

12th Asian Engineering Deans' Summit (AEDS 2025) May 19–21, 2025

Post-Event Report

College of Engineering and

College of Electrical Engineering and Computer Science,

National Taiwan University

The 12th Asian Engineering Deans' Summit (AEDS 2025) was co-hosted by the College of Engineering and the College of Electrical Engineering and Computer Science at National Taiwan University (NTU). This year's summit brought together over 60 participants, including more than 20 deans and senior academic leaders from top engineering institutions across 7 countries and regions, alongside esteemed representatives from 12 Taiwanese universities and organizations. Over two days of in-depth academic exchange, distinguished scholars, policymakers, and research leaders convened to explore the evolving landscape of engineering education, innovation ecosystems, and international collaboration.

Since its inaugural event at the National University of Singapore in 2010, AEDS has served as a vital platform for engineering deans across Asia to engage in meaningful dialogue and strategic cooperation. The summit has since been hosted by leading institutions across the region, including the Chinese University of Hong Kong (2012), Yonsei University (2013), Peking University (2014), National University of Singapore (2015), Zhejiang University (2016), University of New South Wales (2017), Tokyo Institute of Technology (2018), National Taiwan University (2019), University of Hong Kong (2023), and the Indian Institute of Science, Bengaluru (2024). AEDS was paused from 2020 to 2022 due to the COVID-19 pandemic.

In response to the accelerating pace of global change and technological advancement, the theme of AEDS 2025 was “Reinventing Engineering for the Future.” This theme reflects the collective mission of participating institutions to reshape engineering through cutting-edge research, transformative education, and robust academic–industry partnerships. The summit agenda focused on four key areas central to this transformation:

1. Front-end Research: breakthrough discoveries and interdisciplinary innovations driving future engineering;
2. Education: integrative teaching practices, soft skills development, and lifelong learning promotion;
3. Applied Research & Industry Linkage: successful university–industry collaboration models and commercialization pathways;
4. AI & Semiconductor: transformative roles of artificial intelligence and semiconductor technology in engineering, with an emphasis on scalability and sustainability.

Together, these themes framed a summit filled with inspiring discussions, shared visions, and new collaborative prospects for the next era of global engineering education.

Session Highlights

1. Keynote Speech 1

● Professor Ping-Cheng Yeh

Deputy Minister, Ministry of Education, Taiwan

Professor, Department of Electrical Engineering, National Taiwan University

“Engineering the Future: Taiwan’s Higher Education Reform and AI Talent Strategy”

Prof. Yeh presented Taiwan’s national strategy to reshape higher education for the AI-driven era. Key focuses included cross-disciplinary curriculum integration, flexible learning pathways, and government-funded initiatives aimed at fostering innovation and cultivating globally competitive AI talent. The address emphasized the importance of international academic collaboration in sustaining an AI ecosystem.

2. Education

● Professor Akinori Ito

Dean, Graduate School of Engineering, Tohoku University, Japan

“ Industry-Academia Collaboration through Entrepreneurship Education in Tohoku University”

Prof. Ito introduced a multi-level entrepreneurship framework spanning foundational education to real-world startup support. Tohoku University’s initiatives foster innovation through structured guidance and international partnerships, with a robust ecosystem of venture funds, incubators, and global academic alliances.

● Professor Jin Ho Chang

Dean, College of Transdisciplinary Studies, Daegu Gyeongbuk Institute of Science and Technology (DGIST), Korea

“Transformative Teaching at DGIST: Undergraduate Group Research Program”

Prof. Chang showcased DGIST’s Undergraduate Group Research Program (UGRP), which emphasizes convergence learning, interdisciplinary teamwork, and real-world application. Several student projects have led to award-winning startups, exemplifying the program’s emphasis on innovation and experiential education.

● Professor Suvarn S. Kulkarni

Dean of Academic Programs, Indian Institute of Technology Bombay, India

“Holistic, Flexible, and Multidisciplinary Education at IIT B”

Prof. Kulkarni highlighted IIT Bombay’s dynamic curriculum design, which allows students to combine majors, minors, and electives across disciplines. Programs like Makerspace and Design Thinking encourage innovation, while support systems offer academic guidance, wellness services, and lifelong learning through credit banking.

3. Keynote Speech 2

- **Professor Pei-Zen Chang**

Dean, College of Design and Innovation (D-School), National Taiwan University

“From Engineering to Impact: Transdisciplinary Practice through Innovation Education”

Prof. Chang emphasized the role of transdisciplinary design in addressing societal challenges. NTU’s D-School integrates design thinking and community-engaged learning, empowering students to co-create with industry and society.

4. Applied Research and Industrial Linkage

- **Professor Hon Ki Tsang**

Dean, Faculty of Engineering, The Chinese University of Hong Kong

“Silicon Photonics: A Transition from University Research to Industry”

Prof. Tsang described the evolution of CUHK’s silicon photonics research and its transition into commercial applications through the spin-off OptiHK. He highlighted the role of long-term research investment and public-private funding in bridging academia and industry.

5. Keynote Speech 3

- **Professor Jia-Yush Yen**

President, National Taiwan University of Science and Technology (NTUST), Taiwan

“Quality Assurance of Engineering Education for the Future: A Taiwan Perspective”

Prof. Yen elaborated on Taiwan’s outcomes-based accreditation framework led by IEET. His address emphasized aligning educational outcomes with international benchmarks (e.g., the Washington Accord), integrating sustainability and SDGs, and enhancing student mobility and global employability.

6. AI and Semiconductor

- **Professor Tzi-Dar Chiueh**

Dean, Graduate School of Advanced Technology, National Taiwan University

“Taiwan’s Chip-Based Industry Innovation Initiative”

Prof. Chiueh shared Taiwan’s strategic direction for chip innovation, focusing on vertical integration and AI hardware development. He stressed talent cultivation, ecosystem resilience, and cross-sector collaboration as drivers of global competitiveness.

- **Professor Chi-Sheng Shih**

Director, Center for Artificial Intelligence and Advanced Robotics, National Taiwan University

“Large Machine Learning Models on Tiny Devices”

Prof. Shih introduced SRAM-based computation-in-memory (CIM) chips optimized for low-power AI inference. He illustrated practical use cases such as smart city navigation and emphasized performance trade-offs on edge devices.

- **Professor Jiun-Haw Lee**

Associate Vice President for International Affairs; Director, Global Undergraduate Program in Semiconductors (GUPS), National Taiwan University

“Degree and Non-Degree Semiconductor Programs for International Students in National Taiwan University”

Prof. Lee presented NTU’s international semiconductor education portfolio, including GUPS, STIPT, and TESSIP. These programs offer immersive, English-taught training integrated with site visits to TSMC, Mediatek, and other leading industry partners.

7. Front-End Research

- **Professor Vita Pi-Ho Hu**

Professor, Department of Electrical Engineering, National Taiwan University

“Memory Innovation through Emerging Device Technologies”

Prof. Hu presented cutting-edge developments in SRAM architecture using CFET and 2D materials. Her work demonstrates significant advances in energy efficiency, read latency, and scaling potential for AI and HPC workloads.

- **Professor Satyam Suwas**

Dean, Division of Mechanical Sciences, Indian Institute of Science (IISc), India

“Examples of Cutting-Edge Research from the Indian Institute of Science”

Prof. Suwas highlighted interdisciplinary breakthroughs at IISc, spanning materials science, energy systems, and biomedical mechanics. His talk emphasized foundational science as a cornerstone of applied technological innovation.

- **Professor Hong K. Lo**

Dean, School of Engineering, The Hong Kong University of Science and Technology

“Development of Low-Altitude Economy”

Prof. Lo introduced the concept of a low-altitude economy (LAE), exploring drone logistics, eVTOLs, and urban air mobility. His analysis included regulatory frameworks, infrastructure planning, and case studies from the Greater Bay Area.

8. Future Outlook

- **Professor Mao-Hsiung Chiang**

Dean, College of Engineering, National Taiwan University

- **Professor Tzong-Lin Wu**

Dean, College of Electrical Engineering and Computer Science, National Taiwan University

Closing Remarks

Prof. Chiang and Prof. Wu concluded the summit by highlighting the significance of cross-regional collaboration and reaffirming the shared mission of reimagining engineering for future generations.

● **Professor Hoe Joon Kim**

Associate Vice President for Global Engagement, Daegu Gyeongbuk Institute of Science and Technology (DGIST), Korea

“Introduction to AEDS 2026”

Prof. Kim introduced DGIST as the host of AEDS 2026 and outlined its alignment with GEDC 2025. He extended a warm invitation to Daegu and emphasized expanding global partnerships through academic innovation.

Laboratory Tours

May 20, 2025 15:10–17:20

1. B119 – Robotics Implementation Lab

A platform for hands-on experimentation in autonomous systems and intelligent robotics, supporting research in mechatronics, control systems, and AI integration.

2. B113 – HIWIN Innovation and Implementation Center

A joint university–industry facility for smart manufacturing and precision automation, where students and researchers collaborate on real-world industrial solutions.

3. B109 – Creative Maker Classroom

A multidisciplinary innovation space equipped for digital fabrication, design thinking, and prototype development, fostering creativity across engineering and design fields.

4. Spectra 300 Advanced Electron Microscope Laboratory

Home to one of Taiwan’s most advanced characterization tools—featuring a double Cs-corrector STEM—enabling atomic-resolution imaging for materials science and nanotechnology.

5. Make Reality Space

A hybrid environment that merges virtual modeling and physical prototyping to support immersive product development, rapid iteration, and cross-field collaboration.

6. Nano-Electro-Mechanical-Systems (NEMS) Research Center

Dedicated to research at the intersection of nanotechnology, electronics, and mechanical systems. The center advances microscale and nanoscale device fabrication for applications ranging from biomedical sensing to quantum computing.