

# 2026 Net Zero Tech International Contest

## List of Final Contest Teams-Sustainability

| Project ID | Project Title                                                                                            | Position | Name                             | Country Region | School                                               | Department                                           |
|------------|----------------------------------------------------------------------------------------------------------|----------|----------------------------------|----------------|------------------------------------------------------|------------------------------------------------------|
| S001       | Turning Waste into Climate Solutions: Biochar-PCM Composites for Carbon and Thermal Storage in Buildings | Advisor  | Chen Ying-Liang                  | Taiwan         | National Cheng Kung University                       | Department of Resources Engineering                  |
|            |                                                                                                          | Leader   | Huang Yao Kuan                   |                |                                                      |                                                      |
|            |                                                                                                          | Member   | Duverger Joel Hergust            | Haiti          |                                                      | Program on Energy Engineering                        |
|            |                                                                                                          |          | Bakhtiyorova Gulnigor            | Uzbekistan     |                                                      |                                                      |
|            |                                                                                                          |          | Van Damme Eva                    | Belgian        |                                                      | Civil Engineering                                    |
|            |                                                                                                          |          | De la Huerta Ramirez Maria Belen | Paraguayan     |                                                      | Environmental Engineering                            |
| S002       | Black Mass Twin: Direct Regeneration of Spent Li-Ion Battery Black Mass into Dual-Energy Catalysts       | Advisor  | Chang Jia-Yaw                    | Taiwan         | National Taiwan University of Science and Technology | Department of Chemical Engineering                   |
|            |                                                                                                          |          | Lu Chia-Hung                     |                | Cheng Shiu University                                | Department Of Electronic Engineering                 |
|            |                                                                                                          |          | Tseng Hsin-Hua                   |                | Army Academy R.O.C.                                  | Department of Chemical Engineering                   |
|            |                                                                                                          |          | Yen Chia-Liang                   |                | Cheng Shiu University                                | Department of Electronic Engineering                 |
|            |                                                                                                          | Leader   | Chang Hong-Sheng                 |                | National Taiwan University of Science and Technology | Department of Chemical Engineering                   |
|            |                                                                                                          | Member   | Yan Ting-Jhen                    |                |                                                      | Graduate Institute of Digital Learning and Education |
|            |                                                                                                          |          | Hsiao Tsai-Hsuan                 |                | National Taiwan Ocean University                     | Department of Marine Environmental Information       |
|            |                                                                                                          |          |                                  |                |                                                      |                                                      |

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|-----------------|----------------------------------------------------------------------------------------------|----------------|------------------------------------|----------|------------------------------------------------------|---------------------------------------------------------|
|                 |                                                                                              |                | Lu Hsueh-Yi                        |          | National Taipei University of Technology             | Department of Information and Finance Management's      |
|                 |                                                                                              |                | Lee Wei-Chieh                      |          | Cheng Shiu University                                | Electronic Engineering                                  |
| S003            | Enhanced earth sustainability by CO2 capture from flue gas & hydrogen production             | Advisor        | Chung Tai-Shung                    | Taiwan   | National Taiwan University of Science and Technology | Graduate Institute of Applied Science and Technology    |
|                 |                                                                                              | Leader         | Chou Qing-Yun                      |          |                                                      | Department of Chemical Engineering                      |
|                 |                                                                                              | Member         | Goro Meta                          | Ethiopia |                                                      | Graduate Institute of Applied Science and Technology    |
|                 |                                                                                              |                | Abate Yenealem Wagew               |          |                                                      |                                                         |
|                 |                                                                                              |                | Tseng You-Jie                      | Taiwan   |                                                      |                                                         |
|                 |                                                                                              |                | Su Jing- Hui                       |          |                                                      |                                                         |
|                 |                                                                                              |                | Chung Hsing-Kai                    |          |                                                      |                                                         |
|                 |                                                                                              | Hu Chen-Hsun   | Department of Chemical Engineering |          |                                                      |                                                         |
| Tseng Kang-Ning |                                                                                              |                |                                    |          |                                                      |                                                         |
| S004            | Waste to Wealth: From Li-ion Batteries to High-Entropy Electrocatalysts via Machine Learning | Advisor        | Hung Wei-Hsuan                     | Taiwan   | National Central University                          | Graduate Institute of Materials Science and Engineering |
|                 |                                                                                              |                | Lin Wei-Chun                       |          | National Sun Yat-sen University                      | Department of Photonics                                 |
|                 |                                                                                              | Leader         | Tsai Yi-Lin                        |          | National Central University                          | Department of Chemical and Materials Engineering        |
|                 |                                                                                              | Member         | Chiu I-Chia                        |          |                                                      | Graduate Institute of Materials Science and Engineering |
|                 |                                                                                              |                | Chang Yuan-Han                     |          |                                                      |                                                         |
|                 |                                                                                              |                | Huang Ching-Yun                    |          |                                                      | Graduate College of Sustainability and Green Energy     |
|                 |                                                                                              |                | Su Shi-Yao                         |          |                                                      |                                                         |
|                 |                                                                                              | Wang Yan-Jun   | Department of Photonics            |          |                                                      |                                                         |
|                 |                                                                                              | Kuo Chia-Chien |                                    |          |                                                      |                                                         |
| S005            | Integrated CCUS Platform for Carbon Circularity and Sustainable Energy Technologies          | Advisor        | Tai Nyan-Hwa                       | Taiwan   | National Tsing Hua University                        | Department of Materials Science and Engineering         |
|                 |                                                                                              |                | Lin Chien-Hung                     |          |                                                      | College of Sustainability                               |

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|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|------------------------|-----------|---------------------------------------------------------|-------------------------------------------------------------------|
|      |                                                                                                                                                                                  |         | Liu Wei-Ren            |           | Chung Yuan Christian University                         | Department of Chemical Engineering                                |
|      |                                                                                                                                                                                  |         | Lee Mengshan           |           | National Cheng Kung University                          | Department of Environmental Engineering                           |
|      |                                                                                                                                                                                  |         | Yeh Che-Ning           |           | National Tsing Hua University                           | Materials Science and Engineering                                 |
|      |                                                                                                                                                                                  |         | Lin Chin-Jung          |           | National Central University                             | Graduate Institute of Environmental Engineering                   |
|      |                                                                                                                                                                                  | Leader  | Chang Yao-Yang         | Japan     | National Cheng Kung University                          | Academy of Innovative Semiconductor and Sustainable Manufacturing |
|      |                                                                                                                                                                                  | Member  | Lee Chih-Hsuan         |           | National Central University                             | Graduate Institute of Environmental Engineering                   |
|      |                                                                                                                                                                                  |         | Kawakami Hana          | Taiwan    | National Tsing Hua University                           | Department of Materials Science and Engineering                   |
|      |                                                                                                                                                                                  |         | Lee Hsin-chieh         |           | Chung Yuan Christian University                         | Department of Chemical Engineering                                |
|      |                                                                                                                                                                                  |         | Sun Wen                |           | National Kaohsiung University of Science and Technology | Department of Environmental and Safety Engineering                |
|      |                                                                                                                                                                                  |         | Lin Han-Shiuan         |           |                                                         |                                                                   |
|      |                                                                                                                                                                                  |         | Wang Ying Ching        |           |                                                         |                                                                   |
|      |                                                                                                                                                                                  |         | Liao Wenyi             |           |                                                         |                                                                   |
| S006 | CoNex: A Regeneratibe Net Positive Education Center with Photocatalytic and Alkai-Activated Material Facade · Carbon Sequestering Rainscreen · and Sustainable Mechanical System | Advisor | Alkadri Miktha Farid   | Indonesia | Universitas Indonesia                                   | Architecture                                                      |
|      |                                                                                                                                                                                  |         | Lubis Arnas            |           |                                                         | Mechanical Engineering                                            |
|      |                                                                                                                                                                                  |         | Pakpahan Vine Novia    |           |                                                         | Architecture                                                      |
|      |                                                                                                                                                                                  |         | Amani Syahlaisa Afra   |           |                                                         | Architecture                                                      |
|      |                                                                                                                                                                                  | Leader  | Athallah Nadhif Khairu |           |                                                         | Mechanical Engineering                                            |
|      |                                                                                                                                                                                  | Member  | Sulistiyanto           |           |                                                         |                                                                   |
|      |                                                                                                                                                                                  |         | Fawzaan Dwi Firdaus    |           |                                                         |                                                                   |

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|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------|-----------|----------------------------------------------------|------------------------------------------------|
|      |                                                                                                                                                           |         | Muhammad Djackwan |           |                                                    |                                                |
|      |                                                                                                                                                           |         | Mellisa Laura     |           |                                                    | Architecture                                   |
| S007 | AI Black Soldier Fly Vanguard: Transforming Organic Waste into High-Value Resources with Carbon-Negative Technology/出奇「智」勝黑騎兵：AI黑水虻智慧養殖×有機廢棄物資源高值化與負碳轉化技術 | Advisor | Lin Yao-Tung      | Taiwan    | National Chung Hsing University                    | Soil and Environmental Science                 |
|      |                                                                                                                                                           |         | Wu Jiunn-Lin      |           |                                                    | Dept. of Computer Science and Engineering      |
|      |                                                                                                                                                           |         | Huang Shaw-Yhi    |           |                                                    | Department of Entomology                       |
|      |                                                                                                                                                           |         | Weng Chih-Huang   |           | I-Shou University                                  | Department of Civil Engineering                |
|      |                                                                                                                                                           | Leader  | Chen Ying Chen    |           | National Chung Hsing University                    | Doctoral Program in Plant Health Care          |
|      |                                                                                                                                                           | Member  | Wu Yu Hsuan       |           |                                                    | Department of computer science and engineering |
|      |                                                                                                                                                           |         | Lee Sheng Yang    |           |                                                    | Department of Entomology                       |
| S008 | GreenBit: AI-Smart Heat Pump–Integrated Adsorption Direct Air Capture System for Carbon-Negative Data Center Operation                                    | Advisor | Shang Jin         | Australia | City university of Hong Kong                       | School of Energy and Environment               |
|      |                                                                                                                                                           |         | Yu Bor Yih        | Taiwan    | National Taiwan University                         | Department of Chemical Engineering             |
|      |                                                                                                                                                           |         | Ning Zhi          | Hong Kong | The Hong Kong University of Science and Technology | Division of Environment and Sustainability     |
|      |                                                                                                                                                           | Leader  | Zhang Boyu        | China     | City University of Hong Kong                       | SEE                                            |
|      |                                                                                                                                                           | Member  | Liu Jingwen       |           | The Hong Kong University of Science and Technology | Division of Environment and Sustainability     |
|      |                                                                                                                                                           |         | Chih-Lin Lee      | Taiwan    | National Taiwan University                         |                                                |
| S009 | CocoCaptureAI:AI-Enabled Development of Scalable Next-Generation Direct Air Capture                                                                       | Advisor | Loy Adrian        | Malaysia  | University of Melbourne, Australia                 | Chemical Engineering                           |



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|      | Sorbents: Transforming Agricultural Waste into Climate Solutions                                                          |               | How Bing Shen         |           | Swinburne University of Technology, Malaysia         | Sustainable Technologies                             |
|      |                                                                                                                           | Leader        | Chen Miao             | China     | University of Melbourne, Australia                   | Department of Chemical Engineering.                  |
|      |                                                                                                                           | Member        | Tan Adeline Shu Ting  | Malaysia  | Swinburne University of Technology, Malaysia         | Research Centre for Sustainable Technologies         |
|      |                                                                                                                           |               | Chew Yick Eu          |           |                                                      |                                                      |
| S010 | From Waste to Resource: Circular Valorization of End-of-Life Photovoltaic Modules Using Recyclable Deep Eutectic Solvents | Advisor       | Chen Chun-Chi         | Taiwan    | National Chung Hsing University                      | Department of Environmental Engineering              |
|      |                                                                                                                           | Leader        | Shih Min-Hsun         |           |                                                      |                                                      |
|      |                                                                                                                           | Member        | Lin Yu-Hsuan          |           |                                                      |                                                      |
|      |                                                                                                                           |               | Chen Kuan-Yu          |           |                                                      |                                                      |
|      |                                                                                                                           |               | Shih Cheng-Hsin       |           |                                                      |                                                      |
|      |                                                                                                                           | Liao Mao-Tang | Feng Chia University  |           | Department of Environmental Science and Engineering  |                                                      |
| S011 | Bye bye CO <sub>2</sub> ...Welcome Clean Energy!                                                                          | Advisor       | Wang Fu Ming          | Taiwan    | National Taiwan University of Science and Technology | Graduate Institute of Applied Science and Technology |
|      |                                                                                                                           | Leader        | Jayaraman Divyavalli  | India     |                                                      |                                                      |
|      |                                                                                                                           | Member        | Arumugam Suryaprakash | India     |                                                      |                                                      |
|      |                                                                                                                           |               | Elaine Michelle       | Indonesia |                                                      |                                                      |
|      |                                                                                                                           |               | Qonita Ulya           | Taiwan    |                                                      |                                                      |
|      |                                                                                                                           |               | Zhang Yi-Xuan         |           |                                                      |                                                      |
| S012 | Energy from Thin Air: Sovereign , Resilient e-Natural Gas                                                                 | Advisor       | Li Gang               | China     | The University of Melbourne                          | Department of Chemical Engineering                   |
|      |                                                                                                                           | Leader        | Mehdifar Sina         | Australia | Royal Melbourne Institute of Technology              | Department of Chemical Engineering                   |
|      |                                                                                                                           | Member        | Feng Yuying           |           | The University of Melbourne                          | Chemical Engineering                                 |
|      |                                                                                                                           |               | Wei Yixin             | China     |                                                      |                                                      |
|      |                                                                                                                           |               | Ng Kha Meng           | Malaysia  |                                                      |                                                      |

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| S013 | Waste-to-energy Constructed Wetland Microbial Fuel Cell for Sustainable Wastewater Treatment                                                                    | Advisor | Chong Woon Chan      | Malaysia  | Universiti Tunku Abdul Rahman                           | Department of Chemical Engineering                    |
|      |                                                                                                                                                                 |         | Tee Shiau Foon       | Malaysia  |                                                         |                                                       |
|      |                                                                                                                                                                 |         | Shuit Siew Hoong     | Malaysia  |                                                         |                                                       |
|      |                                                                                                                                                                 | Leader  | Siew Quee Nie        | Malaysia  |                                                         |                                                       |
|      |                                                                                                                                                                 | Member  | Koh Yung Xin         | Malaysia  |                                                         |                                                       |
|      |                                                                                                                                                                 |         | Tai Xin Yi           | Malaysia  |                                                         |                                                       |
| S014 | Integrated Recovery of Green Ammonia and Value-Added Sulfur Products from Nitrate- and Sulfide-Containing Wastewater via Coupled NO <sub>3</sub> RR SOR         | Advisor | Ting Jyh-Ming        | Taiwan    | National Cheng Kung University                          | Department of Materials Science and Engineering       |
|      |                                                                                                                                                                 | Leader  | Hung Ting Chun       |           |                                                         |                                                       |
|      |                                                                                                                                                                 | Member  | Liao Yi Chu          |           |                                                         |                                                       |
|      |                                                                                                                                                                 |         | Wu Jian an           |           |                                                         |                                                       |
| S015 | From Waste PET to Green Hydrogen: An Energy-Efficient Upcycling Platform                                                                                        | Advisor | Ting Jyh Ming        | Taiwan    | National Cheng Kung University                          | Department of Materials Science and Engineering       |
|      |                                                                                                                                                                 | Leader  | Lin Chen Ting        |           |                                                         |                                                       |
|      |                                                                                                                                                                 | Member  | Chao Shao Chun       |           |                                                         |                                                       |
|      |                                                                                                                                                                 |         | Hu Hsi Yuan          |           |                                                         |                                                       |
| S016 | Dual-Waste Upcycling of Solar Silicon Kerf and Biomass Wood Tar into Circular Si/C Battery Anodes: From Green-Energy Residues to Sustainable Battery Materials. | Advisor | Lin Tzu-Ying         | Taiwan    | National Tsing Hua University                           | Department of Materials Science and Engineering       |
|      |                                                                                                                                                                 | Leader  | Tsai Tsung-Yen       |           |                                                         |                                                       |
|      |                                                                                                                                                                 | Member  | Chen Yu-Zhen         |           |                                                         |                                                       |
|      |                                                                                                                                                                 |         | Chen Jie-Ming        |           |                                                         |                                                       |
|      |                                                                                                                                                                 |         | Liao Chen-Hsin       |           |                                                         |                                                       |
| S017 | ACAI — Adaptive Control Algorithm Integration: Toward sustainable, energy-efficient, and membrane-safe reverse osmosis in full-scale water treatment            | Advisor | Sean Wu-Yang         | Taiwan    | National Chung Hsing University                         | Department of Bio-industrial Mechatronics Engineering |
|      |                                                                                                                                                                 | Leader  | Nurjanah Isnaeni     | Indonesia |                                                         |                                                       |
|      |                                                                                                                                                                 | Member  | Jamaludin Mukhammad  |           |                                                         |                                                       |
|      |                                                                                                                                                                 |         | Rohman Yulian Fatkur |           |                                                         |                                                       |
|      |                                                                                                                                                                 |         | Firdaus Akhmad Azhar |           |                                                         |                                                       |
|      |                                                                                                                                                                 |         | Sobhita Rama Arya    |           |                                                         |                                                       |
|      |                                                                                                                                                                 |         | Wu Chia-Hao          | Taiwan    |                                                         |                                                       |
| S018 | VerdeMend                                                                                                                                                       | Advisor | Su Fengjie           | Taiwan    | National Kaohsiung University of Science and Technology | Department of Marine Biotechnology                    |
|      |                                                                                                                                                                 | Leader  | Tsai Minlun          |           |                                                         |                                                       |
|      |                                                                                                                                                                 | Member  | Hsu Lisi             |           |                                                         |                                                       |
|      |                                                                                                                                                                 |         | Tseng Ningshao       |           |                                                         |                                                       |

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|------|------------------------------------------------------------------------------------------------|---------|-----------------------|----------|------------------------------------------|---------------------------------------------|
|      |                                                                                                |         | Huang Chiungwei       |          |                                          |                                             |
|      |                                                                                                |         | Chen Pinron           |          |                                          |                                             |
|      |                                                                                                |         | Xu Minglun            |          |                                          |                                             |
| S019 | Energy-Efficient and Low-Cost Carbon Capture Using Hydrophobic Membranes                       | Advisor | Matsuda Yuki          | Japan    | Tohoku University                        | Graduate School of Environmental Studies    |
|      |                                                                                                | Leader  | Yoshida Kota          |          |                                          |                                             |
|      |                                                                                                | Member  | Nobuhide Yasuda       |          |                                          | School of engineering                       |
|      |                                                                                                |         | Tani Ryunosuke        |          |                                          |                                             |
|      |                                                                                                |         | Yamamoto Risa         |          |                                          | Graduate School of Environmental Studies    |
| S020 | The Power of Biochar: Applications in Agri-Biodegradable Mulch Films and Heavy Metals Sorption | Advisor | Iamsaard Kesinee      | Thailand | Naresuan University                      | Natural Resource and Environment            |
|      |                                                                                                |         | Lin Yao-Tung          | Taiwan   | National Chung Hsing University , Taiwan | Soil and Environmental Science              |
|      |                                                                                                |         | Weng Chih-Huang       |          | I-Shou University                        | Department of Civil Engineering             |
|      |                                                                                                |         | Hsueh Han-Yu          |          | National Chung Hsing University          | Department of Materials Science             |
|      |                                                                                                |         | Jenn-Wen Huan         |          | National Chung Hsing University          | Department of Department of Plant pathology |
|      |                                                                                                | Leader  | Prethawin Kanyasorn   | Thailand | Naresuan University                      | Natural Resource and Environment            |
|      |                                                                                                | Member  | Phatcharapha Yoisakun |          |                                          |                                             |
|      |                                                                                                |         | Supitcha Panapoy      |          |                                          |                                             |
|      |                                                                                                |         |                       |          |                                          |                                             |

**Judge's Signature**

Fuh-Sheng Shieu (Fuh-Sheng Shieu)

Pei-Te Chiueh (Pei-Te Chiueh) · \_\_\_\_\_ (Ming-Chi Mitch Chou) · Tzong-Ming Lee (Tzong-Ming Lee)

Hung-Yin Tsai (Hung-Yin Tsai) · Chuen-Jinn Tsai (Chuen-Jinn Tsai) · Dmitrij Bogdanov (Dmitrij Bogdanov)

Da-Jeng Yao (Da-Jeng Yao)

July 8, 2026