

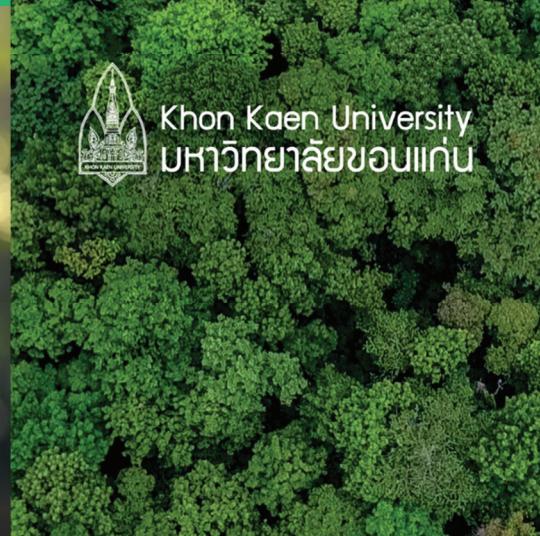


The 34<sup>th</sup> Thai Institution of Chemical Engineering and Applied Chemistry International Conference (TIChE2025)



# PROGRAM BOOK

MAY 20-21, 2025  
PATTAYA, THAILAND



## OVERALL PROGRAM

### The 34<sup>th</sup> Thai Institution of Chemical Engineering and Applied Chemistry International Conference (TIChe2025)

**May 20-21, 2025**

**May 20-21, 2025**

**08:00 – 09:00 Registration Open**

<b>Tuesday, May 20, 2025</b>		<b>Wednesday, May 21, 2025</b>		
Time	Program (Parallel)	Time	Program (Parallel)	
09:00 – 10:30	Opening Ceremony Join with TNChE Asia 2025			
10:30 – 12:00	Plenary Lecture Join with TNChE Asia 2025	09:00 – 12:00	TIChe2025 Oral Presentation (Session 13-24)	TIChe High School Project Contest 2025 (Poster Competition)
12:00 – 13:00	<b>Lunch</b>		<b>Lunch</b>	
13:00 – 16:30	TIChe2025 Oral Presentation (Session 1-12)	13:00 – 14:30	TIChe2025 Oral Presentation (Session 25-28, 30)	TIChe2025 Poster Presentation
		14:30 – 16:00	Meeting on Process Simulation Software for Academic Use	TIChe Plant Design Competition 2025
		16:00 – 16:15	Award Ceremony for the 2 <sup>nd</sup> TIChe-AVEVA Simulation Contest 2025	
16:30 – 18:30	Networking & Happy Hour at Exhibition Zone Gathering Join with TNChE Asia 2025	16:15 – 17:00	<b>Award and Closing Ceremony</b>	

#### **Important Notes for All Participants**

- All participants for the TIChe2025 are welcome to attend all conference sessions, including joint sessions with TNChE Asia 2025, such as the Opening Ceremony, Plenary Lecture, and Networking & Exhibition Gathering.
- Please note that lunch and coffee break services for the TIChe2025 participants are available exclusively on the 5<sup>th</sup> floor of the Dusit Thani Pattaya Hotel. These services are separate from those provided for TNChE Asia 2025, which are located on the 4<sup>th</sup> floor.

## INFORMATION FOR PRESENTERS

### The 34<sup>th</sup> Thai Institution of Chemical Engineering and Applied Chemistry International Conference (TIChE2025)

**May 20-21, 2025**

#### Presentation Code (Abstract Code)

For all participants, including invited speakers, senior project presenters, high school project contestants, and those giving poster or oral presentations, you can obtain your presentation code from your registered account on the TIChE2025.

<b>TIChE-IV-xx</b>	Invited Speaker
<b>TIChE-AM-xx</b>	Presenter in Advanced Materials and Nanotechnology (AM) Session
<b>TIChE-BE-xx</b>	Presenter in Biochemical and Environmental Engineering (BE) Session
<b>TIChE-CR-xx</b>	Presenter in Catalysis and Reaction Engineering (CR) Session
<b>TIChE-EF-xx</b>	Presenter in Energy and Fuels (EF) Session
<b>TIChE-SG-xx</b>	Presenter in Sustainable and Green Chemistry (SG) Session
<b>TIChE-IA-xx</b>	Presenter in Industrial Applications and Case Studies (IA) Session
<b>TIChE-PE-xx</b>	Presenter in Process Engineering and Digital Technologies (PE) Session
<b>TIChE-SE-Axx</b>	TIChE Senior Project Contest 2025 in Applied Research Category
<b>TIChE-SE-Bxx</b>	TIChE Senior Project Contest 2025 in Basic Research Category
<b>TIChE-HS-xx</b>	TIChE High School Project Contest 2025

#### Instruction for Oral Presentation

For all oral presentation speakers, including invited speakers and general presenters, please be informed that sessions will take place in rooms **Dusit 4, 5, 6, 7, 11, 12 and 13, 5<sup>th</sup> floor of the Dusit Thani Pattaya Hotel**. There will be a total of 29 sessions, with 5 presenters per session.

- **Invited Speakers** are allocated 30 minutes, including time for Q&A.
- **General Presenters** are allocated 10 minutes for presentation and 5 minutes for Q&A.

Please ensure that your presentation file is installed on the session computer before your session begins.

#### Instruction for Poster Presentation

For all poster presenters, the poster session will take place on **May 21, 2025, from 13:00-15:00, at the Activity Hall, 5<sup>th</sup> floor of the Dusit Thani Pattaya Hotel**. Presenters are kindly requested to install their posters between 12:00-12:45 prior to the session. Poster panels and necessary mounting materials will be provided by the organizing committee. Please ensure that your poster is mounted at the designated panel displaying your assigned presentation code (Abstract Code).

## TECHNICAL PROGRAM

### The 34<sup>th</sup> Thai Institution of Chemical Engineering and Applied Chemistry International Conference (TIChe2025)

**Day 1 : May 20, 2025**

08:00 – 09:00	Registration					 Registration Area (5 <sup>th</sup> Floor)
09:00 – 12:00	<b>TIChe Senior Project Contest 2025 (Parallel)</b> Opening Ceremony & Poster Competition					 Dusit 11 & Activity Hall (5 <sup>th</sup> Floor)
09:00 – 11:00	<b>Opening Ceremony (Join with TNChE Asia 2025)</b> MC: Asst. Prof. Dr. Pornchai Bumroongsrivit					 Napalai D, E (4 <sup>th</sup> Floor)
09:00 – 10:30	<b>Welcome Speech</b> by Mr. Surachate Chalothon, President of the Thai Institute of Chemical Engineering and Applied Chemistry (TIChe) <b>Opening Ceremony</b> of TNChE Asia 2025, TIChe2025 & Guided tour of exhibition booths by Mr. Cholanat Yanaranop, Directors of SCG & SCGC					
10:30 – 11:00	Networking Break (Coffee Break)					 Refreshment Zone (5 <sup>th</sup> Floor)
11:00 – 12:00	<b>Plenary Session (Join with TNChE Asia 2025)</b> Session Chair: Assoc. Prof. Dr. Thumrongruth Mungcharoen					 Napalai D, E (4 <sup>th</sup> Floor)
11:00 – 11:20	<b>Plenary Lecture I</b>	<b>Global Climate Technology and Technology Transfer Mechanism</b> <b>Dr. Surachai Sathitkunarat</b> President of the Office of the National Higher Education, Science, Research and Innovation Policy Council, Thailand & Executive Director, The APEC Center for Technology Foresight				
11:20 – 11:40	<b>Plenary Lecture II</b>	<b>Key Factors for Establishing Green Ammonia Industry: Aiming CO<sub>2</sub> Free Fuel World</b> <b>Emeritus Prof. Dr. Ken-ichi Aika</b> Green Ammonia Research Center, National Institute of Technology (KOSEN), Numazu College, Japan				
11:40 – 12:00	<b>Plenary Lecture III</b>	<b>Embracing Uncertainty: Unleashing Value in the Evolving Industry Landscape</b> <b>Mr. Kshitij Dua &amp; Mr. Eren Cetinkaya</b> Director, Legal Operations at HashiCorp & Partner at McKinsey & Company				
12:00 – 13:00	<b>Lunch</b>					 Dusit 1, 2, 3 (5 <sup>th</sup> Floor)
13:00 – 16:30	<b>TIChe Senior Project Contest 2025 (Parallel)</b> Final Pitching & Award Ceremony					 Dusit 11 & Activity Hall (5 <sup>th</sup> Floor)
13:00 – 14:15	<b>TIChe2025 Oral Presentation (Parallel)</b>					 Dusit 4, 5, 6, 7, 12, 13 (5 <sup>th</sup> Floor)
Room	Dusit 4	Dusit 5	Dusit 6	Dusit 7	Dusit 12	Dusit 13
Session	Session 1	Session 2	Session 3	Session 4	Session 5	Session 6
13:00 – 13:15	TIChe-AM-01	TIChe-BE-01	 Invited Speaker	TIChe-EF-01	 Invited Speaker	TIChe-IA-01
13:15 – 13:30	TIChe-AM-02	TIChe-BE-02	 TIChe-IV-03	TIChe-EF-03	 TIChe-IV-01	TIChe-IA-03
13:30 – 13:45	TIChe-AM-04	TIChe-BE-03	TIChe-CR-02	TIChe-EF-04	TIChe-SG-07	TIChe-IA-04
13:45 – 14:00	TIChe-AM-05	TIChe-BE-20	TIChe-CR-03	TIChe-EF-05	TIChe-SG-08	TIChe-PE-01
14:00 – 14:15	TIChe-AM-34	TIChe-BE-28	TIChe-CR-32	TIChe-EF-06	TIChe-SG-13	TIChe-PE-03
14:15 – 14:30	Networking Break (Coffee Break)					 Refreshment Zone (5 <sup>th</sup> Floor)

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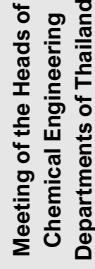
14:30 – 15:45	<b>TIChe2025 Oral Presentation (Parallel)</b>					 Dusit 4, 5, 6, 7, 12, 13 (5 <sup>th</sup> Floor)
Room	Dusit 4	Dusit 5	Dusit 6	Dusit 7	Dusit 12	Dusit 13
Session	Session 7	Session 8	Session 9	Session 10	Session 11	Session 12
14:30 – 14:45	 TIChe-IV-02	TIChe-BE-04	 TIChe-IV-06	TIChe-EF-02	TIChe-SG-02	TIChe-PE-06
14:45 – 15:00		TIChe-BE-05		TIChe-EF-09	TIChe-SG-03	TIChe-PE-08
15:00 – 15:15	TIChe-AM-03	TIChe-BE-07	TIChe-CR-01	TIChe-EF-10	TIChe-SG-06	TIChe-PE-11
15:15 – 15:30	TIChe-AM-06	TIChe-BE-08	TIChe-CR-08	TIChe-EF-13	TIChe-SG-10	TIChe-PE-12
15:30 – 15:45	TIChe-AM-07	TIChe-BE-11	TIChe-CR-11	TIChe-EF-17	TIChe-SG-17	TIChe-PE-13
15:45 – 18:30	<b>Networking &amp; Happy Hour at Exhibition Zone Gathering</b> (Join with TNChE Asia 2025)				 Napalai A, B, C, D, E (4 <sup>th</sup> Floor)	
<b>END OF DAY 1</b>						

## TECHNICAL PROGRAM

### The 34<sup>th</sup> Thai Institution of Chemical Engineering and Applied Chemistry International Conference (TIChe2025)

**Day 2 : May 21, 2025**

08:00 – 09:00	Registration					 Registration Area (5 <sup>th</sup> Floor)
09:00 – 12:00	<b>TIChe High School Project Contest 2025 (Parallel)</b> Opening Ceremony, Poster Competition & Award Ceremony					 Activity Hall (5 <sup>th</sup> Floor)
09:00 – 10:15	<b>TIChe2025 Oral Presentation (Parallel)</b>					 Dusit 4, 5, 6, 7, 11, 12&13 (5 <sup>th</sup> Floor)
Room	Dusit 4	Dusit 5	Dusit 6	Dusit 7	Dusit 11	Dusit 12 & 13
Session	Session 13	Session 14	Session 15	Session 16	Session 17	Session 18
09:00 – 09:15	 TIChe-AM-09	TIChe-BE-06	 TIChe-IV-08	TIChe-EF-15	TIChe-SG-01	 TIChe-IV-04
09:15 – 09:30	 TIChe-CR-30	TIChe-BE-09		TIChe-EF-14	TIChe-SG-18	
09:30 – 09:45	TIChe-AM-10	TIChe-BE-12	TIChe-CR-09	TIChe-PE-07	TIChe-SG-19	TIChe-PE-09
09:45 – 10:00	TIChe-AM-12	TIChe-BE-13	TIChe-CR-16	TIChe-PE-15	TIChe-SG-23	TIChe-PE-16
10:00 – 10:15	TIChe-AM-15	TIChe-BE-14	TIChe-CR-20	TIChe-PE-17	TIChe-SG-24	TIChe-PE-18
10:15 – 10:30	Networking Break (Coffee Break)					 Refreshment Zone (5 <sup>th</sup> Floor)
<b>Continued on next page</b>						

10:30 – 11:45	<b>TIChe2025 Oral Presentation (Parallel)</b>					 Dusit 4, 5, 6, 7, 11, 12&13 (5 <sup>th</sup> Floor)
Room	Dusit 4	Dusit 5	Dusit 6	Dusit 7	Dusit 11	Dusit 12 & 13
Session	Session 19	Session 20	Session 21	Session 22	Session 23	Session 24
10:30 – 10:45	 Invited Speaker	TIChe-BE-10	TIChe-CR-17	TIChe-AM-14	 Invited Speaker	TIChe-PE-10
10:45 – 11:00	TIChe-IV-07	TIChe-BE-15	TIChe-CR-21	TIChe-AM-19	TIChe-IV-05	TIChe-PE-19
11:00 – 11:15	TIChe-AM-11	TIChe-BE-16	TIChe-CR-28	TIChe-AM-21	TIChe-SG-15	TIChe-PE-20
11:15 – 11:30	TIChe-AM-13	TIChe-BE-23	TIChe-CR-29	TIChe-AM-24	TIChe-SG-21	TIChe-PE-23
11:30 – 11:45	TIChe-AM-16	TIChe-BE-25	TIChe-CR-33	TIChe-AM-26	TIChe-SG-34	TIChe-PE-25
11:45 – 13:00	<b>Lunch</b>				 Dusit 1, 2, 3 (5 <sup>th</sup> Floor)	
13:00 – 15:00	<b>TIChe2025 Poster Presentation (Parallel)</b>				 Activity Hall (5 <sup>th</sup> Floor)	
13:00 – 14:15	<b>TIChe2025 Oral Presentation (Parallel) &amp; Meeting</b>				 Dusit 4, 5, 6, 7, 11, 12&13 (5 <sup>th</sup> Floor)	
Room	Dusit 4	Dusit 5	Dusit 6	Dusit 7	Dusit 11	Dusit 12 & 13
Session	Session 25	Session 26	Session 27	Session 28	Session 29	Session 30
13:00 – 13:15	TIChe-AM-08	TIChe-BE-19	TIChe-CR-04	TIChe-AM-20	 Meeting of the Heads of Chemical Engineering Departments of Thailand	TIChe-SG-30
13:15 – 13:30	TIChe-AM-22	TIChe-BE-26	TIChe-CR-22	TIChe-AM-38		TIChe-SG-32
13:30 – 13:45	TIChe-AM-25	TIChe-BE-27	TIChe-CR-23	TIChe-BE-30		TIChe-SG-38
13:45 – 14:00	TIChe-AM-28	TIChe-BE-36	TIChe-CR-26	TIChe-SG-20		TIChe-SG-40
14:00 – 14:15	TIChe-AM-36	TIChe-BE-37	TIChe-CR-31	TIChe-SG-28	<b>No Event</b>	
14:15 – 14:30	Networking Break (Coffee Break)				 Refreshment Zone (5 <sup>th</sup> Floor)	

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14:30 – 16:15	<b>TIChE Plant Design Competition 2025, Award &amp; Meeting</b>					📍 Dusit 11, 12&13 (5 <sup>th</sup> Floor)
Room	Dusit 4	Dusit 5	Dusit 6	Dusit 7	Dusit 11	Dusit 12&13
Session	No Event	No Event	No Event	No Event	Session 31	Session 32
14:30 – 16:00					Meeting on Process Simulation Software for Academic Use	TIChE Plant Design Competition 2025
16:00 – 16:15	No Event	No Event	No Event	No Event	No Event	Award Ceremony for the 2 <sup>nd</sup> TIChE-AVEVA Simulation Contest 2025
16:15 – 17:00						Award and Closing Ceremony
<b>END OF DAY 2</b>						
<b>END OF TIChE2025 CONFERENCE</b>						

## ORAL PRESENTATION PROGRAM

### The 34<sup>th</sup> Thai Institution of Chemical Engineering and Applied Chemistry International Conference (TIChe2025)

**Day 1 : Tuesday, May 20, 2025**

<b>Session 1 : Advanced Materials and Nanotechnology (AM)</b>			<b>Dusit 4 (5<sup>th</sup> Floor)</b>  13:00 – 14:15
<b>Time</b>	<b>Abstract Code</b>	<b>Title</b>	<b>Presenter</b>
13:00 – 13:15	TIChe-AM-01	Removal of heavy metal ions ( $Pb^{2+}$ , $Hg^{2+}$ ) from water using N-doped activated carbon derived from bamboo waste: Equilibrium study	<b>Mr. Chaisawat Rattanadon</b> Suranaree University of Technology, Thailand
13:15 – 13:30	TIChe-AM-02	Enhanced $CO_2$ photoreduction in synthetic seawater using black $TiO_2$ nanowires: Synthesis, characterization, and performance	<b>Mr. Kongphoom Khumsupa</b> Mahidol University, Thailand
13:30 – 13:45	TIChe-AM-04	Synthesis, swelling behavior, and niacinamide release of 1,4-butanediol diglycidyl ether-crosslinked levan hydrogels from <i>Bacillus siamensis</i>	<b>Asst. Prof. Dr. Cherdpong Seedao</b> Burapha University, Thailand
13:45 – 14:00	TIChe-AM-05	Dry gel conversion of CHA zeolite for direct air capture ( $CO_2$ ): Screening of optimal synthesis conditions	<b>Mr. Weerawit Luewanichwong</b> Chulalongkorn University, Thailand
14:00 – 14:15	TIChe-AM-34	Development of self-adhesive biopolymer hydrogel for strain sensors crosslinked with tannic acid	<b>Mr. Noppanan Putdon</b> Khon Kaen University, Thailand
14:15 – 14:30	Networking Break (Coffee Break)		 Refreshment Zone (5 <sup>th</sup> Floor)

<b>Session 2 : Biochemical and Environmental Engineering (BE)</b>			<b>Dusit 5 (5<sup>th</sup> Floor)</b>  13:00 – 14:15
<b>Time</b>	<b>Abstract Code</b>	<b>Title</b>	<b>Presenter</b>
13:00 – 13:15	TIChe-BE-01	Comparative study of methylene blue adsorption using calcium oxide derived from chicken eggshells and calcium oxide standard	<b>Miss Pinchaphat Poka</b> <b>Miss Woravarun Unkaew</b> Samsenwittayalai School, Thailand
13:15 – 13:30	TIChe-BE-02	Removal of $Pb(II)$ and $Hg(II)$ from water on activated carbon: An insight into multicomponent adsorption	<b>Mr. Thanyakorn Sangoondee</b> Suranaree University of Technology, Thailand
13:30 – 13:45	TIChe-BE-03	Development of composite scaffolds derived from palm kernel shell ash with curcumin encapsulation for tissue engineering applications	<b>Mr. Manutchai Eiamniyom</b> Mahidol University, Thailand
13:45 – 14:00	TIChe-BE-20	Enhanced desalination through capacitive deionization: Synthesis and performance evaluation of rubberwood-derived activated carbon	<b>Ms. Nannapat Kaewsaenmaung</b> Khon Kaen University, Thailand
14:00 – 14:15	TIChe-BE-28	Nutrient release from struvite-biochar composites prepared by co-precipitation	<b>Mr. Wasu Jantapa</b> Khon Kaen University, Thailand
14:15 – 14:30	Networking Break (Coffee Break)		 Refreshment Zone (5 <sup>th</sup> Floor)

## ORAL PRESENTATION PROGRAM

### The 34<sup>th</sup> Thai Institution of Chemical Engineering and Applied Chemistry International Conference (TIChe2025)

**Day 1 : Tuesday, May 20, 2025**

<b>Session 3 : Catalysis and Reaction Engineering (CR)</b>			<b>Dusit 6 (5<sup>th</sup> Floor)</b>  13:00 – 14:15
<b>Time</b>	<b>Abstract Code</b>	<b>Title</b>	<b>Presenter</b>
13:00 – 13:30	 TIChe-IV-03	Reaction mechanisms in rechargeable batteries for next-generation energy technology	 <b>Dr. Taketoshi Minato</b> Institute for Molecular Science, National Institute of Natural Science, Japan
13:30 – 13:45	TIChe-CR-02	Development of magnesium aluminate supported nickel catalyst in dry reforming of methane reaction	<b>Mr. Pongsaporn Poosri</b> Kasetsart University, Thailand
13:45 – 14:00	TIChe-CR-03	Effect of graphene nanoplatelets addition during electroless plating of ABS on the properties of copper-nickel-chromium coated ABS	<b>Miss Wantana Chuakamhod</b> Chulalongkorn University, Thailand
14:00 – 14:15	TIChe-CR-32	Fabrication of Fe-TiO <sub>2</sub> loaded on mesoporous activated carbon and improved by Fe <sub>3</sub> O <sub>4</sub> for reusing on photocatalytic degradation of reactive red 120 under visible light irradiation	<b>Mr. Jakkapat Saekhaw</b> Khon Kaen University, Thailand
14:15 – 14:30	Networking Break (Coffee Break)		 Refreshment Zone (5 <sup>th</sup> Floor)
<b>Session 4 : Energy and Fuels (EF)</b>			<b>Dusit 7 (5<sup>th</sup> Floor)</b>  13:00 – 14:15
<b>Time</b>	<b>Abstract Code</b>	<b>Title</b>	<b>Presenter</b>
13:00 – 13:15	TIChe-EF-01	Unlocking the potential of semi-clathrates for gas storage: Synergistic enhancement of TBAF with amino acids	<b>Mr. Chakorn Viriyakul</b> Chulalongkorn University, Thailand
13:15 – 13:30	TIChe-EF-03	Feasibility of hydrogen production from crude glycerol via photocatalysis using TiO <sub>2</sub> -based photocatalysts	<b>Mr. Thanapol Suttiphong</b> Mahidol University, Thailand
13:30 – 13:45	TIChe-EF-04	Effect of cation type and carrageenan structure on the formation and electrochemical properties of bio-gel electrolytes	<b>Mr. Dedy Firmansyah</b> Thammasat University, Thailand
13:45 – 14:00	TIChe-EF-05	Regeneration by electrodialysis of secondary spent monoethanolamine solution obtained after mineralization of captured carbon dioxide with calcium sulfate	<b>Miss Ketwarang Nimnualrat</b> Chulalongkorn University, Thailand
14:00 – 14:15	TIChe-EF-06	One-dimensional simulation of an alkaline-acid direct glycerol fuel cell	<b>Miss Papitchaya Chaloeypanit</b> King Mongkut's University of Technology Thonburi, Thailand
14:15 – 14:30	Networking Break (Coffee Break)		 Refreshment Zone (5 <sup>th</sup> Floor)

## ORAL PRESENTATION PROGRAM

### The 34<sup>th</sup> Thai Institution of Chemical Engineering and Applied Chemistry International Conference (TIChe2025)

**Day 1 : Tuesday, May 20, 2025**

<b>Session 5 : Sustainable and Green Chemistry (SG)</b>			 <b>Dusit 12 (5<sup>th</sup> Floor)</b>  <b>13:00 – 14:15</b>
<b>Time</b>	<b>Abstract Code</b>	<b>Title</b>	<b>Presenter</b>
13:00 – 13:30	 <b>TIChe-IV-01</b>	Material design and degradation engineering for plastics and textile recycling	 <b>Prof. Dr. Hiroshi Uyama</b> Department of Applied Chemistry The University of Osaka, Japan
13:30 – 13:45	<b>TIChe-SG-07</b>	A study of the self-heating propensity of raw and torrefied biomasses	<b>Dr. Kyaw Thu</b> King Mongkut's University of Technology Thonburi, Thailand
13:45 – 14:00	<b>TIChe-SG-08</b>	Preparation of bio-based polyol from soybean meal for polyurethane foam production	<b>Miss Jidapa Klipputt</b> Thammasat University, Thailand
14:00 – 14:15	<b>TIChe-SG-13</b>	Bio-based coating from chitosan and ethyl cellulose for oil- and water-resistant paper packaging	<b>Miss Oraya Sraphaengnoi</b> Chulalongkorn University, Thailand
14:15 – 14:30	Networking Break (Coffee Break)		 Refreshment Zone (5 <sup>th</sup> Floor)
<b>Session 6 : Industrial Applications and Case Studies (IA) Process Engineering and Digital Technologies (PE)</b>			 <b>Dusit 13 (5<sup>th</sup> Floor)</b>  <b>13:00 – 14:15</b>
<b>Time</b>	<b>Abstract Code</b>	<b>Title</b>	<b>Presenter</b>
13:00 – 13:15	<b>TIChe-IA-01</b>	Prediction of latent heat of vaporization of binary mixture using COSMO-SAC model	<b>Mr. Natamorn Kamlue</b> King Mongkut's Institute of Technology Ladkrabang, Thailand
13:15 – 13:30	<b>TIChe-IA-03</b>	Feedforward control of pulsed bed adsorption column for colorant removal in sugar syrup at different flow rates	<b>Dr. Terasut Sookkumnerd</b> Suranaree University of Technology, Thailand
13:30 – 13:45	<b>TIChe-IA-04</b>	The impact of learner characteristics on learning outcomes and time to degree completion	<b>Asst. Prof. Dr. Idtisak Paopo</b> Ubon Ratchathani University, Thailand
13:45 – 14:00	<b>TIChe-PE-01</b>	Development of computational fluid dynamics modeling of packed bed membrane reactor for dimethyl ether production from carbon dioxide	<b>Miss Kannika Lhongbangplee</b> Mahidol University, Thailand
14:00 – 14:15	<b>TIChe-PE-03</b>	Graph neural network for descriptor-free CO <sub>2</sub> solubility prediction in aqueous amines	<b>Mr. Apri Wahyudi</b> Chulalongkorn University, Thailand
14:15 – 14:30	Networking Break (Coffee Break)		 Refreshment Zone (5 <sup>th</sup> Floor)

## ORAL PRESENTATION PROGRAM

### The 34<sup>th</sup> Thai Institution of Chemical Engineering and Applied Chemistry International Conference (TIChe2025)

**Day 1 : Tuesday, May 20, 2025**

#### Session 7 : Advanced Materials and Nanotechnology (AM)

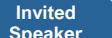
 **Dusit 4 (5<sup>th</sup> Floor)**  
 **14:30 – 15:45**

**Chair :** Prof. Dr. Ravin Narain

College of Natural and Applied Sciences, University of Alberta, Canada

**Co-Chair :** Assoc. Prof. Dr. Khanita Kamwilaisak

Department of Chemical Engineering, Faculty of Engineering, Khon Kaen University, Thailand

Time	Abstract Code	Title	Presenter
14:30 – 15:00	 TIChe-IV-02	Polymer based nanosystems and hydrogels for biomedical applications	 <b>Prof. Dr. Ravin Narain</b> College of Natural and Applied Sciences, University of Alberta, Canada
15:00 – 15:15	TIChe-AM-03	Synthesis and characterizations of triethanolamine-copper black titanium photocatalyst for carbon dioxide photoreduction	<b>Mr. Poomipat Chotngamkham</b> Mahidol University, Thailand
15:15 – 15:30	TIChe-AM-06	Effects of titanium nitride nanoparticles on the properties of light-responsive polybenzoxazine/epoxidized soybean oil copolymer	<b>Mr. Jeremiah Otokpa Oja</b> Chulalongkorn University, Thailand
15:30 – 15:45	TIChe-AM-07	Antioxidant sugar from cocrystallization of sucrose, erythritol and vitamin C	<b>Miss Norramon Sathanasaowaphak</b> Suranaree University of Technology, Thailand
15:45 – 18:30	<b>Networking &amp; Happy Hour at Exhibition Zone Gathering</b> (Join with TNChE Asia 2025)		 Napalai A, B, C, D, E (4 <sup>th</sup> Floor)

#### Session 8 : Biochemical and Environmental Engineering (BE)

 **Dusit 5 (5<sup>th</sup> Floor)**  
 **14:30 – 15:45**

**Chair :** Assoc. Prof. Dr. Santi Chueter

Department of Chemical Engineering, Faculty of Engineering, King Mongkut's University of Technology North Bangkok, Thailand

**Co-Chair :** Asst. Prof. Dr. Methus Suwannaruang

Department of Chemical Engineering, Faculty of Engineering, Khon Kaen University, Thailand

Time	Abstract Code	Title	Presenter
14:30 – 14:45	TIChe-BE-04	Simultaneous saccharification and fermentation (SSF) of corncobs for bioethanol production using <i>saccharomyces cerevisiae</i> SC90	<b>Mr. Peerawat Suyatar</b> Kasetsart University, Thailand
14:45 – 15:00	TIChe-BE-05	Optimization of bovine serum albumin concentration and diafiltration via tangential flow filtration	<b>Mr. Worrawich Boonpan</b> King Mongkut's University of Technology Thonburi, Thailand
15:00 – 15:15	TIChe-BE-07	Techno-economic analysis of <i>Ulva spp.</i> cultivation for capturing CO <sub>2</sub> emissions from natural gas power plants in Thailand	<b>Mr. Kantaphan Punnaanan</b> Chulalongkorn University, Thailand
15:15 – 15:30	TIChe-BE-08	<i>Centella asiatica</i> active ingredients extraction using ultrasonic-assisted extraction and maceration	<b>Miss Nichapa Areepong</b> Thammasat University, Thailand
15:30 – 15:45	TIChe-BE-11	The occurrence of polycyclic aromatic hydrocarbons (PAHs) and halogenated PAHs in Chao Praya River in dissolved phase	<b>Ms. Kanyanat Aunachad</b> Mahidol University, Thailand
15:45 – 18:30	<b>Networking &amp; Happy Hour at Exhibition Zone Gathering</b> (Join with TNChE Asia 2025)		 Napalai A, B, C, D, E (4 <sup>th</sup> Floor)

## ORAL PRESENTATION PROGRAM

### The 34<sup>th</sup> Thai Institution of Chemical Engineering and Applied Chemistry International Conference (TIChe2025)

**Day 1 : Tuesday, May 20, 2025**

#### **Session 9 : Catalysis and Reaction Engineering (CR)**

 **Dusit 6 (5<sup>th</sup> Floor)**  
 **14:30 – 15:45**

**Chair :** Prof. Dr. Katsutoshi Nagaoka

Department of Chemical Systems Engineering, Nagoya University, Japan

**Co-Chair :** Assoc. Prof. Dr. Sutasinee Neramittagapong

Department of Chemical Engineering, Faculty of Engineering, Khon Kaen University, Thailand

Time	Abstract Code	Title	Presenter
14:30 – 15:00	 TIChe-IV-06	Boosting ammonia synthesis under mild conditions by control of the BaO-metal interface	 <b>Prof. Dr. Katsutoshi Nagaoka</b> Department of Chemical Systems Engineering, Nagoya University, Japan
15:00 – 15:15	TIChe-CR-01	Autonomous Lorentz force-powered chiral encoded metal rotors for enantioselective synthesis	<b>Miss Wanmai Srisuwanno</b> Vidyasirimedhi Institute of Science and Technology, Thailand
15:15 – 15:30	TIChe-CR-08	A comparative study of commercial- and hydrothermal-synthesized TiO <sub>2</sub> nanoparticles for photocatalytic silver recovery from jewelry plating effluent	<b>Ms. Midori Tanaka</b> Mahidol University, Thailand
15:30 – 15:45	TIChe-CR-11	Double perovskite enhanced with exsolved Ni-Co particles in Sr <sub>1.95</sub> TiMo <sub>1-x</sub> (NiCo) <sub>x</sub> O <sub>6-δ</sub> as anode for direct-fed ammonia solid oxide fuel cell	<b>Ms. Solida Oun</b> Chulalongkorn University, Thailand
15:45 – 18:30	<b>Networking &amp; Happy Hour at Exhibition Zone Gathering</b> (Join with TNChE Asia 2025)		 Napalai A, B, C, D, E (4 <sup>th</sup> Floor)

#### **Session 10 : Energy and Fuels (EF)**

 **Dusit 7 (5<sup>th</sup> Floor)**  
 **14:30 – 15:45**

**Chair :** Assoc. Prof. Dr. Nakorn Worasuwannarak

The Joint Graduate School of Energy and Environment, King Mongkut's University of Technology Thonburi, Thailand

**Co-Chair :** Asst. Prof. Dr. Kaewta Jetsrisuparb

Department of Chemical Engineering, Faculty of Engineering, Khon Kaen University, Thailand

Time	Abstract Code	Title	Presenter
14:30 – 14:45	TIChe-EF-02	Effect of diverse cation-anion salt combinations on methane hydrate formation	<b>Mr. Teerapat Pongpuak</b> Chulalongkorn University, Thailand
14:45 – 15:00	TIChe-EF-09	Enhancing drying efficiency of STR20 block rubber production using hot air pre-drying treatment	<b>Mr. Jirapat Kongsong</b> Prince of Songkla University, Thailand
15:00 – 15:15	TIChe-EF-10	Reduction and capture of chlorine in Napier grass using microwave torrefaction	<b>Asst. Prof. Dr. Prodpran Siritheerasas</b> Thammasat University, Thailand
15:15 – 15:30	TIChe-EF-13	Four-zone modelling of modified downdraft gasifier for performance prediction: Case study of semi-batch operation	<b>Mr. Kantapat Palawat</b> King Mongkut's University of Technology North Bangkok, Thailand
15:30 – 15:45	TIChe-EF-17	Development of low-cost Ag-based ORR electrodes via electrodeposition on carbon cloth for AEM fuel cells	<b>Mr. Natthaphon Sirireak</b> King Mongkut's University of Technology Thonburi, Thailand
15:45 – 18:30	<b>Networking &amp; Happy Hour at Exhibition Zone Gathering</b> (Join with TNChE Asia 2025)		 Napalai A, B, C, D, E (4 <sup>th</sup> Floor)

## ORAL PRESENTATION PROGRAM

### The 34<sup>th</sup> Thai Institution of Chemical Engineering and Applied Chemistry International Conference (TIChe2025)

**Day 1 : Tuesday, May 20, 2025**

<b>Session 11 : Sustainable and Green Chemistry (SG)</b>			<b>Dusit 12 (5<sup>th</sup> Floor)</b>  14:30 – 15:45		
<b>Chair :</b> Mr. Kieran N. Twaddle London Centre for Nanotechnology, University College London, United Kingdom					
<b>Co-Chair :</b> Assoc. Prof. Dr. Duangkanok Tanangteerapong Department of Chemical Engineering, Faculty of Engineering, Khon Kaen University, Thailand					
Time	Abstract Code	Title	Presenter		
14:30 – 14:45	TIChe-SG-02	Continuous production of 5-hydroxymethylfurfural using monophasic solvents for pharmaceutical applications	Miss Kritsanalak Thongkan Mahidol University, Thailand		
14:45 – 15:00	TIChe-SG-03	Sub-seafloor carbon sequestration as hydrates: Experimental study on CO <sub>2</sub> hydrate formation in clay-rich marine sediments	Ms. Viphada Yodpetch Chulalongkorn University, Thailand		
15:00 – 15:15	TIChe-SG-06	Process simulation of syngas production through glycerol reforming with carbon dioxide and steam for methanol synthesis	Mr. Patcharapol Chaladthunyakij King Mongkut's Institute of Technology Ladkrabang, Thailand		
15:15 – 15:30	TIChe-SG-10	Off-grade epoxy resin and waste tire composites for CO <sub>2</sub> adsorption	Mr. Teerapat Inudom Chulalongkorn University, Thailand		
15:30 – 15:45	TIChe-SG-17	Ethanol-assisted CO <sub>2</sub> hydrogenation to methanol in a trickle-bed reactor	Mr. Pattrapol Akeakkharanusorn Chulalongkorn University, Thailand		
15:45 – 18:30	<b>Networking &amp; Happy Hour at Exhibition Zone Gathering</b> (Join with TNChE Asia 2025)		 Napalai A, B, C, D, E (4 <sup>th</sup> Floor)		
<b>Session 12 : Process Engineering and Digital Technologies (PE)</b>			<b>Dusit 13 (5<sup>th</sup> Floor)</b>  14:30 – 15:45		
<b>Chair :</b> Dr. Terasut Sookkumnerd School of Chemical Engineering, Institute of Engineering, Suranaree University of Technology, Thailand					
<b>Co-Chair :</b> Assoc. Prof. Dr. Kitirote Wantala Department of Chemical Engineering, Faculty of Engineering, Khon Kaen University, Thailand					
Time	Abstract Code	Title	Presenter		
14:30 – 14:45	TIChe-PE-06	Comparative analysis of machine learning models for predicting operating condition in a pentane-hexane distillation column with limited data	Mr. Jirapat Romkaew Chulalongkorn University, Thailand		
14:45 – 15:00	TIChe-PE-08	Performance of combination ESN and LSTM in prediction of temperature in magnetic heating reactor	Mr. Rasiq Dipta Alkindi Chulalongkorn University, Thailand		
15:00 – 15:15	TIChe-PE-11	Simulation of desulfurization in natural gas by using ferrous oxide	Assoc. Prof. Dr. Satok Chaikunchuensakun Thammasat University, Thailand		
15:15 – 15:30	TIChe-PE-12	Modification of the syngas production process using fluidized-bed twin reactor system and chemical looping gasifier	Mr. Sutanon Krataipo Silpakorn University, Thailand		
15:30 – 15:45	TIChe-PE-13	Reinforcement learning control for optimal ethanol production from microbial fermentation	Asst. Prof. Dr. Bundit Boonkhaos Nakhon Phanom University, Thailand		
15:45 – 18:30	<b>Networking &amp; Happy Hour at Exhibition Zone Gathering</b> (Join with TNChE Asia 2025)		 Napalai A, B, C, D, E (4 <sup>th</sup> Floor)		

## ORAL PRESENTATION PROGRAM

### The 34<sup>th</sup> Thai Institution of Chemical Engineering and Applied Chemistry International Conference (TIChe2025)

**Day 2 : Wednesday, May 21, 2025**

#### **Session 13 : Advanced Materials and Nanotechnology (AM) Catalysis and Reaction Engineering (CR)**

 **Dusit 4 (5<sup>th</sup> Floor)**

 **09:00 – 10:15**

**Chair :** Prof. Dr. Hiroshi Uyama

Department of Applied Chemistry, The University of Osaka, Japan

**Co-Chair :** Assoc. Prof. Dr. Ponnappa Kasemsri

Department of Chemical Engineering, Faculty of Engineering, Khon Kaen University, Thailand

Time	Abstract Code	Title	Presenter
09:00 – 09:15	 TIChe-AM-09	Flexible piezoresistive sensor based on natural rubber/chitosan/graphene composites for healthcare applications	Mr. Supakorn Suwanphiphat Chulalongkorn University, Thailand National Taiwan University, Taiwan
09:15 – 09:30	 TIChe-CR-30	Synthesis of Al-doped MCM-41 for molecular sieve and catalysis application	Mr. Nathonchatpong Burong Chulalongkorn University, Thailand National Taiwan University, Taiwan
09:30 – 09:45	TIChe-AM-10	Development of self-healing polymers from bio-based benzoxazine blended with poly (ethylene glycol)	Miss Pharaporn Yodkum Chulalongkorn University, Thailand
09:45 – 10:00	TIChe-AM-12	Cellulose nanocrystals from bagasse pulp for oil powder production	Miss Pimpisa Pimpaeng Khon Kaen University, Thailand
10:00 – 10:15	TIChe-AM-15	Influence of CaO on the durability of geopolymers in acidic environments	Asst. Prof. Dr. Cherdphong Seedao Burapha University, Thailand
10:15 – 10:30	Networking Break (Coffee Break)		 Refreshment Zone (5 <sup>th</sup> Floor)

#### **Session 14 : Biochemical and Environmental Engineering (BE)**

 **Dusit 5 (5<sup>th</sup> Floor)**

 **09:00 – 10:15**

**Chair :** Prof. Dr. Ravin Narain

College of Natural and Applied Sciences, University of Alberta, Canada

**Co-Chair :** Asst. Prof. Dr. Panarat Rattanaphanee

School of Chemical Engineering, Institute of Engineering, Suranaree University of Technology, Thailand

Time	Abstract Code	Title	Presenter
09:00 – 09:15	TIChe-BE-06	Thermo-responsive PVDF-grafted-PVNCL membranes with switchable wettability for efficient oil-water separation	Miss Supakorn Janmune King Mongkut's University of Technology Thonburi, Thailand
09:15 – 09:30	TIChe-BE-09	<i>Carthamus tinctorius</i> L. flower antioxidant extracts from subcritical ethanol extraction	Mr. Tanapat Wangsomboonsiri Mr. Peerapong Srinukul Thammasat University, Thailand
09:30 – 09:45	TIChe-BE-12	Enhancing absorption under load in alginate-based superabsorbent polymers for sustainable disposable diapers	Miss Nadiya Abdulroman Mahidol University, Thailand
09:45 – 10:00	TIChe-BE-13	Electrochemical improvement of mangosteen peel extract	Mr. Teradon Loypipan Kasetsart University, Thailand
10:00 – 10:15	TIChe-BE-14	Temperature effects on phosphorus transformations in P-enriched biochars	Miss Sreyopov Yoem Khon Kaen University, Thailand
10:15 – 10:30	Networking Break (Coffee Break)		 Refreshment Zone (5 <sup>th</sup> Floor)

## ORAL PRESENTATION PROGRAM

### The 34<sup>th</sup> Thai Institution of Chemical Engineering and Applied Chemistry International Conference (TIChe2025)

**Day 2 : Wednesday, May 21, 2025**

#### **Session 15 : Catalysis and Reaction Engineering (CR)**

 **Dusit 6 (5<sup>th</sup> Floor)**  
 **09:00 – 10:15**

**Chair :** **Asst. Prof. Dr. Xiaohong Tan**

Department of Chemistry, Bowling Green State University, United States

**Co-Chair :** **Assoc. Prof. Dr. Kitirote Wantala**

Department of Chemical Engineering, Faculty of Engineering, Khon Kaen University, Thailand

Time	Abstract Code	Title	Presenter
09:00 – 09:30	 <b>TIChe-IV-08</b>	Dual-handed recognition: Targeting a single protein with two chemical ligands	 <b>Asst. Prof. Dr. Xiaohong Tan</b> Department of Chemistry, Bowling Green State University, USA
09:30 – 09:45	<b>TIChe-CR-09</b>	Photocatalytic silver recovery from cyanide-based plating effluent via TiO <sub>2</sub> nanoparticles synthesized by microwave-assisted method	<b>Mr. Auttawit Thoumrungroj</b> Mahidol University, Thailand
09:45 – 10:00	<b>TIChe-CR-16</b>	Simulation of dry and steam reforming of methane over a nickel-based catalyst in a fixed-bed tube reactor using COMSOL	<b>Mr. Krissadang Khamma</b> King Mongkut's University of Technology Thonburi, Thailand
10:00 – 10:15	<b>TIChe-CR-20</b>	Development of core-shell LaNi <sub>0.8</sub> Fe <sub>0.2</sub> O <sub>3</sub> catalysts with CeZrO <sub>2</sub> shells for carbon-resistant dry reforming of methane	<b>Miss Suchayamon Kaewprasert</b> Chulalongkorn University, Thailand
10:15 – 10:30	Networking Break (Coffee Break)		
			 Refreshment Zone (5 <sup>th</sup> Floor)

#### **Session 16 : Energy and Fuels (EF) Process Engineering and Digital Technologies (PE)**

 **Dusit 7 (5<sup>th</sup> Floor)**  
 **09:00 – 10:15**

**Chair :** **Prof. Dr. Mali Hunsom**

Department of Chemical Engineering, Faculty of Engineering, Mahidol University, Thailand

**Co-Chair :** **Assoc. Prof. Dr. Khanita Kamwilaisak**

Department of Chemical Engineering, Faculty of Engineering, Khon Kaen University, Thailand

Time	Abstract Code	Title	Presenter
09:00 – 09:15	<b>TIChe-EF-15</b>	Photocatalytic green hydrogen production by gold-decorated TiO <sub>2-x</sub> photocatalyst	<b>Prof. Dr. Mali Hunsom</b> Mahidol University, Thailand
09:15 – 09:30	<b>TIChe-EF-14</b>	Improvement of electrocatalytic activities of Ag-based catalysts in oxygen reduction and oxygen evolution reactions	<b>Miss Phatcharanan Pipatnawakit</b> King Mongkut's University of Technology Thonburi, Thailand
09:30 – 09:45	<b>TIChe-PE-07</b>	Techno-economic analysis of hydrogen production pathways for carbon dioxide to methanol conversion process	<b>Mr. Gantaphon Manimon</b> Chulalongkorn University, Thailand
09:45 – 10:00	<b>TIChe-PE-15</b>	Performance evaluation of combined torrefaction and gasification process of lignocellulosic biomass	<b>Mr. Aphiwat Lakkhanasombat</b> King Mongkut's University of Technology North Bangkok, Thailand
10:00 – 10:15	<b>TIChe-PE-17</b>	Optimal input variables for an artificial neural network to predict evaporation efficiency in detergent production process	<b>Mr. Baramee Imsin</b> Burapha University, Thailand
10:15 – 10:30	Networking Break (Coffee Break)		
			 Refreshment Zone (5 <sup>th</sup> Floor)

## ORAL PRESENTATION PROGRAM

### The 34<sup>th</sup> Thai Institution of Chemical Engineering and Applied Chemistry International Conference (TIChe2025)

**Day 2 : Wednesday, May 21, 2025**

#### **Session 17 : Sustainable and Green Chemistry (SG)**

 **Dusit 11 (5<sup>th</sup> Floor)**  
 **09:00 – 10:15**

**Chair :** **Dr. Taketoshi Minato**

Institute for Molecular Science, National Institute of Natural Science, Japan

**Co-Chair :** **Dr. Shawn C. Rood**

Department of Chemical Engineering, Faculty of Engineering, Khon Kaen University, Thailand

Time	Abstract Code	Title	Presenter
09:00 – 09:15	TIChe-SG-01	Enhancing non-catalytic biomass pyrolysis yield predictions using machine learning and data augmentation	Miss Anchalee Chaichanavongsaroj Kasetsart University, Thailand
09:15 – 09:30	TIChe-SG-18	Thermal, morphological and mechanical properties of recycled Al film label/LLDPE composites	Miss Siriwan Naknoy Burapha University, Thailand
09:30 – 09:45	TIChe-SG-19	Sustainable synthesis of monolaurin via esterification of lauric acid using TPA-modified biochar derived from coconut shells	Miss Junyanat Woraphasphaiboon Chulalongkorn University, Thailand
09:45 – 10:00	TIChe-SG-23	Development of fibroin-based solid electrolyte for electrochromic windows	Mr. Akarawin Pimarnthisakorn Burapha University, Thailand
10:00 – 10:15	TIChe-SG-24	Development and characterization of bioplastic from banana peel and chitosan: A sustainable alternative for eco-friendly packaging	Miss Ulia Fitrass Thammasat University, Thailand
10:15 – 10:30	Networking Break (Coffee Break)		 Refreshment Zone (5 <sup>th</sup> Floor)

#### **Session 18 : Process Engineering and Digital Technologies (PE)**

 **Dusit 12&13 (5<sup>th</sup> Floor)**  
 **09:00 – 10:15**

**Chair :** **Prof. Dr. Nurak Grisdanurak**

Department of Chemical Engineering, Faculty of Engineering, Thammasat University, Thailand

**Co-Chair :** **Assoc. Prof. Dr. Racha Dejchanchaiwong**

Department of Chemical Engineering, Faculty of Engineering, Prince of Songkla University, Thailand

Time	Abstract Code	Title	Presenter
09:00 – 09:30	Invited Speaker TIChe-IV-04	Mechanical process of lithium-ion batteries recycling and its safety concerns	 <b>Prof. Dr. Nurak Grisdanurak</b> Department of Chemical Engineering, Thammasat University, Thailand
09:30 – 09:45	TIChe-PE-09	Techno-economic insights and limitation analysis of CO <sub>2</sub> capture via monoethanolamine (MEA) absorption	<b>Miss Manisa Mahahing</b> Chulalongkorn University, Thailand
09:45 – 10:00	TIChe-PE-16	Process simulation of synthetic fuel production from palm oil mill waste	<b>Mr. Worawit Morin</b> King Mongkut's University of Technology North Bangkok, Thailand
10:00 – 10:15	TIChe-PE-18	Effect of ethanol on the crystallization of DL-methionine polymorphs	<b>Miss Lamphoun Inthavideth</b> Suranaree University of Technology, Thailand
10:15 – 10:30	Networking Break (Coffee Break)		 Refreshment Zone (5 <sup>th</sup> Floor)

## ORAL PRESENTATION PROGRAM

### The 34<sup>th</sup> Thai Institution of Chemical Engineering and Applied Chemistry International Conference (TIChe2025)

**Day 2 : Wednesday, May 21, 2025**

#### **Session 19 : Advanced Materials and Nanotechnology (AM)**

 **Dusit 4 (5<sup>th</sup> Floor)**  
 **10:30 – 11:45**

**Chair :** **Mr. Kieran N. Twaddle**

London Centre for Nanotechnology, University College London, United Kingdom

**Co-Chair :** **Assoc. Prof. Dr. Soipatta Soisuwan**

Department of Chemical Engineering, Faculty of Engineering, Burapha University, Thailand

Time	Abstract Code	Title	Presenter
10:30 – 11:00	 <b>TIChe-IV-07</b>	In-situ pollution detection capability via robust diamond SERS	 <b>Mr. Kieran N. Twaddle</b> London Centre for Nanotechnology, University College London, UK
11:00 – 11:15	<b>TIChe-AM-11</b>	Toughness improvement of polybenzoxazine by blending with glycidyl methacrylate-grafted natural rubber	<b>Miss Yadapa Wasikarat</b> Chulalongkorn University, Thailand
11:15 – 11:30	<b>TIChe-AM-13</b>	Cellulose nanocrystals produced from bagasse pulp for drug delivery applications	<b>Miss Sirikanya Pimsaran</b> Khon Kaen University, Thailand
11:30 – 11:45	<b>TIChe-AM-16</b>	Preparation of N, S co-doped activated carbon from rice straw for high performance supercapacitor	<b>Mr. Tippapon Tocuveang</b> King Mongkut's University of Technology Thonburi, Thailand
11:45 – 12:00	Lunch		 <b>Dusit 1, 2, 3 (5<sup>th</sup> Floor)</b>

#### **Session 20 : Biochemical and Environmental Engineering (BE)**

 **Dusit 5 (5<sup>th</sup> Floor)**  
 **10:30 – 11:45**

**Chair :** **Dr. Wanwitoo Wanmolee**

Department of Chemical Engineering, Faculty of Engineering, King Mongkut's University of Technology North Bangkok, Thailand

**Co-Chair :** **Asst. Prof. Dr. Kaewta Jetsrisuparb**

Department of Chemical Engineering, Faculty of Engineering, Khon Kaen University, Thailand

Time	Abstract Code	Title	Presenter
10:30 – 10:45	<b>TIChe-BE-10</b>	Lignin extracted from rice straw and coconut coir	<b>Miss Supapohn Pohnanothai</b> Thammasat University, Thailand
10:45 – 11:00	<b>TIChe-BE-15</b>	Effects of cultivation temperature on alpha-amylase production from wild-type rice callus suspensions	<b>Ms. Worapicha Daungtongcome</b> King Mongkut's University of Technology Thonburi, Thailand
11:00 – 11:15	<b>TIChe-BE-16</b>	Lysine production from sugarcane molasses using <i>Corynebacterium glutamicum</i>	<b>Miss Phatthariya Phromngulueam</b> Suranaree University of Technology, Thailand
11:15 – 11:30	<b>TIChe-BE-23</b>	Sustainable production of drinking water from saltwater	<b>Miss Zu Zu Aung</b> Mahidol University, Thailand
11:30 – 11:45	<b>TIChe-BE-25</b>	Role of magnesium in phosphorus transformations during biomass pyrolysis	<b>Dr. Jesper Knijnenburg</b> Khon Kaen University, Thailand
11:45 – 12:00	Lunch		 <b>Dusit 1, 2, 3 (5<sup>th</sup> Floor)</b>

## ORAL PRESENTATION PROGRAM

### The 34<sup>th</sup> Thai Institution of Chemical Engineering and Applied Chemistry International Conference (TIChe2025)

**Day 2 : Wednesday, May 21, 2025**

#### **Session 21 : Catalysis and Reaction Engineering (CR)**

 **Dusit 6 (5<sup>th</sup> Floor)**  
 **10:30 – 11:45**

**Chair :** **Asst. Prof. Dr. Choowong Chaisuk**

Department of Chemical Engineering, Faculty of Engineering and Industrial Technology, Silpakorn University, Thailand

**Co-Chair :** **Dr. Suparat Sasrimuang**

Department of Chemical Engineering, Faculty of Engineering, Ubon Ratchathani University, Thailand

Time	Abstract Code	Title	Presenter
10:30 – 10:45	TIChe-CR-17	Promotional effect of Fe in the Cu/TiO <sub>2</sub> catalyst on the liquid-phase selective hydrogenation of furfural to furfuryl alcohol	Miss Jenjeera Sathukan Silpakorn University, Thailand
10:45 – 11:00	TIChe-CR-21	Integrated absorption-mineralization	Miss Wannida Lilathanakiad Chulalongkorn University, Thailand
11:00 – 11:15	TIChe-CR-28	Hydroconversion of biodiesel over Ni/beta zeolite catalysts prepared by glycine-assisted impregnation for sustainable aviation fuel production	Mr. Witchakorn Jankool Chulalongkorn University, Thailand
11:30 – 11:45	TIChe-CR-29	Optimization of biodiesel synthesis from waste cooking oil by transesterification reaction	Miss Chariyaporn Thanyathippipat King Mongkut's Institute of Technology Ladkrabang, Thailand
11:15 – 11:30	TIChe-CR-33	Catalytic activity in dry reforming of methane over Ce modified Ni/silica fiber catalyst	Assoc. Prof. Dr. Chanatip Samart Thammasat University, Thailand
11:45 – 12:00	Lunch		 Dusit 1, 2, 3 (5 <sup>th</sup> Floor)

#### **Session 22 : Advanced Materials and Nanotechnology (AM)**

 **Dusit 7 (5<sup>th</sup> Floor)**  
 **10:30 – 11:45**

**Chair :** **Asst. Prof. Dr. Idtisak Paopo**

Department of Chemical Engineering, Faculty of Engineering, Ubon Ratchathani University, Thailand

**Co-Chair :** **Assoc. Prof. Dr. Duangkanok Tanangteerapong**

Department of Chemical Engineering, Faculty of Engineering, Khon Kaen University, Thailand

Time	Abstract Code	Title	Presenter
10:30 – 10:45	TIChe-AM-14	Molecular insights into cationic surfactant adsorption on Fe(110): A combined MD and DFT study for corrosion inhibition	Mr. Sitthikiat Boonchoo Chulalongkorn University, Thailand
10:45 – 11:00	TIChe-AM-19	Effects of oxygen, nitrogen, and sulfur doped hard carbons derived from longan seed as anode material for sodium ion batteries	Miss Sutida Tammanoi Suranaree University of Technology, Thailand
11:00 – 11:15	TIChe-AM-21	Development of a microencapsulation process of phase change materials from palm oil derivatives in large-scale melamine formaldehyde encapsulation process	Mr. Tawatchai Punhapol Chulalongkorn University, Thailand
11:30 – 11:45	TIChe-AM-24	Modification of recycled polyethylene terephthalate membrane by using graphene oxide to enhance antifouling properties for protein separation	Mr. Thanapol Meeiam King Mongkut's University of Technology Thonburi, Thailand
11:15 – 11:30	TIChe-AM-26	Effect of glycerol on xyloglucan-chitosan film preparation and its properties	Miss Kanjana Manamoongmongkol King Mongkut's Institute of Technology Ladkrabang, Thailand
11:45 – 12:00	Lunch		 Dusit 1, 2, 3 (5 <sup>th</sup> Floor)

## ORAL PRESENTATION PROGRAM

### The 34<sup>th</sup> Thai Institution of Chemical Engineering and Applied Chemistry International Conference (TIChe2025)

**Day 2 : Wednesday, May 21, 2025**

#### **Session 23 : Sustainable and Green Chemistry (SG)**

 **Dusit 11 (5<sup>th</sup> Floor)**  
 **10:30 – 11:45**

**Chair :** Prof. Dr. Tawatchai Charinpanitkul

Department of Chemical Engineering, Chulalongkorn University, Thailand

**Co-Chair :** Assoc. Prof. Dr. Arthit Neramittagapong

Department of Chemical Engineering, Faculty of Engineering, Khon Kaen University, Thailand

Time	Abstract Code	Title	Presenter
10:30 – 11:00	 <b>TIChe-IV-05</b>	Synthesis of carbonaceous nanomaterials from renewable agro-industrial waste	 <b>Prof. Dr. Tawatchai Charinpanitkul</b> Department of Chemical Engineering, Chulalongkorn University, Thailand
11:00 – 11:15	<b>TIChe-SG-15</b>	Chitosan-fibroin-based coating solution for prolonging the shelf life of bananas	<b>Miss Wannida Sawangarunporn</b> Burapha University, Thailand
11:15 – 11:30	<b>TIChe-SG-21</b>	Enhancement of CO <sub>2</sub> capture performance of alcohols on MEA-IL-based biphasic solvents	<b>Miss Rimping Prathumpitak</b> Chulalongkorn University, Thailand
11:30 – 11:45	<b>TIChe-SG-34</b>	In situ thermal solvent-free synthesis of zeolitic imidazolate frameworks with high crystallinity and porosity for effective adsorption and catalytic applications	<b>Dr. Somboon Chaemchuen</b> Mahidol University, Thailand
11:45 – 12:00	Lunch		 <b>Dusit 1, 2, 3 (5<sup>th</sup> Floor)</b>

#### **Session 24 : Process Engineering and Digital Technologies (PE)**

 **Dusit 12&13 (5<sup>th</sup> Floor)**  
 **10:30 – 11:45**

**Chair :** Assoc. Prof. Dr. Yaneeporn Patcharavorachot

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

**Co-Chair :** Asst. Prof. Dr. Channarong Puchongkawarin

Department of Chemical Engineering, Faculty of Engineering, Ubon Ratchathani University, Thailand

Time	Abstract Code	Title	Presenter
10:30 – 10:45	<b>TIChe-PE-10</b>	Computational fluid dynamics (CFD) analysis of cooling water temperature profiles in high temperature operation heat exchangers	<b>Ms. Suwapat Thiarananon</b> Chulalongkorn University, Thailand
10:45 – 11:00	<b>TIChe-PE-19</b>	Process simulation of lactic acid esterification in reactive distillation column: Effects of reboiler duty and alcohol	<b>Assoc. Prof. Dr. Anawat Sungpet</b> King Mongkut's University of Technology Thonburi, Thailand
11:00 – 11:15	<b>TIChe-PE-20</b>	Design and simulation of the coffee drying unit using solar thermal energy and ambient air circulation	<b>Mr. Rittichai Preungchana</b> King Mongkut's University of Technology Thonburi, Thailand
11:15 – 11:30	<b>TIChe-PE-23</b>	Machine learning-assisted multi-objective optimization of furfural production from lignocellulosic biomass hydrolysate	<b>Mr. Patchrapuek Pattaramanon</b> Silpakorn University, Thailand
11:30 – 11:45	<b>TIChe-PE-25</b>	Enhancing low-carbon hydrogen production from biomass gasification via machine-learning-aided multi-objective optimization with TOPSIS	<b>Mr. Kitti Kamolram</b> Kasetsart University, Thailand
11:45 – 12:00	Lunch		 <b>Dusit 1, 2, 3 (5<sup>th</sup> Floor)</b>

## ORAL PRESENTATION PROGRAM

### The 34<sup>th</sup> Thai Institution of Chemical Engineering and Applied Chemistry International Conference (TIChe2025)

**Day 2 : Wednesday, May 21, 2025**

#### **Session 25 : Advanced Materials and Nanotechnology (AM)**

 **Dusit 4 (5<sup>th</sup> Floor)**  
 **13:00 – 14:15**

**Chair :** **Assoc. Prof. Dr. Piyachat Wattanachai**  
Department of Chemical Engineering, Faculty of Engineering, Burapha University, Thailand

**Co-Chair :** **Dr. Natwat Srikhao**  
Department of Chemical Engineering, Faculty of Engineering, Ubon Ratchathani University, Thailand

Time	Abstract Code	Title	Presenter
13:00 – 13:15	TIChe-AM-08	Polybenzoxazine blended with modified natural rubber by graft copolymerization with 2-hydroxyethyl acrylate for shape memory applications	<b>Miss Chanokkan Buaklee</b> Chulalongkorn University, Thailand
13:15 – 13:30	TIChe-AM-22	Fabrication of polyphenylsulfone (PPSU) electro-spun nanofiltration membrane	<b>Miss Ornpreeya Pongpan</b> Chulalongkorn University, Thailand
13:30 – 13:45	TIChe-AM-25	Development of PVA-PNCL-Fe <sub>3</sub> O <sub>4</sub> composite nanofibrous for drug delivery in cancer treatment	<b>Mr. Sirawit Suknaisilp</b> King Mongkut's University of Technology Thonburi, Thailand
13:45 – 14:00	TIChe-AM-28	Surface modification of activated carbon from tamarind shell for tartrazine adsorption	<b>Miss Tinutda Phonlam</b> King Mongkut's Institute of Technology Ladkrabang, Thailand
14:00 – 14:15	TIChe-AM-36	Biocompatibility of hydrogel film blended jellyfish gelatin	<b>Miss Nongnapas Luecha</b> Burapha University, Thailand
14:15 – 14:30	Networking Break (Coffee Break)		 Refreshment Zone (5 <sup>th</sup> Floor)

#### **Session 26 : Biochemical and Environmental Engineering (BE)**

 **Dusit 5 (5<sup>th</sup> Floor)**  
 **13:00 – 14:15**

**Chair :** **Prof. Dr. Katsutoshi Nagaoka**  
Department of Chemical Systems Engineering, Nagoya University, Japan

**Co-Chair :** **Asst. Prof. Dr. Bundit Boonkhaob**  
Division of Mechanical Engineering, Faculty of Engineering, Nakhon Phanom University, Thailand

Time	Abstract Code	Title	Presenter
13:00 – 13:15	TIChe-BE-19	Reduction of acid usage in chitosan production process from white shrimp shell using electro-chemical activation	<b>Mr. Pat Thongphet</b> King Mongkut's University of Technology Thonburi, Thailand
13:15 – 13:30	TIChe-BE-26	Study of biomass productivity of phosphate-solubilizing bacteria using rice bran oil as an alternative media	<b>Miss Pim-orn Thongpanchang</b> King Mongkut's Institute of Technology Ladkrabang, Thailand
13:30 – 13:45	TIChe-BE-27	Removal of styrene and pyrene in a fixed bed adsorption column using rhamnolipid-modified alumina	<b>Miss Emma Asnachinda</b> Burapha University, Thailand
13:45 – 14:00	TIChe-BE-36	Valorization of pineapple leaf fiber industry waste: Optimization of alkali pretreatment for fermentable sugar production	<b>Dr. Khemmathin Lueangwattanapong</b> Kasetsart University, Thailand
14:00 – 14:15	TIChe-BE-37	Residue extraction on artificial knee surfaces using ultrasonic techniques	<b>Ms. Thitima Naovong</b> Suranaree University of Technology, Thailand
14:15 – 14:30	Networking Break (Coffee Break)		 Refreshment Zone (5 <sup>th</sup> Floor)

## ORAL PRESENTATION PROGRAM

### The 34<sup>th</sup> Thai Institution of Chemical Engineering and Applied Chemistry International Conference (TIChe2025)

**Day 2 : Wednesday, May 21, 2025**

#### **Session 27 : Catalysis and Reaction Engineering (CR)**

 **Dusit 6 (5<sup>th</sup> Floor)**  
 **13:00 – 14:15**

**Chair :** **Dr. Wasu Chaitree**

Department of Chemical Engineering, Faculty of Engineering and Industrial Technology, Silpakorn University, Thailand

**Co-Chair :** **Dr. Shawn C. Rood**

Department of Chemical Engineering, Faculty of Engineering, Khon Kaen University, Thailand

Time	Abstract Code	Title	Presenter
13:00 – 13:15	TIChe-CR-04	Electrooxidation of glycerol on electrolessly deposited carbon-supported CoNiBi electrocatalysts	<b>Dr. Wasu Chaitree</b> Silpakorn University, Thailand
13:15 – 13:30	TIChe-CR-22	Titania incorporated into magnetite mesoporous silica for removal of ciprofloxacin under UV radiation	<b>Miss Dwita Widyawati</b> Chulalongkorn University, Thailand
13:30 – 13:45	TIChe-CR-23	Electrochemical reduction and regeneration of carbamate	<b>Miss Nattiya Jumpadib</b> Chulalongkorn University, Thailand
13:45 – 14:00	TIChe-CR-26	Synthesis of biolubricant from waste cooking oil methyl ester by transesterification reaction via ethylene glycol	<b>Mr. Atipong Paikamnam</b> King Mongkut's Institute of Technology Ladkrabang, Thailand
14:00 – 14:15	TIChe-CR-31	Methane dry reforming of calcium carbonate from carbamate mineralization	<b>Miss Nattanan Watcharasawat</b> Chulalongkorn University, Thailand
14:15 – 14:30	Networking Break (Coffee Break)		 Refreshment Zone (5 <sup>th</sup> Floor)

#### **Session 28 : Advanced Materials and Nanotechnology (AM) Biochemical and Environmental Engineering (BE) Sustainable and Green Chemistry (SG)**

 **Dusit 7 (5<sup>th</sup> Floor)**  
 **13:00 – 14:15**

**Chair :** **Assoc. Prof. Dr. Tharathon Mongkhonsi**

Department of Chemical Engineering, Faculty of Engineering, Chulalongkorn University, Thailand

**Co-Chair :** **Assoc. Prof. Dr. Chanatip Samart**

Department of Chemistry, Faculty of Science and Technology, Thammasat University, Thailand

Time	Abstract Code	Title	Presenter
13:00 – 13:15	TIChe-AM-20	Development of shape memory UV curable 3D-print resin based on acrylated epoxidized soybean oil (AESO)	<b>Mr. Phuttiphong Wongsombun</b> Chulalongkorn University, Thailand
13:15 – 13:30	TIChe-AM-38	Utilization of lignin from agricultural waste for enhancing performance of natural rubber composite	<b>Miss Phatcharin Porat</b> King Mongkut's University of Technology Thonburi, Thailand
13:30 – 13:45	TIChe-BE-30	Numerical simulation of zinc ion migration in scaled-up electrokinetic remediation using COMSOL Multiphysics	<b>Dr. Anis Ayuni Suied</b> Universiti Tun Hussein Onn Malaysia, Malaysia
13:45 – 14:00	TIChe-SG-20	Mineralization in monoethanolamine solution with calcium chloride solution	<b>Mr. Ratipuk Chung-in</b> Chulalongkorn University, Thailand
14:00 – 14:15	TIChe-SG-28	Effect of co-solvents on the oxidative cleavage of oleic acid under ambient pressure	<b>Miss Chakreeya Santhadklang</b> Chulalongkorn University, Thailand
14:15 – 14:30	Networking Break (Coffee Break)		 Refreshment Zone (5 <sup>th</sup> Floor)

## ORAL PRESENTATION PROGRAM

### The 34<sup>th</sup> Thai Institution of Chemical Engineering and Applied Chemistry International Conference (TICHE2025)

**Day 2 : Wednesday, May 21, 2025**

#### **Session 30 : Sustainable and Green Chemistry (SG)**

 **Dusit 12&13 (5<sup>th</sup> Floor)**  
 **13:00 – 14:00**

**Chair :** **Assoc. Prof. Dr. Chaiyaput Kruehong**

Department of Chemical Engineering, Faculty of Engineering, Khon Kaen University, Thailand

**Co-Chair :** **Assoc. Prof. Dr. Pailin Ngaotrakanwiwat**

Department of Chemical Engineering, Faculty of Engineering, Burapha University, Thailand

Time	Abstract Code	Title	Presenter
13:00 – 13:15	TICHE-SG-30	Synthesis of monolaurin through glycerol esterification with lauric acid using 12-tungstophosphoric acid	<b>Miss Kanchisa Chandit</b> Rajamangala University of Technology Thanyaburi, Thailand
13:15 – 13:30	TICHE-SG-32	Development of internally circulating fluidized bed reactor performance for enhancing direct air CO <sub>2</sub> capture	<b>Ms. Munyapa Limahksohn</b> Chulalongkorn University, Thailand
13:30 – 13:45	TICHE-SG-38	Sustainable ethylene synthesis via photocatalytic conversion of succinic acid over metal-TiO <sub>2</sub> photocatalysts	<b>Miss Suttida Pomsri</b> Suranaree University of Technology, Thailand
13:45 – 14:00	TICHE-SG-40	Improvement of process layout and increase productivity of new model (Cargo Extender Process) by Kaizen	<b>Ms. Natthakritta Nokkhum</b> Walailak University, Thailand
14:00 – 14:30	Networking Break (Coffee Break)		 Refreshment Zone (5 <sup>th</sup> Floor)

**END OF ORAL SESSION**

## POSTER PRESENTATION PROGRAM

### The 34<sup>th</sup> Thai Institution of Chemical Engineering and Applied Chemistry International Conference (TIChe2025)

**Wednesday, May 21, 2025**

<b>Poster Session:</b> <b>Advanced Materials and Nanotechnology (AM)</b>		<b>Activity Hall (5<sup>th</sup> Floor)</b> <b>⌚ 13:00 – 15:00</b>
Abstract Code	Title	Presenter
TIChe-AM-17	Production of graphene from graphite via flash joule heating process	Mr. Siranut Sirathanutworakan Chulalongkorn University, Thailand
TIChe-AM-23	Plastic waste-derived porous carbon as precursors for supercapacitors	Asst. Prof. Dr. Panarat Rattanaphanee Suranaree University of Technology, Thailand
TIChe-AM-27	The development of an electrochemical sensor for silver ions and silver nanoparticle detection	Mr. Phurin Surachotimong Suranaree University of Technology, Thailand
TIChe-AM-30	Effect of essential oils in encapsulated chitosan nanoparticles on encapsulation efficiency and antimicrobial activity	Assoc. Prof. Dr. Paweena Prapainainar Kasetsart University, Thailand
TIChe-AM-31	Development of electrode production for supercapacitors from activated carbon derived from pomelo peels by steam activation	Asst. Prof. Dr. Wanida Koo-amornpattana Mahidol University, Thailand
TIChe-AM-32	Non-toxic quantum dots sensitized solar cells based on TiO <sub>2</sub> /AgInS <sub>2</sub>	Miss Atcharaporn Botalo Mahidol University, Thailand
TIChe-AM-33	Structural transformation of bismuth titanate synthesized via the solvothermal method for wastewater application: Effect of temperature synthesis	Mr. Nattapon Banditsean Khon Kaen University, Thailand
TIChe-AM-37	Influence of reaction parameters on the exsolution of Ni-Ru bimetallic alloy in GEO-inspired perovskite oxide	Dr. Somchate Wasantwisut Mahidol University, Thailand

<b>Poster Session:</b> <b>Biochemical and Environmental Engineering (BE)</b>		<b>Activity Hall (5<sup>th</sup> Floor)</b> <b>⌚ 13:00 – 15:00</b>
Abstract Code	Title	Presenter
TIChe-BE-17	Enhanced extraction of bioactive compounds from aloe vera leaf skin using natural deep eutectic solvents	Miss Sopita Chanmee Chulalongkorn University, Thailand
TIChe-BE-18	Comparative characterization of microplastics from conventional wastewater treatment plants between inland and island of tourism area in Thailand	Ms. Charintorn Molee Climate Change and Environmental Research Center, Thailand
TIChe-BE-21	Pressure vessel for ethanol extraction of mitragynine from Kratom leaves	Assoc. Prof. Dr. Ampai Chanachai King Mongkut's University of Technology Thonburi, Thailand
TIChe-BE-24	Hydrogel-forming microneedles with epigallocatechin gallate and 4-(hydroxymethyl)-phenylboronic acid for antibacterial wound healing and drug release	Miss Naritsara Suwatsrisakun Khon Kaen University, Thailand
TIChe-BE-29	Developing a deep neural network model to predict PM2.5 concentration based on key factors affecting air pollution in Bangkok	Mr. Tanawut Poothong Kasetsart University, Thailand

Abstract Code	Title	Presenter
TIChe-BE-31	Enhanced air filtration with antibacterial cellulose composites: A sustainable solution for hospital environments	Miss Sopanat Sawatdee Mahidol University, Thailand
TIChe-BE-32	Sustainable synthesis of nanocellulose via enzymatic and mechanical treatments	Miss Cholaphan Deelepojananan Mahidol University, Thailand
TIChe-BE-35	Electrochemical sensors for residual organophosphate pesticide detection from pineapple leaf derived cellulose and nickel-containing composite	Asst. Prof. Dr. Supacharee Roddecha Kasetsart University, Thailand

<b>Poster Session:</b> <b>Catalysis and Reaction Engineering (CR)</b>		<b>Activity Hall (5<sup>th</sup> Floor)</b> <b>13:00 – 15:00</b>
Abstract Code	Title	Presenter
TIChe-CR-05	Valorization of biodiesel plant-derived glycerol for 1-propanol synthesis over zeolite-supported iridium and rhenium oxides	Miss Chanoknun Kalvibool Chulalongkorn University, Thailand
TIChe-CR-06	CO <sub>2</sub> methanation using nickel-based catalysts over alumina-ceria support prepared by sol-gel method	Miss Jitsinee Leetrakul Chulalongkorn University, Thailand
TIChe-CR-07	Kaolin-based geopolymers as an alternative low-cost adsorbent for biodiesel purification	Mr. Aphirak Tharanuvet Chulalongkorn University, Thailand
TIChe-CR-10	Effect of activation method on biochar supported nickel catalysts performance in steam reforming of biomass-derived tar	Miss Nutchaya Jirundorn Chulalongkorn University, Thailand
TIChe-CR-14	Optimization of biodiesel production from waste cooking oil via transesterification using calcium oxide catalyst	Assoc. Prof. Dr. Pornsawan Assawasaengrat King Mongkut's Institute of Technology Ladkrabang, Thailand
TIChe-CR-15	Effect of catalyst bed configuration on temperature profile and reactor performance for Fischer-Tropsch synthesis: A computational fluid dynamic simulation	Mr. Natthasit Khawyen Chulalongkorn University, Thailand
TIChe-CR-18	Study on epoxidation of vegetable oil using different acidic ion-exchange resins	Mr. Patiphan Palachote Kasetsart University, Thailand
TIChe-CR-19	Photocatalytic activity of N, S-CQDs/TiO <sub>2</sub> composites for the degradation of methylene blue (MB) under visible-light irradiation	Miss Thanyapak Akkharaamnuay Chulalongkorn University, Thailand
TIChe-CR-24	Loading iron/manganese/zinc/copper oxide onto TiO <sub>2</sub> for vanillin production from photoconversion of lignin	Asst. Prof. Dr. Mutsee Termtanun Silpakorn University, Thailand
TIChe-CR-25	Utilization of biomass from palm oil industry for monoglycerides production	Mr. Suttipong Rangauthok Chulalongkorn University, Thailand
TIChe-CR-27	Low-temperature methanol synthesis via ethanol-assisted approach over Cu/ZnO/Al <sub>2</sub> O <sub>3</sub> in fixed-bed reactor	Miss Panisara Kampaeng Chulalongkorn University, Thailand
TIChe-CR-34	Thermal oxidative reaction of HMF to a bio-based monomer: 2,5 Furandicarboxylic Acid (FDCA)	Assoc. Prof. Dr. Soipatta Soisuwan Burapha University, Thailand

<b>Poster Session: Energy and Fuels (EF)</b>		<b>Activity Hall (5<sup>th</sup> Floor) 13:00 – 15:00</b>
Abstract Code	Title	Presenter
TIChe-EF-07	Impact of trihexyl phosphate and dimethyl sulfoxide on LiPF <sub>6</sub> -based electrolytes: A molecular dynamics study	Miss Nudchakorn Supakamnerd Chulalongkorn University, Thailand
TIChe-EF-08	Co-solvent engineering of deep eutectic electrolytes: A molecular dynamics study	Mr. Pongpon Pipattanachaiyanan Chulalongkorn University, Thailand
TIChe-EF-11	Regeneration by electrodialysis enhanced with ion-exchange resin of spent MEA solution after CO <sub>2</sub> capture and mineralization by CaSO <sub>4</sub> addition	Miss Nathaporn Kenbubpha Chulalongkorn University, Thailand
TIChe-EF-12	The effect of methanol and ethanol-based solvent on enhancing CO <sub>2</sub> absorption efficiency and reducing energy consumption in the desorption process	Miss Sasiphan Deenan Silpakorn University, Thailand
TIChe-EF-16	Cultivation of green microalga <i>Scenedesmus</i> Sp. under semi-continuous condition	Asst. Prof. Dr. Idtisak Paopo Ubon Ratchathani University, Thailand

<b>Poster Session: Industrial Applications and Case Studies (IA)</b>		<b>Activity Hall (5<sup>th</sup> Floor) 13:00 – 15:00</b>
Abstract Code	Title	Presenter
TIChe-IA-02	Sustainable manufacturing of polycaprolactone films: Effects of processing conditions on film quality	Miss Kitthanya Ritthichai Chulalongkorn University, Thailand

<b>Poster Session: Process Engineering and Digital Technologies (PE)</b>		<b>Activity Hall (5<sup>th</sup> Floor) 13:00 – 15:00</b>
Abstract Code	Title	Presenter
TIChe-PE-02	Analysis of carbon dioxide trapping efficiency in saline aquifer by machine learning	Mr. Jakkai Jitkoolsamphan Chulalongkorn University, Thailand
TIChe-PE-04	Techno-economic analysis of sequential process to valorization of rambutan seed waste by supercritical CO <sub>2</sub> -ethanol and subcritical water extraction	Mr. Kassama Utthachat Chulalongkorn University, Thailand
TIChe-PE-05	Techno-economic analysis of crude peptides production from defective coffee beans	Mr. Chatraphong Nakphadungsuk Chulalongkorn University, Thailand
TIChe-PE-14	Application of computational fluid dynamics for industrial liquid-liquid mixing tank design	Mr. Patiphon Klongyut Chulalongkorn University, Thailand
TIChe-PE-21	Production of wood-plastic composite from non-metallic powders recovered from printed circuit board (PCB) waste	Assoc. Prof. Dr. Ampai Chanachai King Mongkut's University of Technology Thonburi, Thailand
TIChe-PE-22	PID controller tuning using genetic algorithms incorporated with dynamic simulation	Asst. Prof. Dr. Veerayut Lersbamrungsuk Silpakorn University, Thailand
TIChe-PE-24	Optimization of solketal reaction conditions for maximum yield using Response Surface Methodology (RSM) in MATLAB®	Mr. Sittinut Damnoensawat Chulalongkorn University, Thailand

<b>Poster Session: Sustainable and Green Chemistry (SG)</b>		<b>Activity Hall (5<sup>th</sup> Floor) 13:00 – 15:00</b>
Abstract Code	Title	Presenter
TIChe-SG-04	Design and development of a sustainable ethylene glycol production process via electrochemical CO <sub>2</sub> reduction	Miss Nichapat Leelalertwong Chulalongkorn University, Thailand
TIChe-SG-05	Catalytic carbon dioxide desorption from monoethanolamine solvent in fluidized stripper	Miss Sathida Doungsri Chulalongkorn University, Thailand
TIChe-SG-09	Syngas production from biomass/plastic waste in supercritical water gasification: Impact of CO <sub>2</sub> co-reaction and operating conditions	Assoc. Prof. Dr. Yaneeporn Patcharavorachot King Mongkut's Institute of Technology Ladkrabang, Thailand
TIChe-SG-11	Mechanical properties, physical characteristics, and biodegradation of rigid polyurethane foam synthesized from castor and palm oil-based polyols	Assoc. Prof. Dr. Panchan Sricharoon King Mongkut's University of Technology Thonburi, Thailand
TIChe-SG-12	Evaluating the effectiveness of antioxidants in palm oil-based bio-grease	Ms. Eumporn Buarod National Science and Technology Development Agency, Thailand
TIChe-SG-14	Study of calcium carbonate precipitation from CO <sub>2</sub> -rich amine-based solution	Miss Kannika Jongauksorn Chulalongkorn University, Thailand
TIChe-SG-16	Synthesis of rigid polyurethane foam from modified castor oil and sugar to enhance thermal insulating properties and degradability	Assoc. Prof. Dr. Panchan Sricharoon King Mongkut's University of Technology Thonburi, Thailand
TIChe-SG-22	Accelerated aging testing of three types of transformer oils in 1 phase distribution transformer	Mr. Bowornchai Chareonteraboon National Science and Technology Development Agency, Thailand
TIChe-SG-25	Potential desalination using EDTA modified MOF	Mr. Nattawut Krasaesueb Climate Change and Environmental Research Center, Thailand
TIChe-SG-26	Performance assessment of monoethanolamine and N-methyl-4-piperidinol blended solvent for enhancing physical properties, kinetics, absorption capacity, and regeneration heat duty	Miss Rattanaporn Apaiyakul Chulalongkorn University, Thailand
TIChe-SG-27	Synthesis and scale-up of MOF using PET-derived terephthalic acid	Dr. Natthawan Prasongthum Khon Kaen University, Thailand
TIChe-SG-29	Demonstration of zeolite A produced from coal ash applied to CO <sub>2</sub> capture process for amine regeneration approach	Miss Punyaporn Khamdaeng Thailand Institute of Scientific and Technological Research, Thailand
TIChe-SG-31	Life cycle assessment of CO <sub>2</sub> -to-methanol: A comparative study of conventional and alcohol-assisted hydrogenation processes	Mr. Naphat Chansonthi Kasetsart University, Thailand
TIChe-SG-33	Valorization of mung bean seed coat through recovery of bioactive compounds with pharmacological properties using percolation extraction	Mr. Suthiwat Srinuch Kasetsart University, Thailand
TIChe-SG-35	Utilization of fusel oil as a sustainable bio-based lighter fluid	Dr. Parncheewa Udomsap National Science and Technology Development Agency, Thailand

END OF POSTER SESSION

**TIChe SENIOR PROJECT 2025 PROGRAM**  
**The 34<sup>th</sup> Thai Institution of Chemical Engineering and  
Applied Chemistry International Conference (TIChe2025)**

**Tuesday, May 20, 2025**

<b>Session : TIChe Senior Project Contest 2025  (Applied Research)</b>		<b>Activity Hall (5<sup>th</sup> Floor)</b> <span style="color: #0070C0;">🕒</span> <b>09:00 – 16:30</b>
<b>Project Code</b>	<b>Title</b>	<b>Contestant</b>
<b>TIChe-SE-A01  CU</b>	Clean water production from seawater via CQDs-PVDF photothermal membrane distillation	(1) Supawadee Worapruekjaro (2) Pajchimbud Aomsin (3) Prof. Dr. Joongjai Panpranot (4) Asst. Prof. Dr. Chalida Klaysom Department of Chemical Engineering Chulalongkorn University
<b>TIChe-SE-A02  PSU</b>	Co-pelletizing solid fuel from sewage sludge-biomass and air pollutant emission analysis	(1) Walisa Temrat (2) Sutthida Sangprom (3) Assoc. Prof. Dr. Racha Dejchanchaiwong Department of Chemical Engineering Prince of Songkla University
<b>TIChe-SE-A03  CU</b>	Computational fluid dynamics of cyclone reactor for carbon dioxide capture	(1) Naphat Pattanapaisarnwong (2) Nawaphon Piriyakulthon (3) Prof. Dr. Benjapon Chalermsinsuwan Department of Chemical Technology Chulalongkorn University
<b>TIChe-SE-A04  MU</b>	Development of an affordable PMMA-based organ-on-chip platform for preclinical research	(1) Kawinthida Pongphai (2) Chalunda Sornwattana (3) Dr. Soontorn Tuntithavornwat Department of Chemical Engineering Mahidol University
<b>TIChe-SE-A05  KU</b>	Enhancing non-catalytic biomass pyrolysis yield predictions using machine learning and data augmentation	(1) Anchalee Chaichanavongsaroj (2) Dasakorn Rungrampan (3) Asst. Prof. Dr. Phantisa Limleamthong Department of Chemical Engineering Kasetsart University
<b>TIChe-SE-A06  KMUTNB</b>	Green 3D-printed lignin composites with essential oils for next-generation medical applications	(1) Charinrat Noikoon (2) Boonyanuch Engkawong (3) Anchisa Thamrongkulipiphat (4) Dr. Wanwitoo Wanmolee (5) Dr. Bongkot Hararak Department of Chemical Engineering King Mongku's University of Technology North Bangkok
<b>TIChe-SE-A07  KMUTT</b>	Improving CHO-K1 cell performance: Optimization of screened supplements in serum-free conditions	(1) Napaporn Tamiyajol (2) Ploychompoo Sresakulwiwat (3) Asst. Prof. Dr. Kantharakorn Macharoen (4) Dr. Pattaraporn Sasivimolphan Department of Chemical Engineering King Mongku's University of Technology Thonburi
<b>TIChe-SE-A08  KMITL</b>	Influence of cobalt volatilization on LSM cathode of solid oxide fuel cell	(1) Akkarawich Laumkha (2) Penpitcha Achachotipong (3) Assoc. Prof. Dr. Pathranit Wongpromrat Department of Chemical Engineering King Mongku's Institute of Technology Ladkrabang

Project Code	Title	Contestant
<b>TIChe-SE-A09 KKU</b>	Optimization of lignin conversion to vanillin over Ni-Cu/Al <sub>2</sub> O <sub>3</sub> using Box-Behnken design	(1) Kitsanan Jarirat (2) Siriyakorn Theprat (3) Assoc. Prof. Dr. Arith Neramittagapong Department of Chemical Engineering Khon Kaen University
<b>TIChe-SE-A10 SUT</b>	Porous carbon from plastic waste for supercapacitor application	(1) Punnapat Songsranoj (2) Sasitorn Chairanit (3) Asst. Prof. Dr. Panarat Rattanaphanee School of Chemical Engineering Suranaree University of Technology
<b>TIChe-SE-A11 TU</b>	Sorting machine (SM-02) for separate LIBs from general battery wastes	(1) Ichaya Sae-ung (2) Rungtibet Anaphol (3) Assoc. Prof. Dr. Pradya Prempraneerach (4) Prof. Dr. Nurak Grisdanurak Department of Chemical Engineering Thammasat University
<b>TIChe-SE-A12 SU</b>	The carbon footprint evaluation of the bio-methanol production process from biogas	(1) Kanitha Sornprasit (2) Napaporn Thongsookmak (3) Asst. Prof. Dr. Weerawat Pathaveekongka Department of Chemical Engineering Silpakorn University

Session : TIChe Senior Project Contest 2025 (Basic Research)		📍 Activity Hall (5 <sup>th</sup> Floor) ⌚ 09:00 – 16:30
Project Code	Title	Contestant
<b>TIChe-SE-B01 KKU</b>	Conductive hydrogel tailored by metal phenolic network for strain sensing and self-powered devices	(1) Pimchaya Trisong (2) Premmika Pimphatum (3) Assoc. Prof. Dr. Pornnapa Kasemsiri Department of Chemical Engineering Khon Kaen University
<b>TIChe-SE-B02 KMUTT</b>	Design and fabrication of workshop-ready filtration equipment for chemical engineering education	(1) Sombat Srisuklorm (2) Kairawin Burapongbundit (3) Asadawut Naicharoen (4) Dr. Kiattinatapon Juengcharoenpon (5) Asst. Prof. Dr. Kantharakorn Macharoen Department of Chemical Engineering King Mongku's University of Technology Thonburi
<b>TIChe-SE-B03 KU</b>	Ethanol conversion to light olefins over ZnZrO <sub>x</sub> /beta zeolite composite: A selective route towards propylene	(1) Chaiyakrit Phattarawansopon (2) Nattakit Siriwiutsar (3) Dr. Thidarat Imyen Department of Chemical Engineering Kasetsart University
<b>TIChe-SE-B04 PSU</b>	Fabrication of biomaterial scaffolds for bone tissue engineering	(1) Pansak Thitawiriya (2) Sakkarin Pingsiri (3) Assoc. Prof. Dr. Chayanoot Sangwichien Department of Chemical Engineering Prince of Songkla University
<b>TIChe-SE-B05 CU</b>	Influence of preparation methods on properties of perovskite catalyst precursor and catalyst for methane reforming	(1) Pisitsan Uthaisiritanon (2) Saripa Suchitta (3) Asst. Prof. Dr. Merika Chanthanumataporn Department of Chemical Engineering Chulalongkorn University
<b>TIChe-SE-B06 MU</b>	Machine learning model for CO <sub>2</sub> capture on metal-organic frameworks	(1) Kanyakorn Rittawee (2) Prumon Nagasara (3) Asst. Prof. Dr. Poomiwat Phadungbut Department of Chemical Engineering Mahidol University

Project Code	Title	Contestant
<b>TIChe-SE-B07 SU</b>	Machine learning-driven multi-objective optimization of biomass-based methanol and power production with carbon capture and organic Rankine cycle integration	(1) Ingon Sondit (2) Siriwimon Boonprasit (3) Asst. Prof. Dr. Nutchapon Chotikrai Department of Chemical Engineering Silpakorn University
<b>TIChe-SE-B08 TU</b>	Pretreatment of medium-sized lithium-ion battery (LIBs) waste prior to the disposal	(1) Arisa Saowakhon (2) Nantakran Wangsamaann (3) Asst. Prof. Dr. Woraratana Pataraprakorn (4) Prof. Dr. Nurak Grisdanurak Department of Chemical Engineering Thammasat University
<b>TIChe-SE-B09 KMITL</b>	Process simulation of power generation from co-gasification, solid oxide fuel cell, gas turbine and waste heat recovery technologies	(1) Nuttapat Phuengjeen (2) Assoc. Prof. Dr. Yaneeporn Pathcharavoraachot Department of Chemical Engineering King Mongkut's Institute of Technology Ladkrabang
<b>TIChe-SE-B10 SUT</b>	Recycled ethylene from the degradation of plastic waste using different methods of electrolysis and photocatalysis process	(1) Pawanrat Nanklang (2) Dr. Supunnee Junpirom School of Chemical Engineering Suranaree University of Technology
<b>TIChe-SE-B11 UBU</b>	Single-step chemical vapor deposition of carbon nanotubes: Synthesis optimization using camphor and ferrocene-loaded bamboo biochar	(1) Yanutchara Wichiantawatchai (2) Dr. Suparat Sasrimuang (3) Asst. Prof. Dr. Channarong Puchongkawarin Department of Chemical Engineering Ubon Ratchathani University
<b>TIChe-SE-B12 CU</b>	Synthesis of MnO <sub>2</sub> from recycle of spent primary batteries to use in rechargeable Zn-ion batterie	(1) Juthamas Vechasit (2) Piyakorn Aranyanarth (3) Assoc. Prof. Dr. Nisit Tantavichet Department of Chemical Technology Chulalongkorn University

**END OF TIChe SENIOR PROJECT CONTEST 2025 SESSION**

**TIChe HIGH SCHOOL PROJECT 2025 PROGRAM**  
**The 34<sup>th</sup> Thai Institution of Chemical Engineering and  
Applied Chemistry International Conference (TIChe2025)**

**Wednesday, May 21, 2025**

<b>Session : TIChe High School Project Contest 2025  (Poster Competition)</b>		<b>Activity Hall (5<sup>th</sup> Floor)</b> <span style="color: #0070C0;">🕒</span> <b>09:00 – 12:00</b>
<b>Project Code</b>	<b>Title</b>	<b>Contestant</b>
TIChe-HS-01	Development of a hydrogel patch from pomelo peel for inhibiting <i>Staphylococcus aureus</i> infection found in diabetic foot ulcers	(1) Nisulaimarn Sideh (2) Intouch Wareekham (3) Chareef Surinrach Princess Chulabhorn Science High School Satun Satun
TIChe-HS-02	Sustainable concrete pavers using colored PET waste as sand substitute	(1) Thaksaon Srichompoor (2) Phatcharakan Jirottearrayatanakun (3) Navarat Sodesiri Sisaketwittayalai School, Sisaket
TIChe-HS-03	Carbon dots from coffee grounds	(1) Watcharaboon Nakaok (2) Intira Kaewsaai (3) Kodchakorn Lamsombat (4) Egkachai Srisupap Kanlayanawat School, Khon Kaen
TIChe-HS-04	Extraction and refinement of microcrystalline cellulose from rice straw via physical and chemical modifications	(1) Kotchamon Pittayarat (2) Auachatchaya Channamsin (3) Pichayut Chaitong (4) Usa Jeenjenkit Mahidol Wittayanusorn School Nakhon Pathom
TIChe-HS-05	Development of electrodes using activated carbon from coffee grounds	(1) Phemphat Pimhanam (2) Thanaphon Dabao (3) Jiratchaya Ngamprom (4) Kodchakorn Lamsombat (5) Egkachai Srisupap Kanlayanawat School, Khon Kaen
TIChe-HS-06	Effects of mulberry leaf extract on molting acceleration in black crabs	(1) Pitchapa Distapongpakdee (2) Sunisa Malee (3) Tihanee Arlee (4) Chareef Surinrach (5) Karun Thongprajukkaew Princess Chulabhorn Science High School Satun Satun
TIChe-HS-07	The comparison of antioxidant activities in the leaves, stems, roots, and fruits of <i>Morus alba</i>	(1) Parwonrat Prommi (2) Pornchanok Sudchit (3) Tawanrat Ngoenyuang (4) Benchaya Thanathiratham Takpittayakhom School, Tak
TIChe-HS-08	Fruit-wrapping film for delaying spoilage using carbon dots derived from eggshells	(1) Thanyathon Phromsuwan (2) Naruechart Supamala (3) Chareef Surinrach Princess Chulabhorn Science High School Satun Satun
TIChe-HS-09	The study and development of activated white charcoal with magnetic properties for absorbing heavy metals from industrial wastewater	(1) Sirawit Subongkot Mahidol Wittayanusorn School Nakhon Pathom
TIChe-HS-10	Electrolytic precipitation in wastewater	(1) Phongsaran Promsud (2) Ladapa Yingmuang (3) Naphassakorn Fongfung Phichai Rattanakhan School, Ranong

Project Code	Title	Contestant
TIChe-HS-11	Chemiresistive metal oxide semiconductor-based breath acetone detection coupled with deep learning for non-invasive diabetes monitoring	(1) Kongphop Panjatarakul (2) Narapat Sinsuebpol (3) Ratchata Chinnatsirikul (4) Khriangsak Nilprasith Ayutthaya Witthayalai School Phra Nakhon Si Ayutthaya
TIChe-HS-12	Anti-inflammatory gel patch for insect bites using eugenol and chavicol extracted from betel leaves	(1) Apichaya Decharan (2) Sataporn Sriyathee (3) Soonlaya Saman Princess Chulabhorn Science High School Satun Satun
TIChe-HS-13	Gel for inhibiting <i>Staphylococcus aureus</i> to reduce skin infections from turmeric extract	(1) Ratchanon Adisakpirom (2) Napat Promkaew (3) Bussarin Jitseng Princess Chulabhorn Science High School Satun Satun
TIChe-HS-14	A hydrogel sheet formulated using Noni ( <i>Morinda citrifolia L.</i> ) leaf extract for muscle pain relief	(1) Hassuna Kepan (2) Husvanee Bonoh (3) Bussarin Jitseng Princess Chulabhorn Science High School Satun Satun
TIChe-HS-15	Effects of cold plasma on citronella essential oil extract in controlling of rice weevils ( <i>Sitophilus oryzae</i> )	(1) Apisara Kanchana (2) Nutupsorn Chetananon (3) Siraphat Wongkhankaew (4) Supanut Pattanasarin (5) Kannika Pongkan Piriyalai School Phrae, Phrae
TIChe-HS-16	Development of soybean seed coating to increase germination rate and seedling growth efficiency	(1) Chalisa Surawong (2) Chutrakoon Kulabkhao (3) Nunticha Pekganjai (4) Supanut Pattanasarin (5) Kannika Pongkan Piriyalai School Phrae, Phrae

**END OF TICHE HIGH SCHOOL PROJECT CONTEST 2025 SESSION**

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Organized by  
Department of Chemical Engineering  
Khon Kaen University



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