



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



PROGRAM BOOK

MAY 20-21, 2025
PATTAYA, THAILAND



Khon Kaen University
มหาวิทยาลัยขอนแก่น



OVERALL PROGRAM

The 34th 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

Tuesday, May 20, 2025			Wednesday, May 21, 2025				
Time	Program (Parallel)		Time	Program (Parallel)			
09:00 – 10:30	Opening Ceremony Join with TNChE Asia 2025	TIChE Senior Project Contest 2025 (Poster Competition)	09:00 – 12:00	TIChE2025 Oral Presentation (Session 13-24)	TIChE High School Project Contest 2025 (Poster Competition)		
10:30 – 12:00	Plenary Lecture Join with TNChE Asia 2025						
12:00 – 13:00	Lunch		12:00 – 13:00	Lunch			
13:00 – 16:30	TIChE2025 Oral Presentation (Session 1-12)	TIChE Senior Project Contest 2025 (Final Pitching)	13:00 – 14:30	TIChE2025 Oral Presentation (Session 25-28, 30)	TIChE2025 Poster Presentation	Meeting of Head of Departments	
			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 nd 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	Award and Closing Ceremony			

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 5th floor of the Dusit Thani Pattaya Hotel. These services are separate from those provided for TNChE Asia 2025, which are located on the 4th floor.

INFORMATION FOR PRESENTERS

The 34th 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.

TIChE-IV-xx	Invited Speaker
TIChE-AM-xx	Presenter in Advanced Materials and Nanotechnology (AM) Session
TIChE-BE-xx	Presenter in Biochemical and Environmental Engineering (BE) Session
TIChE-CR-xx	Presenter in Catalysis and Reaction Engineering (CR) Session
TIChE-EF-xx	Presenter in Energy and Fuels (EF) Session
TIChE-SG-xx	Presenter in Sustainable and Green Chemistry (SG) Session
TIChE-IA-xx	Presenter in Industrial Applications and Case Studies (IA) Session
TIChE-PE-xx	Presenter in Process Engineering and Digital Technologies (PE) Session
TIChE-SE-Axx	TIChE Senior Project Contest 2025 in Applied Research Category
TIChE-SE-Bxx	TIChE Senior Project Contest 2025 in Basic Research Category
TIChE-HS-xx	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, 5th 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, 5th 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 34th Thai Institution of Chemical Engineering and Applied Chemistry International Conference (TIChE2025)

Day 1 : May 20, 2025

08:00 – 09:00	Registration				📍 Registration Area (5 th Floor)	
09:00 – 12:00	TIChE Senior Project Contest 2025 (Parallel) Opening Ceremony & Poster Competition				📍 Dusit 11 & Activity Hall (5 th Floor)	
09:00 – 11:00	Opening Ceremony (Join with TNChe Asia 2025) MC: Asst. Prof. Dr. Pornchai Bumroongsri				📍 Napalai D, E (4 th Floor)	
09:00 – 10:30	Welcome Speech by Mr. Surachate Chalothorn, President of the Thai Institute of Chemical Engineering and Applied Chemistry (TIChe) Opening Ceremony 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 th Floor)	
11:00 – 12:00	Plenary Session (Join with TNChe Asia 2025) Session Chair: Assoc. Prof. Dr. Thumrongrut Mungcharoen				📍 Napalai D, E (4 th Floor)	
11:00 – 11:20	Plenary Lecture I	Global Climate Technology and Technology Transfer Mechanism Dr. Surachai Sathitkunarat 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	Plenary Lecture II	Key Factors for Establishing Green Ammonia Industry: Aiming CO ₂ Free Fuel World Emeritus Prof. Dr. Ken-ichi Aika Green Ammonia Research Center, National Institute of Technology (KOSEN), Numazu College, Japan				
11:40 – 12:00	Plenary Lecture III	Embracing Uncertainty: Unleashing Value in the Evolving Industry Landscape Mr. Kshitij Dua & Mr. Eren Cetinkaya Director, Legal Operations at HashiCorp & Partner at McKinsey & Company				
12:00 – 13:00	Lunch				📍 Dusit 1, 2, 3 (5 th Floor)	
13:00 – 16:30	TIChe Senior Project Contest 2025 (Parallel) Final Pitching & Award Ceremony				📍 Dusit 11 & Activity Hall (5 th Floor)	
13:00 – 14:15	TIChe2025 Oral Presentation (Parallel)				📍 Dusit 4, 5, 6, 7, 12, 13 (5 th 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 th Floor)	

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14:30 – 15:45	TICHe2025 Oral Presentation (Parallel)				📍 Dusit 4, 5, 6, 7, 12, 13 (5 th 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	Invited Speaker	TICHe-BE-04	Invited Speaker	TICHe-EF-02	TICHe-SG-02	TICHe-PE-06
14:45 – 15:00	TICHe-IV-02	TICHe-BE-05	TICHe-IV-06	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	Networking & Happy Hour at Exhibition Zone Gathering (Join with TNChE Asia 2025)				📍 Napalai A, B, C, D, E (4 th Floor)	
END OF DAY 1						

TECHNICAL PROGRAM
**The 34th Thai Institution of Chemical Engineering and
Applied Chemistry International Conference (TIChE2025)**
Day 2 : May 21, 2025

08:00 – 09:00	Registration					📍 Registration Area (5 th Floor)
09:00 – 12:00	TIChE High School Project Contest 2025 (Parallel) Opening Ceremony, Poster Competition & Award Ceremony					📍 Activity Hall (5 th Floor)
09:00 – 10:15	TIChE2025 Oral Presentation (Parallel)					📍 Dusit 4, 5, 6, 7, 11, 12 & 13 (5 th 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	zoom TIChE-AM-09	TIChE-BE-06	Invited Speaker	TIChE-EF-15	TIChE-SG-01	Invited Speaker
09:15 – 09:30	zoom TIChE-CR-30	TIChE-BE-09	TIChE-IV-08	TIChE-EF-14	TIChE-SG-18	TIChE-IV-04
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 th Floor)

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10:30 – 11:45	TIChE2025 Oral Presentation (Parallel)				Dusit 4, 5, 6, 7, 11, 12&13 (5 th 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	Lunch				Dusit 1, 2, 3 (5 th Floor)	
13:00 – 15:00	TIChE2025 Poster Presentation (Parallel)				Activity Hall (5 th Floor)	
13:00 – 14:15	TIChE2025 Oral Presentation (Parallel) & Meeting				Dusit 4, 5, 6, 7, 11, 12&13 (5 th 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		No Event
14:15 – 14:30	Networking Break (Coffee Break)				Refreshment Zone (5 th Floor)	

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14:30 – 16:15	TIChE Plant Design Competition 2025, Award & Meeting				📍 Dusit 11, 12&13 (5 th 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	No Event	No Event	No Event	No Event	Meeting on Process Simulation Software for Academic Use	TIChE Plant Design Competition 2025
16:00 – 16:15					No Event	Award Ceremony for the 2 nd TIChE-AVEVA Simulation Contest 2025
16:15 – 17:00						Award and Closing Ceremony
END OF DAY 2						
END OF TIChE2025 CONFERENCE						

ORAL PRESENTATION PROGRAM

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

Day 1 : Tuesday, May 20, 2025

Session 1 : Advanced Materials and Nanotechnology (AM)

📍 Dusit 4 (5th Floor)
🕒 13:00 – 14:15

Chair : Assoc. Prof. Dr. Lek Wantha

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

Co-Chair : Assoc. Prof. Dr. Tharathon Mongkhonsi

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

Time	Abstract Code	Title	Presenter
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	Mr. Chaisawat Rattanadon 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	Mr. Kongphoom Khumsupa 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>	Asst. Prof. Dr. Cherdphong Seedao 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	Mr. Weerawit Luewanichwong Chulalongkorn University, Thailand
14:00 – 14:15	TIChE-AM-34	Development of self-adhesive biopolymer hydrogel for strain sensors crosslinked with tannic acid	Mr. Noppanan Putdon Khon Kaen University, Thailand
14:15 – 14:30	Networking Break (Coffee Break)		📍 Refreshment Zone (5 th Floor)

Session 2 : Biochemical and Environmental Engineering (BE)

📍 Dusit 5 (5th Floor)
🕒 13:00 – 14:15

Chair : Prof. Dr. Manop Charoenchaitrakool

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

Co-Chair : Asst. Prof. Dr. Xiaohong Tan

Department of Chemistry, Bowling Green State University, United States

Time	Abstract Code	Title	Presenter
13:00 – 13:15	TIChE-BE-01	Comparative study of methylene blue adsorption using calcium oxide derived from chicken eggshells and calcium oxide standard	Miss Pinchaphat Poka Miss Woravarun Unkaew 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	Mr. Thanyakorn Sangoondee 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	Mr. Manutchai Eiamniyom Mahidol University, Thailand
13:45 – 14:00	TIChE-BE-20	Enhanced desalination through capacitive deionization: Synthesis and performance evaluation of rubberwood-derived activated carbon	Ms. Nannapat Kaewsaeenmaung Khon Kaen University, Thailand
14:00 – 14:15	TIChE-BE-28	Nutrient release from struvite-biochar composites prepared by co-precipitation	Mr. Wasu Jantapa Khon Kaen University, Thailand
14:15 – 14:30	Networking Break (Coffee Break)		📍 Refreshment Zone (5 th Floor)

ORAL PRESENTATION PROGRAM

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

Day 1 : Tuesday, May 20, 2025

Session 3 : Catalysis and Reaction Engineering (CR)			📍 Dusit 6 (5 th Floor) 🕒 13:00 – 14:15
Chair : Dr. Taketoshi Minato Institute for Molecular Science, National Institute of Natural Science, Japan Co-Chair : Assoc. Prof. Dr. Chaipayut Kruehong Department of Chemical Engineering, Faculty of Engineering, Khon Kaen University, Thailand			
Time	Abstract Code	Title	Presenter
13:00 – 13:30	Invited Speaker TIChE-IV-03	Reaction mechanisms in rechargeable batteries for next-generation energy technology	 Dr. Taketoshi Minato 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	Mr. Pongsaporn Poosri 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	Miss Wantana Chuakamhod Chulalongkorn University, Thailand
14:00 – 14:15	TIChE-CR-32	Fabrication of Fe-TiO ₂ loaded on mesoporous activated carbon and improved by Fe ₃ O ₄ for reusing on photocatalytic degradation of reactive red 120 under visible light irradiation	Mr. Jakkapat Saehkow Khon Kaen University, Thailand
14:15 – 14:30	Networking Break (Coffee Break)		📍 Refreshment Zone (5 th Floor)

Session 4 : Energy and Fuels (EF)			📍 Dusit 7 (5 th Floor) 🕒 13:00 – 14:15
Chair : Prof. Dr. Somkiat Ngamprasertsith Department of Chemical Technology, Faculty of Science, Chulalongkorn University, Thailand Co-Chair : Asst. Prof. Dr. Varinrumpai Seithtanabutara Department of Chemical Engineering, Faculty of Engineering, Khon Kaen University, Thailand			
Time	Abstract Code	Title	Presenter
13:00 – 13:15	TIChE-EF-01	Unlocking the potential of semi-clathrates for gas storage: Synergistic enhancement of TBAF with amino acids	Mr. Chakorn Viriyakul Chulalongkorn University, Thailand
13:15 – 13:30	TIChE-EF-03	Feasibility of hydrogen production from crude glycerol via photocatalysis using TiO ₂ -based photocatalysts	Mr. Thanapol Sutthiphong 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	Mr. Dedy Firmansyah 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	Miss Ketwarang Nimnualrat Chulalongkorn University, Thailand
14:00 – 14:15	TIChE-EF-06	One-dimensional simulation of an alkaline-acid direct glycerol fuel cell	Miss Papitchaya Chaloeypant King Mongkut's University of Technology Thonburi, Thailand
14:15 – 14:30	Networking Break (Coffee Break)		📍 Refreshment Zone (5 th Floor)

ORAL PRESENTATION PROGRAM

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

Day 1 : Tuesday, May 20, 2025

Session 5 : Sustainable and Green Chemistry (SG)

📍 Dusit 12 (5th Floor)
🕒 13:00 – 14:15

Chair : Prof. Dr. Hiroshi Uyama

Department of Applied Chemistry, The University of Osaka, Japan

Co-Chair : Assoc. Prof. Dr. Pornnapa Kasemsiri

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

Time	Abstract Code	Title	Presenter
13:00 – 13:30	Invited Speaker TIChE-IV-01	Material design and degradation engineering for plastics and textile recycling	 Prof. Dr. Hiroshi Uyama Department of Applied Chemistry The University of Osaka, Japan
13:30 – 13:45	TIChE-SG-07	A study of the self-heating propensity of raw and torrefied biomasses	Dr. Kyaw Thu King Mongkut's University of Technology Thonburi, Thailand
13:45 – 14:00	TIChE-SG-08	Preparation of bio-based polyol from soybean meal for polyurethane foam production	Miss Jidapa Klinputt Thammasat University, Thailand
14:00 – 14:15	TIChE-SG-13	Bio-based coating from chitosan and ethyl cellulose for oil- and water-resistant paper packaging	Miss Oraya Sraphaengnoi Chulalongkorn University, Thailand
14:15 – 14:30	Networking Break (Coffee Break)		📍 Refreshment Zone (5 th Floor)

Session 6 : Industrial Applications and Case Studies (IA) Process Engineering and Digital Technologies (PE)

📍 Dusit 13 (5th Floor)
🕒 13:00 – 14:15

Chair : Assoc. Prof. Dr. Chatchai Kunyawut

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

Co-Chair : Asst. Prof. Dr. Veerayut Lersbamrungsuk

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

Time	Abstract Code	Title	Presenter
13:00 – 13:15	TIChE-IA-01	Prediction of latent heat of vaporization of binary mixture using COSMO-SAC model	Mr. Natamorn Kamlue King Mongkut's Institute of Technology Ladkrabang, Thailand
13:15 – 13:30	TIChE-IA-03	Feedforward control of pulsed bed adsorption column for colorant removal in sugar syrup at different flow rates	Dr. Terasut Sookkumnerd Suranaree University of Technology, Thailand
13:30 – 13:45	TIChE-IA-04	The impact of learner characteristics on learning outcomes and time to degree completion	Asst. Prof. Dr. Idtisak Paopo Ubon Ratchathani University, Thailand
13:45 – 14:00	TIChE-PE-01	Development of computational fluid dynamics modeling of packed bed membrane reactor for dimethyl ether production from carbon dioxide	Miss Kannika Lhongbangplee Mahidol University, Thailand
14:00 – 14:15	TIChE-PE-03	Graph neural network for descriptor-free CO ₂ solubility prediction in aqueous amines	Mr. Apri Wahyudi Chulalongkorn University, Thailand
14:15 – 14:30	Networking Break (Coffee Break)		📍 Refreshment Zone (5 th Floor)

ORAL PRESENTATION PROGRAM

The 34th 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 th 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	Invited Speaker TIChE-IV-02	Polymer based nanosystems and hydrogels for biomedical applications	 Prof. Dr. Ravin Narain 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	Mr. Poomipat Chotngamkham 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	Mr. Jeremiah Otokpa Oja Chulalongkorn University, Thailand
15:30 – 15:45	TIChE-AM-07	Antioxidant sugar from cocrytallization of sucrose, erythritol and vitamin C	Miss Norramon Sathanasaowaphak Suranaree University of Technology, Thailand
15:45 – 18:30	Networking & Happy Hour at Exhibition Zone Gathering (Join with TNChE Asia 2025)		📍 Napalai A, B, C, D, E (4 th Floor)

Session 8 : Biochemical and Environmental Engineering (BE)			📍 Dusit 5 (5 th Floor) ⌚ 14:30 – 15:45
Chair : Assoc. Prof. Dr. Santi Chuetor 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 corncoobs for bioethanol production using <i>saccharomyces cerevisiae</i> SC90	Mr. Peerawat Suyatar Kasetsart University, Thailand
14:45 – 15:00	TIChE-BE-05	Optimization of bovine serum albumin concentration and diafiltration via tangential flow filtration	Mr. Worrawich Boonpan 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 ₂ emissions from natural gas power plants in Thailand	Mr. Kantaphan Punnaan Chulalongkorn University, Thailand
15:15 – 15:30	TIChE-BE-08	<i>Centella asiatica</i> active ingredients extraction using ultrasonic-assisted extraction and maceration	Miss Nichapa Areepong 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	Ms. Kanyanat Aunachad Mahidol University, Thailand
15:45 – 18:30	Networking & Happy Hour at Exhibition Zone Gathering (Join with TNChE Asia 2025)		📍 Napalai A, B, C, D, E (4 th Floor)

ORAL PRESENTATION PROGRAM

The 34th 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 th 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	Invited Speaker TIChE-IV-06	Boosting ammonia synthesis under mild conditions by control of the BaO-metal interface	 Prof. Dr. Katsutoshi Nagaoka 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	Miss Wanmai Srisuwanno Vidyasirimedhi Institute of Science and Technology, Thailand
15:15 – 15:30	TIChE-CR-08	A comparative study of commercial- and hydrothermal-synthesized TiO ₂ nanoparticles for photocatalytic silver recovery from jewelry plating effluent	Ms. Midori Tanaka Mahidol University, Thailand
15:30 – 15:45	TIChE-CR-11	Double perovskite enhanced with exsolved Ni-Co particles in Sr _{1.95} TiMo _{0.05} (NiCo) _x O _{6-δ} as anode for direct-fed ammonia solid oxide fuel cell	Ms. Solida Oun Chulalongkorn University, Thailand
15:45 – 18:30	Networking & Happy Hour at Exhibition Zone Gathering (Join with TNChE Asia 2025)		📍 Napalai A, B, C, D, E (4 th Floor)

Session 10 : Energy and Fuels (EF)			📍 Dusit 7 (5 th Floor) 🕒 14:30 – 15:45
Chair : Assoc. Prof. Dr. Nakorn Worasuwanarak 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	Mr. Teerapat Pongpuak Chulalongkorn University, Thailand
14:45 – 15:00	TIChE-EF-09	Enhancing drying efficiency of STR20 block rubber production using hot air pre-drying treatment	Mr. Jirapat Kongsong Prince of Songkla University, Thailand
15:00 – 15:15	TIChE-EF-10	Reduction and capture of chlorine in Napier grass using microwave torrefaction	Asst. Prof. Dr. Prodpran Siritheerasas 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	Mr. Kantapat Palawat 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	Mr. Natthaphon Sirireak King Mongkut's University of Technology Thonburi, Thailand
15:45 – 18:30	Networking & Happy Hour at Exhibition Zone Gathering (Join with TNChE Asia 2025)		📍 Napalai A, B, C, D, E (4 th Floor)

ORAL PRESENTATION PROGRAM

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

Day 1 : Tuesday, May 20, 2025

Session 11 : Sustainable and Green Chemistry (SG)			📍 Dusit 12 (5 th Floor) 🕒 14:30 – 15:45
Chair : Mr. Kieran N. Twaddle London Centre for Nanotechnology, University College London, United Kingdom Co-Chair : 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 ₂ 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 ₂ adsorption	Mr. Teerapat Inudom Chulalongkorn University, Thailand
15:30 – 15:45	TIChE-SG-17	Ethanol-assisted CO ₂ hydrogenation to methanol in a trickle-bed reactor	Mr. Pattarapol Akeakkharanusorn Chulalongkorn University, Thailand
15:45 – 18:30	Networking & Happy Hour at Exhibition Zone Gathering (Join with TNChE Asia 2025)		📍 Napalai A, B, C, D, E (4 th Floor)

Session 12 : Process Engineering and Digital Technologies (PE)			📍 Dusit 13 (5 th Floor) 🕒 14:30 – 15:45
Chair : Dr. Terasut Sookkumnerd School of Chemical Engineering, Institute of Engineering, Suranaree University of Technology, Thailand Co-Chair : 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. Budit Boonkhao Nakhon Phanom University, Thailand
15:45 – 18:30	Networking & Happy Hour at Exhibition Zone Gathering (Join with TNChE Asia 2025)		📍 Napalai A, B, C, D, E (4 th Floor)

ORAL PRESENTATION PROGRAM

The 34th 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)			9 Dusat 4 (5 th Floor) 10 09:00 – 10:15
Chair : Prof. Dr. Hiroshi Uyama Department of Applied Chemistry, The University of Osaka, Japan Co-Chair : Assoc. Prof. Dr. Pornnapa Kasemsiri 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. Nathachapong 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 geopolymer in acidic environments	Asst. Prof. Dr. Cherdphonng Seedao Burapha University, Thailand
10:15 – 10:30	Networking Break (Coffee Break)		9 Refreshment Zone (5 th Floor)

Session 14 : Biochemical and Environmental Engineering (BE)			9 Dusat 5 (5 th Floor) 10 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 Janmunee 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 Sreyppov Yoem Khon Kaen University, Thailand
10:15 – 10:30	Networking Break (Coffee Break)		9 Refreshment Zone (5 th Floor)

ORAL PRESENTATION PROGRAM

The 34th 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 th 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	Invited Speaker TIChE-IV-08	Dual-handed recognition: Targeting a single protein with two chemical ligands	 Asst. Prof. Dr. Xiaohong Tan Department of Chemistry, Bowling Green State University, USA
09:30 – 09:45	TIChE-CR-09	Photocatalytic silver recovery from cyanide-based plating effluent via TiO ₂ nanoparticles synthesized by microwave-assisted method	Mr. Auttawit Thoumrungroj Mahidol University, Thailand
09:45 – 10:00	TIChE-CR-16	Simulation of dry and steam reforming of methane over a nickel-based catalyst in a fixed-bed tube reactor using COMSOL	Mr. Krissadang Khamma King Mongkut's University of Technology Thonburi, Thailand
10:00 – 10:15	TIChE-CR-20	Development of core-shell LaNi _{0.8} Fe _{0.2} O ₃ catalysts with CeZrO ₂ shells for carbon-resistant dry reforming of methane	Miss Suchayamon Kaewprasert Chulalongkorn University, Thailand
10:15 – 10:30	Networking Break (Coffee Break)		📍 Refreshment Zone (5 th Floor)

Session 16 : Energy and Fuels (EF) Process Engineering and Digital Technologies (PE)			📍 Dusit 7 (5 th 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	TIChE-EF-15	Photocatalytic green hydrogen production by gold-decorated TiO _{2-x} photocatalyst	Prof. Dr. Mali Hunsom Mahidol University, Thailand
09:15 – 09:30	TIChE-EF-14	Improvement of electrocatalytic activities of Ag-based catalysts in oxygen reduction and oxygen evolution reactions	Miss Phatcharanan Pipatnawakit King Mongkut's University of Technology Thonburi, Thailand
09:30 – 09:45	TIChE-PE-07	Techno-economic analysis of hydrogen production pathways for carbon dioxide to methanol conversion process	Mr. Gantaphon Manimon Chulalongkorn University, Thailand
09:45 – 10:00	TIChE-PE-15	Performance evaluation of combined torrefaction and gasification process of lignocellulosic biomass	Mr. Aphiwat Lakkhanasombat King Mongkut's University of Technology North Bangkok, Thailand
10:00 – 10:15	TIChE-PE-17	Optimal input variables for an artificial neural network to predict evaporation efficiency in detergent production process	Mr. Baramee Imsin Burapha University, Thailand
10:15 – 10:30	Networking Break (Coffee Break)		📍 Refreshment Zone (5 th Floor)

ORAL PRESENTATION PROGRAM

The 34th 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 th 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 AI 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 Uliia Fitrass Thammasat University, Thailand	
10:15 – 10:30	Networking Break (Coffee Break)			📍 Refreshment Zone (5 th Floor)

Session 18 : Process Engineering and Digital Technologies (PE)				📍 Dusit 12&13 (5 th 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	 Prof. Dr. Nurak Grisdanurak Department of Chemical Engineering, Thammasat University, Thailand	
09:30 – 09:45	TIChE-PE-09	Techno-economic insights and limitation analysis of CO ₂ capture via monoethanolamine (MEA) absorption	Miss Manisa Mahahing Chulalongkorn University, Thailand	
09:45 – 10:00	TIChE-PE-16	Process simulation of synthetic fuel production from palm oil mill waste	Mr. Worawit Morin 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	Miss Lamphoun Inthavideth Suranaree University of Technology, Thailand	
10:15 – 10:30	Networking Break (Coffee Break)			📍 Refreshment Zone (5 th Floor)

ORAL PRESENTATION PROGRAM

The 34th 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 th 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	Invited Speaker TIChE-IV-07	In-situ pollution detection capability via robust diamond SERS	 Mr. Kieran N. Twaddle London Centre for Nanotechnology, University College London, UK
11:00 – 11:15	TIChE-AM-11	Toughness improvement of polybenzoxazine by blending with glycidyl methacrylate-grafted natural rubber	Miss Yadapa Wasikarat Chulalongkorn University, Thailand
11:15 – 11:30	TIChE-AM-13	Cellulose nanocrystals produced from bagasse pulp for drug delivery applications	Miss Sirikanya Pimsaran Khon Kaen University, Thailand
11:30 – 11:45	TIChE-AM-16	Preparation of N, S co-doped activated carbon from rice straw for high performance supercapacitor	Mr. Tippapon Tocuweang King Mongkut's University of Technology Thonburi, Thailand
11:45 – 12:00	Lunch		📍 Dusit 1, 2, 3 (5 th Floor)

Session 20 : Biochemical and Environmental Engineering (BE)			📍 Dusit 5 (5 th 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	TIChE-BE-10	Lignin extracted from rice straw and coconut coir	Miss Supapohn Pohnanotai Thammasat University, Thailand
10:45 – 11:00	TIChE-BE-15	Effects of cultivation temperature on alpha-amylase production from wild-type rice callus suspensions	Ms. Worapicha Daungtongcome King Mongkut's University of Technology Thonburi, Thailand
11:00 – 11:15	TIChE-BE-16	Lysine production from sugarcane molasses using <i>Corynebacterium glutamicum</i>	Miss Phatthariya Phromngulueam Suranaree University of Technology, Thailand
11:15 – 11:30	TIChE-BE-23	Sustainable production of drinking water from saltwater	Miss Zu Zu Aung Mahidol University, Thailand
11:30 – 11:45	TIChE-BE-25	Role of magnesium in phosphorus transformations during biomass pyrolysis	Dr. Jesper Knijnenburg Khon Kaen University, Thailand
11:45 – 12:00	Lunch		📍 Dusit 1, 2, 3 (5 th Floor)

ORAL PRESENTATION PROGRAM

The 34th 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 th 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 ₂ 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 th Floor)

Session 22 : Advanced Materials and Nanotechnology (AM)				📍 Dusit 7 (5 th 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. Sittthikiat 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 th Floor)

ORAL PRESENTATION PROGRAM

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

Day 2 : Wednesday, May 21, 2025

Session 23 : Sustainable and Green Chemistry (SG)			9 Dusit 11 (5 th 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	Invited Speaker TIChE-IV-05	Synthesis of carbonaceous nanomaterials from renewable agro-industrial waste	 Prof. Dr. Tawatchai Charinpanitkul Department of Chemical Engineering, Chulalongkorn University, Thailand
11:00 – 11:15	TIChE-SG-15	Chitosan-fibroin-based coating solution for prolonging the shelf life of bananas	Miss Wannida Sawangarunporn Burapha University, Thailand
11:15 – 11:30	TIChE-SG-21	Enhancement of CO ₂ capture performance of alcohols on MEA-IL-based biphasic solvents	Miss Rimping Prathumpitak Chulalongkorn University, Thailand
11:30 – 11:45	TIChE-SG-34	In situ thermal solvent-free synthesis of zeolitic imidazolate frameworks with high crystallinity and porosity for effective adsorption and catalytic applications	Dr. Somboon Chaemchuen Mahidol University, Thailand
11:45 – 12:00	Lunch		9 Dusit 1, 2, 3 (5 th Floor)

Session 24 : Process Engineering and Digital Technologies (PE)			9 Dusit 12&13 (5 th 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	TIChE-PE-10	Computational fluid dynamics (CFD) analysis of cooling water temperature profiles in high temperature operation heat exchangers	Ms. Suwapat Thiaranatron Chulalongkorn University, Thailand
10:45 – 11:00	TIChE-PE-19	Process simulation of lactic acid esterification in reactive distillation column: Effects of reboiler duty and alcohol	Assoc. Prof. Dr. Anawat Sungpet King Mongkut's University of Technology Thonburi, Thailand
11:00 – 11:15	TIChE-PE-20	Design and simulation of the coffee drying unit using solar thermal energy and ambient air circulation	Mr. Rittichai Preungchana King Mongkut's University of Technology Thonburi, Thailand
11:15 – 11:30	TIChE-PE-23	Machine learning-assisted multi-objective optimization of furfural production from lignocellulosic biomass hydrolysate	Mr. Patcharapuek Pattaramanon Silpakorn University, Thailand
11:30 – 11:45	TIChE-PE-25	Enhancing low-carbon hydrogen production from biomass gasification via machine-learning-aided multi-objective optimization with TOPSIS	Mr. Kitti Kamolram Kasetsart University, Thailand
11:45 – 12:00	Lunch		9 Dusit 1, 2, 3 (5 th Floor)

ORAL PRESENTATION PROGRAM

The 34th 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 (5th 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	Miss Chanokkan Buakhlee Chulalongkorn University, Thailand
13:15 – 13:30	TIChE-AM-22	Fabrication of polyphenylsulfone (PPSU) electro-spun nanofiltration membrane	Miss Ornpreeya Pongpan Chulalongkorn University, Thailand
13:30 – 13:45	TIChE-AM-25	Development of PVA-PNVCL-Fe ₃ O ₄ composite nanofibrous for drug delivery in cancer treatment	Mr. Sirawit Suknaisilp 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	Miss Tinutda Phonlam King Mongkut's Institute of Technology Ladkrabang, Thailand
14:00 – 14:15	TIChE-AM-36	Biocompatibility of hydrogel film blended jellyfish gelatin	Miss Nongnapas Luecha Burapha University, Thailand
14:15 – 14:30	Networking Break (Coffee Break)		📍 Refreshment Zone (5 th Floor)

Session 26 : Biochemical and Environmental Engineering (BE)

📍 Dusit 5 (5th Floor)
🕒 13:00 – 14:15

Chair : Prof. Dr. Katsutoshi Nagaoka

Department of Chemical Systems Engineering, Nagoya University, Japan

Co-Chair : Asst. Prof. Dr. Bundit Boonkhao

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	Mr. Pat Thongphet 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	Miss Pim-orn Thongpanchang 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	Miss Emma Asnachinda 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	Dr. Khemmathin Lueangwattanapong Kasetsart University, Thailand
14:00 – 14:15	TIChE-BE-37	Residue extraction on artificial knee surfaces using ultrasonic techniques	Ms. Thitima Naovong Suranaree University of Technology, Thailand
14:15 – 14:30	Networking Break (Coffee Break)		📍 Refreshment Zone (5 th Floor)

ORAL PRESENTATION PROGRAM

The 34th 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 (5th 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	Dr. Wasu Chaitree Silpakorn University, Thailand
13:15 – 13:30	TIChE-CR-22	Titania incorporated into magnetite mesoporous silica for removal of ciprofloxacin under UV radiation	Miss Dwita Widyawati Chulalongkorn University, Thailand
13:30 – 13:45	TIChE-CR-23	Electrochemical reduction and regeneration of carbamate	Miss Nattiya Jumpadib 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	Mr. Atipong Paikamnam King Mongkut's Institute of Technology Ladkrabang, Thailand
14:00 – 14:15	TIChE-CR-31	Methane dry reforming of calcium carbonate from carbamate mineralization	Miss Nattanan Watcharasawat Chulalongkorn University, Thailand
14:15 – 14:30	Networking Break (Coffee Break)		📍 Refreshment Zone (5 th Floor)

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

📍 Dusit 7 (5th 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)	Mr. Phutti Phong Wongsombun Chulalongkorn University, Thailand
13:15 – 13:30	TIChE-AM-38	Utilization of lignin from agricultural waste for enhancing performance of natural rubber composite	Miss Phatcharin Porat 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	Dr. Anis Ayuni Suied Universiti Tun Hussein Onn Malaysia, Malaysia
13:45 – 14:00	TIChE-SG-20	Mineralization in monoethanolamine solution with calcium chloride solution	Mr. Ratipuk Chung-in Chulalongkorn University, Thailand
14:00 – 14:15	TIChE-SG-28	Effect of co-solvents on the oxidative cleavage of oleic acid under ambient pressure	Miss Chakreeya Santhadklang Chulalongkorn University, Thailand
14:15 – 14:30	Networking Break (Coffee Break)		📍 Refreshment Zone (5 th Floor)

ORAL PRESENTATION PROGRAM

The 34th 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 (5th Floor)
🕒 13:00 – 14:00

Chair : **Assoc. Prof. Dr. Chaipayut Kruehong**
Department of Chemical Engineering, Faculty of Engineering, Khon Kaen University, Thailand

Co-Chair : **Assoc. Prof. Dr. Pailin Ngaotrakanwivat**
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	Miss Kanchisa Chandit 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 ₂ capture	Ms. Munyapa Limahksohn Chulalongkorn University, Thailand
13:30 – 13:45	TIChE-SG-38	Sustainable ethylene synthesis via photocatalytic conversion of succinic acid over metal-TiO ₂ photocatalysts	Miss Suttida Pomsri 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	Ms. Natthakritta Nokkhum Walailak University, Thailand
14:00 – 14:30	Networking Break (Coffee Break)		📍 Refreshment Zone (5 th Floor)

END OF ORAL SESSION

POSTER PRESENTATION PROGRAM

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

Wednesday, May 21, 2025

Poster Session: Advanced Materials and Nanotechnology (AM)		📍 Activity Hall (5 th Floor) 🕒 13:00 – 15:00
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 ₂ /AgInS ₂	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

Poster Session: Biochemical and Environmental Engineering (BE)		📍 Activity Hall (5 th Floor) 🕒 13:00 – 15:00
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 Deeleeпоjananan 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

Poster Session:
Catalysis and Reaction Engineering (CR)

📍 **Activity Hall (5th Floor)**
🕒 **13:00 – 15:00**

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 ₂ 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 geopolymer 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 Nutcha 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 ₂ 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 ₂ 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. Sutthiphong Rangauthok Chulalongkorn University, Thailand
TIChE-CR-27	Low-temperature methanol synthesis via ethanol-assisted approach over Cu/ZnO/Al ₂ O ₃ 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

Poster Session: Energy and Fuels (EF)		📍 Activity Hall (5 th Floor) 🕒 13:00 – 15:00
Abstract Code	Title	Presenter
TIChE-EF-07	Impact of trihexyl phosphate and dimethyl sulfoxide on LiPF ₆ -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 ₂ capture and mineralization by CaSO ₄ addition	Miss Nathaporn Kenbubpha Chulalongkorn University, Thailand
TIChE-EF-12	The effect of methanol and ethanol-based solvent on enhancing CO ₂ 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

Poster Session: Industrial Applications and Case Studies (IA)		📍 Activity Hall (5 th Floor) 🕒 13:00 – 15:00
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

Poster Session: Process Engineering and Digital Technologies (PE)		📍 Activity Hall (5 th Floor) 🕒 13:00 – 15:00
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 ₂ -ethanol and subcritical water extraction	Mr. Kassama Utthachai Chulalongkorn University, Thailand
TIChE-PE-05	Techno-economic analysis of crude peptides production from defective coffee beans	Mr. Chatchaphong Nakphadungsuk Chulalongkorn University, Thailand
TIChE-PE-14	Application of computational fluid dynamics for industrial liquid-liquid mixing tank design	Mr. Patipon 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

Poster Session: Sustainable and Green Chemistry (SG)		Activity Hall (5 th Floor) 13:00 – 15:00
Abstract Code	Title	Presenter
TIChE-SG-04	Design and development of a sustainable ethylene glycol production process via electrochemical CO ₂ 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 ₂ 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 ₂ -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 Rattanaorn 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 ₂ 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 ₂ -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 34th Thai Institution of Chemical Engineering and Applied Chemistry International Conference (TIChE2025)

Tuesday, May 20, 2025

Session : TIChE Senior Project Contest 2025 (Applied Research)		📍 Activity Hall (5 th Floor) 🕒 09:00 – 16:30
Project Code	Title	Contestant
TIChE-SE-A01 CU	Clean water production from seawater via CQDs-PVDF photothermal membrane distillation	(1) Supawadee Worapruengkjaru (2) Pajchimbud Aomsin (3) Prof. Dr. Joongjai Panpranot (4) Asst. Prof. Dr. Chalida Klaysom Department of Chemical Engineering Chulalongkorn University
TIChE-SE-A02 PSU	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
TIChE-SE-A03 CU	Computational fluid dynamics of cyclone reactor for carbon dioxide capture	(1) Naphat Pattanapaisarnwong (2) Nawaphon Piriyaikulthorn (3) Prof. Dr. Benjapon Chalermssinsuwan Department of Chemical Technology Chulalongkorn University
TIChE-SE-A04 MU	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
TIChE-SE-A05 KU	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
TIChE-SE-A06 KMUTNB	Green 3D-printed lignin composites with essential oils for next-generation medical applications	(1) Charinrat Noikoon (2) Boonyanuch Engkawong (3) Anchisa Thamrongkulpiphat (4) Dr. Wanwitoo Wanmolee (5) Dr. Bongkot Hararak Department of Chemical Engineering King Mongkut's University of Technology North Bangkok
TIChE-SE-A07 KMUTT	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 Mongkut's University of Technology Thonburi
TIChE-SE-A08 KMITL	Influence of cobalt volatilization on LSM cathode of solid oxide fuel cell	(1) Akkarawich Laumkha (2) Penpitcha Achachotipong (3) Assoc. Prof. Dr. Patthranit Wongpromrat Department of Chemical Engineering King Mongkut's Institute of Technology Ladkrabang

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

Session : TIChE Senior Project Contest 2025 (Basic Research)		📍 Activity Hall (5 th Floor) 🕒 09:00 – 16:30
Project Code	Title	Contestant
TIChE-SE-B01 KKU	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
TIChE-SE-B02 KMUTT	Design and fabrication of workshop-ready filtration equipment for chemical engineering education	(1) Sombat Srisuklorn (2) Kairawin Burapongbundit (3) Asadawut Naicharoen (4) Dr. Kiattinatapon Juengcharoenpoorn (5) Asst. Prof. Dr. Kantharakorn Macharoen Department of Chemical Engineering King Mongkut's University of Technology Thonburi
TIChE-SE-B03 KU	Ethanol conversion to light olefins over ZnZrO _x /beta zeolite composite: A selective route towards propylene	(1) Chaikrit Phattarawansopon (2) Nattakit Siriwitsutar (3) Dr. Thidarat Imyen Department of Chemical Engineering Kasetsart University
TIChE-SE-B04 PSU	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
TIChE-SE-B05 CU	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
TIChE-SE-B06 MU	Machine learning model for CO ₂ 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
TIChE-SE-B07 SU	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 Chotigkrai Department of Chemical Engineering Silpakorn University
TIChE-SE-B08 TU	Pretreatment of medium-sized lithium-ion battery (LIBs) waste prior to the disposal	(1) Arisa Saowakhon (2) Nantakran Wangsamaann (3) Asst. Prof. Dr. Woraratana Pattaraprakorn (4) Prof. Dr. Nurak Grisdanurak Department of Chemical Engineering Thammasat University
TIChE-SE-B09 KMITL	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
TIChE-SE-B10 SUT	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
TIChE-SE-B11 UBU	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
TIChE-SE-B12 CU	Synthesis of MnO ₂ 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 34th Thai Institution of Chemical Engineering and Applied Chemistry International Conference (TIChE2025)

Wednesday, May 21, 2025

Session : TIChE High School Project Contest 2025 (Poster Competition)		📍 Activity Hall (5th Floor) 🕒 09:00 – 12:00
Project Code	Title	Contestant
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 Srichompoo (2) Phatcharakon Jirotearrayatanakun (3) Navarat Sodesiri Sisaketwittayalai School, Sisaket
TIChE-HS-03	Carbon dots from coffee grounds	(1) Watcharaboon Nakaok (2) Intira Kaewsai (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 Thongprajukaew 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) Naruechatr 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 Rattanakhon 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 Sriyathap (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</i> L.) 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		



The 34th Thai Institution of Chemical Engineering and
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Organized by
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