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Wednesday, 16th March

Thathong



Parallel Sessions **Session 10: 09:30 – 10:45**

Oral Session

Track 2. Bioplastic, Biomaterial & Advanced Material

Session Chair: Asst. Prof. Dr. Sukunya Ross, Naresuan University

Co-Chair: Dr. Noppawan Motong / Asst. Prof. Dr. Suchada Ukaew

BIOM-01: 09:30-09:45

Friction and Mechanical Properties of Carbonized Hemp Hurd-filled Polybenzoxazine Composites.

Phattarin Mora, SWU, Thailand

BIOM -02: 09:45 - 10:00

Electro-responsive Properties of Alginate-Carrageenan-Carboxymethyl Cellulose Triple-network Hydrogels Incorporating Conductive Polythiophene.

Wanwipa Nakbureei, CMU, Thailand

BIOM -03: 10:00 – 10:15

Application of Cellulose Nanocrystals as a PM2.5 Scavenger.

Chaowan Udomsri, KMUTNB, Thailand

BIOM -04: 10:15 – 10:45

A Comparison of Chemical Treatments for Surface Modification of Rice Straw before use as Reinforcement Material in Wood Polymer Composites.

Phanthila Papimon, NU, Thailand

The 31st Thai Institute of Chemical Engineering and Applied Chemistry Conference (TIChE2022)

Wednesday, 16th March

Thapho



Closing Ceremony 16:35 – 17:10

LUCKY DRAW

Zoom meeting ID : 847 7360 9159

MARCH 16 | CLOSING REMARKS
4.35 PM

AWARD CEREMONY

1 Big Prize
Apple Watch Series 7 GPS
45 mm Starlight Aluminium Case
with Sport Band

1 Prize
Apple AirPods
(3rd generation)

TIChE 2022

** Lucky draw available for the presenter who paid the registration fee*