



TIChE
The Thai Institute of
Chemical Engineering
and Applied Chemistry

สมาคมวิศวกรรมเคมีและเคมีประยุกต์แห่งประเทศไทย (TIChE) The 2nd TIChE Open Innovation Idea Challenge

- สื่อความ และ ประชาสัมพันธ์เชิญชวน -

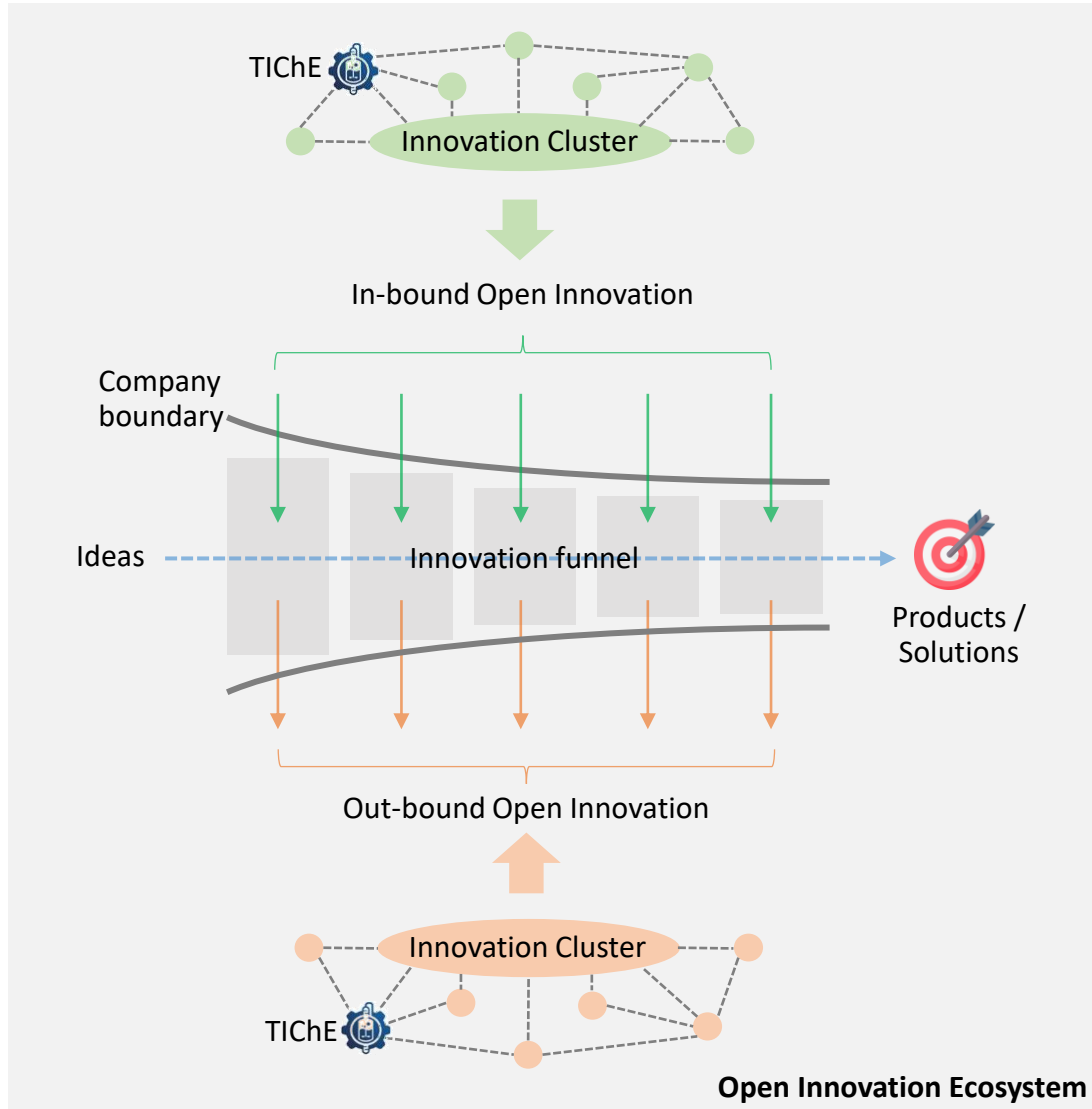
Objectives:

The Thai Institute of Chemical Engineering and Applied Chemistry (TIChE) has been setup the open innovation idea challenge under the theme of “National Decarbonization” to find the best creative ideas to develop innovations with leading private companies in the country with the following objectives:

1. Create opportunity between academic, research institute, and start-up company, and leader private company in Thailand to accelerate innovation ideas to commercialization.
2. Build up awareness and important of the development of environment-friendly innovation, effectiveness of energy and resource utilizations for researchers. This will lead to sustainability of climate balance and long-term carbon footprint reduction.
3. Provide opportunities for researchers participating in the project to present their creativity as well as receiving useful suggestions for further research development from experts in academic, industry and government sectors

Open Innovation – drive ideas become products/solution to more success

- TIChE will be a part of innovation cluster to help accelerate innovation products/solution for industry



Close vs Open Innovation

Close Innovation:

- The ideas and development efforts remain **mostly internal reliable**
- **Suppliers** may **make contributions** throughout **the entire process**.

Open Innovation:

- The ideas are **better connected to the market** and meet customer needs.
- Development solutions **bring about better technological knowledge**.

Outcome from open innovation:

Examples:

- Optimization of water recovery in cooling towers - ArcelorMittal.
- Market applications of a new copper-graphene nanocomposite - Codelco.
- How to remove plastic (for example, using cardboard) in packages of 6 water bottles.
- Flexible and cost-efficient design of a temporary factory building for precast concrete manufacturing – Pacadar OHL.



The Thai Institute of
Chemical Engineering and
Applied Chemistry

established in 1996

Mission:

- Promote and support **education** in chemical engineering and applied chemistry to have equal standards throughout the country
- Promote cooperation and development of related **industries** including research on creating knowledge and new technology
- Knowledge dissemination service and giving advice on chemical engineering and applied chemistry for the benefit of the general industry in the **country**
- Representing professionals in chemical engineering and applied chemistry across the country to coordinate and **collaborate with local & international organizations**
- Promote and support the practice of chemical engineering and applied chemistry for **the growth of the profession considering the ethics and benefits of society** together with the Council of Engineers and the Engineering Institute of Thailand

2021 Highlight activities:

- Communication Channel for new chemical engineer: how to write resume,
- Communication Channel for industry: best practices sharing, technology update
- Lesson learnt from Accreditation Board for Engineering and Technology (ABET)
- Academic conference for both local and international
 - International Chemical Engineering Symposia (IChES) – Virtual Conference
 - TIChE Annual Conference
- Chemical Engineering and Applied Chemistry Project Contest (for undergraduate)
- **The 1st TIChE Open Innovation Idea Challenge**

The 1st TIChE Open Innovation Idea Challenge



เปิดรับสมัครแล้ว วันนี้
The 1st TIChE Open Innovation Idea Challenge
ประกวดไอเดียเปลี่ยนโลกภายใต้แนวคิด
“National Decarbonization” ใน 3 สาขา

Smart Solution

Advocate sound technical solutions to be used for decarbonization

ตัวอย่างโครงการ

- Technology for carbon capture and utilization & storage
- Advanced material to support decarbonization
- Mobile application for efficiency improvement
- Fuels switching to support lower emission

Smart Approach

Establish standard approach to measure and report carbon reduction for industry and institutions

ตัวอย่างโครงการ

- Standard, guideline & procedure for decarbonization
- Stakeholders, roles and responsibility for product life cycle
- Mobile application for emission data gathering and monitoring
- Predictive simulation for decarbonization

Smart Action

Propose national priorities for decarbonization actions

ตัวอย่างโครงการ

- Mid-to-long term approach for National decarbonization
- Low carbon model City/ province
- Bio, Circular, Green and Sharing economy
- Initiative to drive laws, regulations and incentive for decarbonization

เส้นทางการแข่งขัน

ส่งรายละเอียดโครงการ	ประกาศผลรอบคัดเลือก	นำเสนอรอบตัดสิน	มอบรางวัล
15 ก.ย. - 15 พ.ย. 64 เมื่อสมัครแล้ว สามารถส่งproposal ได้ถึง 15 พ.ย.	15 ธ.ค. 64 เข้ารอบสุดท้าย สาขาละ 3 ทีม	20 ม.ค. 65 นำเสนอ ทีมละ 5 นาที	20 ม.ค. 65

หากคุณเป็น “ผู้ชนะ” ในแต่ละสาขา
รับโล่เกียรติยศ ประกาศนียบัตร เงินรางวัล
และโอกาสต่อยอดไอเดียให้เป็นจริง
ร่วมกับหน่วยงานภาครัฐ และบริษัทเอกชนชั้นนำ

สแกนเพื่อสมัคร

ขยายเวลารับสมัครถึง 15 พ.ย. 64 นี้
สอบถามเพิ่มเติมที่ www.tiche.org และ tiche.org@gmail.com

6 Finalist Pitching Teams

1. Graphene production using remaining ammonia in skim natural rubber latex
2. CO2 capture from flue gas of power plant using temperature swing adsorption process
3. Novel single CCU unit for upgrading amine-CO₂ adduct to nanocrystalline carbon
4. Catalytic pyrolysis of waste cooking oil into liquid fuel using calcium-based catalyst from cockle shell
5. CO2 Direct Air Capture for Sustainable Aviation Fuel
6. Simulation of emission from industry in Chiang Mai province to identify technology gap for improvement

3 Winners

1. Graphene production using remaining ammonia in skim natural rubber latex
2. CO2 capture from flue gas of power plant using temperature swing adsorption process
- 1 **3. Novel single CCU unit for upgrading amine-CO₂ adduct to nanocrystalline carbon**
- 2 **4. Catalytic pyrolysis of waste cooking oil into liquid fuel using calcium-based catalyst from cockle shell**
- 3 **5. CO2 Direct Air Capture for Sustainable Aviation Fuel**
6. Simulation of emission from industry in Chiang Mai province to identify technology gap for improvement

The 1st TIChE Open Innovation Idea Challenge



The 2nd TIChE Open Innovation Idea Challenge

- This year, we target to support the innovation for Bio-Circular-Green economy policy to drive the sustainable economic and social development in Thailand.

Theme:

Decarbonization pathways toward Thailand's Net Zero Emissions

Problem Statement:

Nation needs innovative ideas and sustainable solutions from reputable various scientific disciplines to pave the way and strengthen BCG Economy within country towards ambitious carbon neutrality in 2050 and net zero emission target in 2065.

Area	Topic		Awards (Baht)
Bio Economy	Bio-refinery, Bio-waste upgrading, Bio-material, Bio-plastics and chemicals	Academic	20,000
		Start-up	40,000
Circular Economy	Waste reduction Mechanical recycle technology Chemical recycle technology	Academic	20,000
		Start-up	40,000
Green Economy	Efficiency improvement Low carbon products GHG mitigation CCUS and H ₂	Academic	20,000
		Start-up	40,000

Track:

Academic

Start-up

The 2nd TIChE Open Innovation Idea Challenge

Process	Timeline	Activity	R&R
Announcement	Sep 2022	<ul style="list-style-type: none"> • Registration • Related document preparation • Communication 	<ul style="list-style-type: none"> • TIChE
Pre-session	Jan 2023	<ul style="list-style-type: none"> • Gathering needs from interested industry • Sharing by experts 	<ul style="list-style-type: none"> • Industry
Coaching and Proposal Submission	Jan 2023 – Apr 2023	<ul style="list-style-type: none"> • Proposal preparation consultation • Presenter coaching 	<ul style="list-style-type: none"> • Academic and Industry
Pitching	Jun 2023	<ul style="list-style-type: none"> • Seeking the winner (co-event in TNChE 2023) 	<ul style="list-style-type: none"> • Pitching committee (Appointed by TIChE)
Award	Jun 2023	<ul style="list-style-type: none"> • Award by league and area: <ul style="list-style-type: none"> – 6 winners: Academic 3, Start-up 3 	<ul style="list-style-type: none"> • Sponsors : from industry <ul style="list-style-type: none"> – Bio-economy: Mitr phol x TIChE – Circular economy: SCGC x TIChE – Green economy: GC x TIChE



TIChE

Thailand Networking of Chemical Engineer