



University : National Chin-Yi University of Technology  
Country : Taiwan  
Web Address : www.ncut.edu.tw

## [SDGs 17] Partnership for the Goals 全球夥伴

### [17.3.17] Please indicate if your university publishes progress against SDG17?

National Chin-Yi University of Technology (NCUT) has actively pursued global partnerships to advance sustainability, innovation, and cross-cultural education. Key collaborations include:

#### A. Global Partners

##### (A) World's Top 2% Scientists

Several of NCUT's esteemed faculty members have been ranked among the World's Top 2% Scientists, as recognized by Stanford University's global database. This ranking reflects both annual research impact and lifetime scientific influence, based on citation metrics across disciplines.

This achievement highlights the international visibility of NCUT's research output and demonstrates the high-caliber expertise of its faculty in fields such as precision machinery, green energy, advanced materials, and automation. These recognitions not only elevate NCUT's reputation in global academia but also strengthen its role as a trusted partner in international collaborations.

Through such globally acknowledged expertise, NCUT provides credibility and thought leadership in its joint projects with:

- **European partners** (e.g., Czech Jihlava Institute of Technology, Germany's OPEN MIND Technologies),
- **Southeast Asian institutions** (Thailand, Philippines, Indonesia),
- **multinational companies** (Siemens, Panasonic, etc.).

By integrating faculty excellence with institutional partnerships, NCUT fosters impactful knowledge transfer, collaborative research, and talent development aligned with **SDG 17: Partnerships for the Goals**.

##### (B) German Alliance of Applied Sciences (HAWtech) and TAItch Collaboration

The German Alliance of Applied Sciences (HAWtech) was established in 2009 and includes six leading universities of applied sciences: Aachen, Berlin, Darmstadt, Dresden, and Esslingen. Recognizing the importance of global collaboration in applied sciences, in 2017 HAWtech joined forces with the Taiwan University Alliance for Applied Sciences (TAItch), of which NCUT is a founding member.

The **HAWtech-TAItch Alliance** focuses on:

- **Bilateral Exchange Programs** – creating pathways for students from Taiwan and Germany to gain cross-cultural learning and industry experience.



- **Summer Schools** – co-organized intensive academic programs that foster innovation, applied research skills, and multicultural teamwork.
- **Collaborative Research** – joint projects in fields such as advanced manufacturing, renewable energy, and smart technology, aligning with sustainable development priorities.

This strategic alliance strengthens NCUT's role as a bridge between Taiwan and Europe in applied science education and research. It enables NCUT's faculty and students to integrate global best practices, expand their international perspectives, and cultivate high-quality talent for the global workforce.

### (C) Memorandum of Understanding (MOU) with the College of Polytechnics Jihlava (VSPJ), Czech Republic

To expand its international academic influence, NCUT signed a Memorandum of Understanding (MOU) with the College of Polytechnics Jihlava (VSPJ) in the Czech Republic. This agreement represents a significant step in strengthening NCUT's global engagement and academic collaboration.

The MOU includes:

- **Faculty and Student Exchanges** – providing opportunities for cross-border learning, cultural enrichment, and the development of global competencies.
- **Teacher Interactions** – fostering professional dialogue and knowledge-sharing between educators from both institutions.
- **Laboratory Collaborations** – supporting joint research, technical training, and access to specialized facilities.

Through these initiatives, students from both universities gain valuable cross-campus experiences, deepening cultural understanding and building long-term academic friendships. Notably, VSPJ maintains exchange relationships with over 250 universities worldwide, and this collaboration marks their first official partnership with a Taiwanese university.

This milestone not only enhances NCUT's visibility in Europe but also demonstrates its commitment to cultivating sustainable international partnerships aligned with the UN SDG 17 goal of strengthening global collaboration.

### (D) Memorandum of Agreement (MoA) with Universitas Universal, Indonesia

NCUT has signed a Memorandum of Agreement (MoA) with Universitas Universal in Indonesia, broadening its network of strategic international partnerships. This collaboration emphasizes student exchanges, academic cooperation, and industry collaborations, designed to create a more competitive and globally minded learning environment for students.

Key outcomes include:



- **Student Exchange** – Universitas Universal has selected two students to study at NCUT for one semester starting in September 2024, providing them with valuable cross-cultural experiences and enhancing their international perspectives.
- **Academic Cooperation** – Both institutions will pursue faculty interactions, curriculum enrichment, and collaborative teaching, deepening mutual academic strengths.
- **Industry Collaborations** – Joint projects will be developed with industrial partners in Taiwan and Indonesia, expanding opportunities for applied research and workforce-ready training.
- **Summer Camps** – In the future, NCUT and Universitas Universal will **co-host international summer camps**, inviting high school students from both countries to participate in cultural exchange and learning activities, strengthening educational and people-to-people ties from an early stage.

This MoA demonstrates NCUT's commitment to strengthening regional partnerships in Southeast Asia and advancing the UN SDG 17: Partnerships for the Goals, ensuring that collaboration fosters global competencies, innovation, and sustainable growth.

#### (E) Visit and MOU Signing with the University of the Cordilleras and Cagayan State University, Philippines

To strengthen global partnerships and foster the exchange of knowledge and expertise, NCUT signed a Memorandum of Understanding (MOU) with both the University of the Cordilleras and Cagayan State University in the Philippines.

#### Key highlights include:

- **Strengthened Cooperation** – The MOUs focus on building friendly and mutually beneficial collaboration between NCUT and its Philippine partners, expanding academic cooperation in teaching, research, and cultural exchange.
- **Taiwan Experience Education Program (TEEP)** – In August 2024, Cagayan State University will recommend outstanding students to participate in TEEP at NCUT. This initiative offers Filipino students hands-on learning and cross-cultural experiences in Taiwan, while promoting Taiwan's strengths in applied sciences and technology education.
- **Academic and Cultural Exchange** – The partnership encourages faculty and student exchanges, joint programs, and opportunities for collaborative projects, enhancing mutual understanding and long-term ties between Taiwan and the Philippines.

This initiative marks a significant milestone in NCUT's Southeast Asia engagement strategy, reinforcing its commitment to the United Nations SDG 17: Partnerships for the Goals by creating inclusive, equitable, and sustainable opportunities for education and research cooperation.



## (F) Kyushu Institute of Technology and Saga University Faculty and Students Attend International Winter Camp at NCUT

A team of faculty and students from Kyushu Institute of Technology and **Saga University** in Japan participated in a three-day international winter camp at NCUT, marking a milestone in trilateral academic exchange.

### Highlights of the Winter Camp:

- **Hands-On Laboratory Collaboration** – Students were grouped into NCUT’s specialized laboratories based on their fields of study. They engaged in collaborative research projects, exchanged ideas with NCUT professors and peers, and presented their findings, fostering mutual learning and innovation.
- **Academic and Cultural Exchange** – Beyond technical collaboration, the program promoted vibrant cross-cultural interactions, allowing Japanese and Taiwanese students to broaden their perspectives and strengthen international friendships.
- **Showcasing Creativity & Professionalism** – Participants demonstrated strong problem-solving skills by applying new technologies to real-world challenges, reinforcing the camp’s role as both an academic and professional development platform.

### Positive Feedback from Participants:

A Vietnamese doctoral student in Power Mechanical Engineering at Saga University praised NCUT’s Department of Mechanical Engineering for its strong industry-university integration, modern facilities, and research environment. They also noted the hospitality of NCUT faculty and students, as well as the dynamic campus culture in Taiwan.

This winter camp not only provided valuable research-based training but also strengthened long-term ties between NCUT and its Japanese partners. It laid a solid foundation for future collaboration in joint research, academic mobility, and international student engagement, directly supporting SDG 17: Partnerships for the Goals.

## (G) International Research Center for Japanese Studies [College of General Education]

The International Research Center for Japanese Studies at NCUT serves as a vital platform for Taiwan-Japan academic collaboration, with a particular emphasis on legal research and interdisciplinary integration.

### Key Contributions:

- **Focus on Taiwan-Japan Legal Studies** – The center prioritizes comparative legal studies, offering an interdisciplinary approach that bridges law, culture, and education.



- **Academic Collaboration** – It actively cooperates with both domestic and international institutions to organize conferences, symposia, and academic exchanges, strengthening NCUT’s visibility and competitiveness in the global arena.
- **Resource Integration** – By consolidating NCUT’s existing Japanese-related research and teaching resources, the center provides a comprehensive academic base that supports both teaching and research excellence.

#### Strategic Goals:

- To expand NCUT’s international footprint in Japanese studies.
- To build long-term academic networks with institutions specializing in Japanese research, both in Taiwan and abroad.
- To promote cross-disciplinary collaboration, enriching NCUT’s educational offerings and enhancing student and faculty engagement with Japanese scholarship.

This initiative contributes directly to SDG 17: Partnerships for the Goals, by fostering international academic exchange, enhancing institutional competitiveness, and positioning NCUT as a key hub for Japanese studies in Taiwan.

#### (H) Yunus Social Business Center (YSBC) 2024 Joint Meeting [YSBC]

On March 18, 2021, NCUT signed a virtual agreement with Nobel Peace Laureate Dr. Muhammad Yunus, becoming the 89th university worldwide to establish a Yunus Social Business Center (YSBC). In 2024, NCUT YSBC actively participated in the YSBC Global Joint Meeting, advancing Dr. Yunus’s Three-Zero Vision:

- **Zero Net Carbon Emissions**
- **Zero Poverty**
- **Zero Unemployment**

#### Key Contributions:

- **Student Innovation for Social Good** – NCUT encourages students to apply innovative thinking and entrepreneurial skills toward developing social business models that tackle urgent issues such as climate action, poverty alleviation, and inclusive employment.
- **Social Enterprise Development** – The YSBC provides a platform for cross-disciplinary collaboration, supporting students and faculty to turn creative ideas into scalable social enterprises with both local and global impact.
- **Global Networking** – Through the Joint Meeting, NCUT connects with over 90 YSBCs worldwide, exchanging best practices and fostering collaborative research and projects that contribute to sustainable social transformation.



## Impact for Taiwan:

This initiative has strengthened NCUT's role as a pioneer in higher education-driven social innovation. By integrating the UN Sustainable Development Goals with Yunus's vision, NCUT YSBC helps cultivate young leaders committed to creating a better, fairer, and more sustainable society.

### (I) The 2024 Taiwan Youth Film and Television Culture Experience Camp

The "Taiwan Youth Acting at Hengdian World Studio" event officially took place at Hengdian World Studios in Zhejiang, China, as part of the "Golden Taiwan Hand-in-Hand Dream, Entering Hengdian Across China" 2024 Taiwan Youth Film and Television Culture Experience Camp.

#### Purpose and Goals

This program aimed to promote cross-strait film and television cultural exchanges, enabling Taiwanese youth to gain first-hand insights into mainland Chinese TV drama production. By participating in real filming processes, students and young media professionals from Taiwan gained a deeper appreciation of the artistry, discipline, and collaborative spirit required in the industry.

### (J) NCUT Student Participation

Students from NCUT's Department of Industrial Engineering and Management took part in the filming, experiencing the challenges and joys of working on set. They not only learned about the daily life of actors but also discovered the complexity of behind-the-scenes professions—including directing, production design, lighting, and stage management.

## Outcomes and Impact

- Enhanced cross-strait cultural understanding by immersing Taiwanese youth in the filming environment of popular Chinese dramas.
- Strengthened appreciation for teamwork, highlighting how high-quality productions rely on the collective effort of multiple disciplines.
- Provided NCUT students with a unique learning experience that blended culture, creativity, and practical problem-solving.

This overseas camp experience injected new vitality into cross-strait cultural dialogue, broadened horizons for NCUT students, and demonstrated how cultural exchanges can serve as a bridge to mutual understanding and shared creativity.

## B. National Partners

### (A) Local Revitalization in Malaysia [Department of Business Administration]

#### Program Overview

Through collaboration with Townway Cultural and Creative Co., Ltd., NCUT's Department of Business Administration established the "Sehari Sunlight Base" in the New Village of Pasir Pinji, Ipoh. This



initiative supports Malaysia's P LAB Local Revitalization Laboratory Co., focusing on cultural preservation and community revitalization.

### Key Initiatives

- **Cultural Preservation:** Revived the long-neglected “Dragon and Lion Culture” (including lion dance troupes and traditional workshops) by curating exhibitions, hosting creative workshops, and developing experiential activities that allow residents and visitors to rediscover Ipoh's cultural heritage.
- **Tourism Development:** Optimized P LAB's Old Town Ipoh tour guides and trilogy series, while translating the historical and cultural DNA of the New Village of Pasir Pinji, helping to present the area's stories to both local and international audiences.
- **Student Immersion:** To help interns adapt quickly to Malaysia's multicultural lifestyle, NCUT guided students through Little India in Ipoh, where they experienced traditional banana leaf meals. Students also learned to navigate daily life using local apps like Grab, ordering street food, and purchasing ingredients from local vendors.

### Impact on Students and Communities

This program enriched students' cross-cultural experiences, enabling them to apply professional knowledge while supporting community-based revitalization projects. Under the mentorship of Malaysian teachers and local experts, students gained new perspectives, cultural sensitivity, and tolerance in a diverse equatorial society.

### Long-term Vision

By integrating academic expertise with cultural preservation and local engagement, NCUT hopes its students will channel what they learned into transformative energy that benefits not only the community of Ipoh but also their own personal growth and future careers.

### (B) Love in Chiang Rai – Overseas Volunteer Service Camp

For the past ten years, NCUT's Service Group has consistently organized the “Love in Chiang Rai – Overseas Volunteer Service Camp” at Dezhong Elementary School in Chiang Rai, Thailand. This long-standing program exemplifies NCUT's dedication to fostering international goodwill and community service beyond Taiwan.

### Activities and Contributions

- **Educational Support:** Volunteers provide children with essential academic knowledge, tailored to local needs, while also introducing them to Chinese language learning.
- **Cultural Exchange:** By bridging Taiwan and Northern Thailand, the program fosters mutual understanding and friendship between communities.



- **Sustainable Impact:** Even if future on-site service opportunities become limited, the foundation laid through Chinese instruction ensures children can continue to benefit from a skill that will serve them in their educational and professional futures.

## Impact and Vision

This decade-long commitment not only enriches the lives of children in Chiang Rai but also inspires NCUT students to carry forward the spirit of service and cultural empathy. The hope is that as these children grow, they will “pass on the love” to other communities in need, creating a ripple effect of compassion and empowerment.

## (C) International Symposium on Advances in Abrasive Technology (ISAAT)

The International Symposium on Advances in Abrasive Technology (ISAAT) is a prestigious academic forum organized by the Japan Society of Abrasive Technology (JSAT) and the International Committee on Abrasive Technology (ICAT). It brings together global leaders in abrasive and precision manufacturing to discuss state-of-the-art innovations.

## NCUT’s Hosting Role

In 2023, the Taiwan Society of Abrasive Technology (TSAT), with strong support from NCUT, successfully won the bid to host ISAAT 2023 in Taiwan. This marked an important milestone for Taiwan’s precision manufacturing sector and reinforced NCUT’s international research standing.

## Highlights of the Symposium

- **Renowned Scholars and Industry Experts:** The event attracted leading researchers, professors, and industry specialists from across the globe, gathering in Taichung to exchange knowledge.
- **Cutting-Edge Topics:** Presentations and panel discussions focused on precision processing, advanced abrasive technologies, and industrial applications relevant to global sustainability and innovation.
- **Industry-Academia Integration:** The symposium provided an excellent platform for collaborative exchanges between academia and industry, facilitating new research opportunities and strengthening Taiwan’s international visibility in the field.

## Impact and Significance

ISAAT 2023 not only showcased NCUT’s academic leadership in precision manufacturing but also fostered international partnerships that contribute directly to **SDG 17 (Partnerships for the Goals)**. Through this global seminar, NCUT successfully enhanced its research impact, created opportunities for joint R&D projects, and provided students and faculty with exposure to the frontiers of advanced manufacturing technologies.



## (D) 2024 National Conference on Hydrogen Energy and Fuel Cells (HEFC 2024)

The National Conference on Hydrogen Energy and Fuel Cells (HEFC) is Taiwan's premier platform for advancing research and innovation in hydrogen energy. In 2024, NCUT's Department of Refrigeration, Air Conditioning, and Energy Engineering partnered with the Taiwan Association for Hydrogen Energy and Fuel Cell (THEFC) and the Taiwan Association of Energy Service Companies (TAESCO) to co-host the 19th National Conference on Hydrogen Energy and Fuel Cells alongside the 16th National Hydrogen Energy and Fuel Cell Vehicle Competition.

### Academic and Research Focus

The conference emphasized both technological innovation and talent cultivation, strengthening Taiwan's foundation in hydrogen energy R&D, application research, technological development, and commercialization. Scholars, industry experts, and young researchers from Taiwan and abroad convened to discuss breakthroughs in hydrogen energy systems, highlighting its role in achieving smart green energy and supporting Taiwan's net-zero transition.

### International Participation

Notable international experts were invited to provide a global perspective:

- **Professor Jon Clipsham (UK)** shared the latest challenges and opportunities from Scotland's national hydrogen projects.
- **Dr. Lina Troskialina (Indonesia)** discussed the development of hydrogen fuel cells and applications in Indonesia.
- Their participation highlighted Taiwan's role in the global hydrogen energy dialogue and encouraged cross-border research collaborations.

### Hydrogen Vehicle Competition

A key highlight was the 16th National Student Cup Hydrogen Energy Vehicle Competition, held at the Automotive Research and Testing Center (ARTC), Changhua Coastal Industrial Park. Six teams competed nationwide. NCUT achieved outstanding results:

- **"H2O Racing" team – 2nd place** in both dynamic and static categories.
- **"CHIN-YI Hydrogen Wing 2" team – Honorable Mention** in both categories + Best Dynamic Spirit Award.

These achievements demonstrated NCUT students' technical expertise, creativity, and maturity in hydrogen vehicle development, enhancing NCUT's reputation as a leader in green energy innovation.

### Impact and Significance

HEFC 2024 served as a crucial platform for government-industry-academia collaboration, fostering innovation and shaping Taiwan's hydrogen energy roadmap. NCUT's dual role as both a co-organizer and competitor showcased its strength in research, education, and application of hydrogen technologies, directly advancing **SDG 7 (Affordable and Clean Energy)**, **SDG 9 (Industry, Innovation, and Infrastructure)**, and **SDG 17 (Partnerships for the Goals)**.



## (E) 2024 20th International Conference and Annual Meeting of the Operations Research Society of Taiwan & the 21st Management Academic Symposium

In 2024, NCUT's College of Management and Department of Distribution Management co-hosted the 19th International Conference and Annual Meeting of the Operations Research Society of Taiwan (ORSTW) together with the 21st Management Academic Symposium. This major academic event brought together scholars, experts, and professionals dedicated to advancing theoretical research and practical applications in operations research and management.

### Conference Goals

The primary objectives were to:

- Share achievements in theoretical development and application practices.
- Promote the integration of smart technology in management, innovation, and R&D.
- Explore future trends in business and management education.
- Enhance horizontal connections among universities of science and technology and encourage deeper collaboration between academia and industry.

### Academic Highlights

The conference featured rigorous academic exchanges and active participation from both scholars and industry representatives. Keynote speeches provided intellectual stimulation and global insights:

- Dr. Weerapon Thongma, President of Maejo University, Thailand delivered a keynote on regional innovation and higher education's role in sustainability.
- Professor Zhe George Zhang, Western Washington University, USA, shared advanced research perspectives in operations research and its practical applications.

Scholars presented innovative research papers addressing applications of smart technology in management, highlighting how R&D and innovation can reshape industrial practices. The sessions provided a robust platform for teachers, students, and industry professionals to exchange knowledge and experiences.

### Impact and Significance

The dual conference succeeded in fostering industry-government-academia collaboration, enhancing NCUT's reputation as a hub for cutting-edge management research. By uniting international and domestic experts, NCUT strengthened its role in bridging theory with practice and ensuring that management research contributes to industrial competitiveness and innovation.

This event directly supported **SDG 9 (Industry, Innovation, and Infrastructure)** and **SDG 17 (Partnerships for the Goals)** by fostering innovation-driven collaboration and global academic partnerships.



## C. International Exhibition of Inventions

### (A) 75th iENA 2023, Nuremberg

The iENA International Trade Fair "Ideas – Inventions – New Products" held in Nuremberg, Germany, is one of the world's most prestigious platforms for showcasing innovative technologies. Celebrated for its rigorous and impartial judging, the fair provides inventors and institutions the opportunity to present cutting-edge products to an international audience of investors, industries, and research institutions.

#### NCUT Achievements

In 2023, NCUT achieved a record-breaking performance at the 75th iENA, earning two gold medals and four bronze medals. This outstanding achievement highlighted NCUT's strength in integrating academic research with practical innovation and further enhanced its international reputation in applied R&D.

#### Award-Winning Inventions

The award-winning projects covered a wide spectrum of applications, ranging from healthcare to sustainable packaging and consumer product innovation.

#### NCUT's Awards from the 2023 iENA Nuremberg – International Trade Fair

Award	Title
Gold	Smart Toilet Detection Device
Gold	Leak-Proof Easy-Open Beverage Container
Bronze	Leak-Proof, Fully Biodegradable Food Container
Bronze	Pineapple Peeling and Slicing Packaging Machine
Bronze	Medical Digital Tool for Physiological Big Data Monitoring, Remote Transmission, Analysis, Real-Time Monitoring, and Feedback System
Bronze	Portable Refrigerated and Frozen Cabinet with Adjustable Space and Multifunctionality

#### Impact and Significance

NCUT's success at iENA underscores its ability to transform research outcomes into market-ready solutions, showcasing the university's strong emphasis on industry-academia collaboration. These awards not only bring international visibility but also attract potential partnerships for commercialization and technology transfer.



Furthermore, the participation aligns with **SDG 9 (Industry, Innovation, and Infrastructure)** and **SDG 17 (Partnerships for the Goals)**, as it demonstrates NCUT’s global competitiveness in innovation and strengthens its connections with international industries and research organizations.

### **(B) The Seoul International Invention Fair (SIIF 2023)**

The Seoul International Invention Fair (SIIF), organized by the Korea Invention Promotion Association, is one of Asia’s most significant platforms for innovation. It provides inventors with opportunities to showcase creative technologies, exchange ideas with global participants, and attract potential commercial collaborations.

### **NCUT Achievement**

At SIIF 2023, Professor Pu Wen-cheng and his team from the Department of Electrical Engineering received a Gold Medal for their invention, the “Power Data Communication System.” This award recognized the breakthrough nature of the research and the system’s potential impact on automation and smart industry development.

### **Award-Winning Invention: “Power Data Communication System”**

- Introduces a new motor structure called the “Smart Motor,” which differs fundamentally from traditional Power Line Carrier Technology (PLC).
- Combines power supply and communication capabilities on the same lines.
- Employs Power Frame Technology to build a power-based Internet of Things (IoT) network that supports the operation of “Smart Motors.”
- Enables robotic arms to operate on a two-power-line structure, allowing for unlimited serial connection of motors.
- Expands the dimensions and functionalities of robotic arms, making them more flexible and efficient for automation applications.

### **Impact and Significance**

The invention received high praise from international judges, demonstrating NCUT’s leadership in developing next-generation motor technologies that integrate automation, IoT, and advanced communication systems. By redefining the way robotic arms and motors can be powered and controlled, the system contributes to the evolution of smart manufacturing and enhances Taiwan’s role in global innovation.

This achievement aligns with:

- **SDG 9 (Industry, Innovation, and Infrastructure)** — advancing smart industrial technology.
- **SDG 17 (Partnerships for the Goals)** — showcasing NCUT’s innovations on the international stage, creating opportunities for global collaboration.

### (C) EUROINVENT 2024 in Romania

The European Exhibition of Creativity and Innovation (EUROINVENT), held annually in Romania, is one of Europe’s most prestigious platforms for showcasing academic research and applied innovation. It attracts universities, research institutions, and enterprises from across the globe, providing an international stage to highlight inventive breakthroughs and foster cross-border collaboration.

#### NCUT Achievement

At EUROINVENT 2024, NCUT achieved outstanding results, winning three gold medals and three silver medals across diverse research domains. This performance not only underscores NCUT’s exceptional innovation capacity but also reflects its effective industry-academia collaboration model. NCUT’s projects demonstrated high technical maturity, strong application potential, and significant contributions to environmental sustainability, safety, and smart technologies.

#### Award-Winning Projects

Award	Team Professor	Title	Contribution & Impact
Gold Medal	Chen, Shao-Hsien	<i>Spindle Thermal Deformation Measuring Equipment for Machine Tools</i>	Integrates temperature and displacement sensors with fuzzy logic inference to improve spindle compensation, greatly enhancing machining accuracy.
Gold Medal	Chen, Tsung-Chia	<i>Confidential Document Recycling Method</i>	Uses water-soaking technology to destroy confidential documents while recycling pulp, achieving environmental protection and information security simultaneously.
Gold Medal	Chang, Chuan-Wang	<i>Driver Dangerous Behavior Detection System and Method Based on Object Spatiotemporal Relationships</i>	Identifies and warns drivers of risky behaviors in real time, effectively reducing traffic accidents.
Silver Medal	Li, Kuo-Yi	<i>Range Hood with Air Wall Channel</i>	Applies air wall technology to control oil fumes, reduce energy use and noise, and improve environmental hygiene.
Silver Medal	Yaur, Wei-Hurang	<i>Smart Care Devices</i>	Uses Raspberry Pi and sensor technology for real-time blood oxygen monitoring and temperature control, supporting preventive healthcare.

Silver Medal	Hsieh, Ming-Chu	<i>Plastic Recycling Mechanism for 3D Printers</i>	Converts waste plastic into reusable 3D printing material using specialized heating and material processing, advancing circular economy practices.
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### Impact and Significance

NCUT’s award-winning projects highlight its ability to combine academic research with industrial application, addressing real-world problems in manufacturing accuracy, environmental protection, smart mobility, and healthcare innovation. By winning recognition in a highly competitive European venue, NCUT continues to enhance its global visibility and strengthen international cooperation networks.

This achievement directly supports:

- **SDG 9 (Industry, Innovation, and Infrastructure):** Promoting advanced manufacturing, green technologies, and healthcare solutions.
- **SDG 12 (Responsible Consumption and Production):** Innovating in recycling and sustainable resource use.
- **SDG 17 (Partnerships for the Goals):** Building cross-border academic-industry partnerships through international recognition.

### (D) International Dragon Boat Race at the 2024 Lukang Dragon Boat Festival

The Lukang Dragon Boat Festival, held annually on the Fulu River in Changhua, is a major cultural and sporting event that attracts domestic and international teams. The dragon boat race, one of the highlights of the festival, fosters cross-cultural friendship and showcases Taiwan’s traditions to the world.

### NCUT Participation

In 2024, NCUT’s dragon boat team, “NCUT is Strong,” was composed of 20 Indonesian international students who participated in the international group competition for the first time. Despite being newcomers, the team achieved an impressive fifth place finish, demonstrating teamwork, resilience, and cultural integration.

### Cultural Experience and Impact

The Indonesian students shared that participating in the race was not only a sporting challenge but also a profound cultural experience. Beyond rowing, they engaged in traditional activities such as eating zongzi (rice dumplings) and making herbal sachets, gaining firsthand understanding of the Dragon Boat Festival’s cultural significance. They expressed heartfelt gratitude to the Office of Physical Education for providing training support and guidance during practice sessions, which made their participation possible and memorable.

### Significance



This international sports exchange exemplifies NCUT's commitment to fostering cross-cultural engagement and global friendships. Through sport, international students gained deeper integration into Taiwanese culture, while local communities experienced the vitality and enthusiasm of NCUT's diverse student body.

This initiative directly supports:

- **SDG 4 (Quality Education):** Enhancing international students' cultural learning outside the classroom.
- **SDG 10 (Reduced Inequalities):** Promoting inclusion and integration of international students.
- **SDG 17 (Partnerships for the Goals):** Strengthening international understanding and people-to-people ties through cultural sports exchanges.

### **(E) Hong Kong–Taiwan Exchange: Taichung General Knowledge and Physical Education Exchange Activity**

To strengthen cross-border educational and cultural exchanges, NCUT collaborated with Fanling Public School in Hong Kong to organize a five-day Sports Science and General Knowledge Exchange Trip in Taichung. The program combined sports, science, and cultural experiences, designed to inspire students' interest in both physical education and scientific inquiry.

#### **Participants**

The delegation consisted of 40 students (grades 3–6), teachers, and parents, led by the school's vice principal. For many participants, this trip marked their first international exchange experience, offering valuable exposure beyond Hong Kong's classrooms.

#### **Activities at NCUT and Taichung**

- **Handball Exchange:** Fanling Public School, known for its strong handball tradition, first visited Wen-Chang Primary School in Dajia District to participate in a friendly handball match and cultural interaction.
- **NCUT Campus Visit:** Students, teachers, and parents visited NCUT's laboratories and sports facilities, gaining insight into Taiwan's higher education environment.
- **Popular Science Exploration:** With the support of NCUT's Popular Science Center team, the students engaged in hands-on science activities, discovering the "infinite charm of science" through interactive experiments and demonstrations.

#### **Impact**

This exchange created opportunities for mutual learning and cross-cultural understanding. Hong Kong students deepened their knowledge of sports concepts while cultivating scientific curiosity in a real-world context. For NCUT, the event showcased its strengths in sports science education and community engagement, highlighting its role as a bridge between Taiwan and international partners.

#### **Significance**

The program not only promoted sportsmanship and academic enrichment, but also:

- Strengthened regional partnerships in education.
- Fostered youth cultural exchange between Taiwan and Hong Kong.
- Supported **SDG 4 (Quality Education)** by expanding learning beyond classrooms.
- Advanced **SDG 17 (Partnerships for the Goals)** through international cooperation in youth education and sports.

## A. Global Partners

### (A) World's Top 2% Scientists

Several of our esteemed faculty members have been listed among the World's Top 2% of Scientists and on the lifetime scientific influence rankings, showcasing the outstanding contributions and international recognition of NCUT's research in academia.



between Taiwan and Germany.



▲ Visit from HAWtech Alliance Faculty and Students



▲ Signing of the MoU Between NCUT and VSPJ



▲ NCUT Signed a MoA with Universitas Universal in Indonesia

### (E) Visit and MOU Signing with the University of the Cordilleras and Cagayan State University, Philippines

To develop global partnerships and share knowledge and expertise, NCUT has signed an MOU with the University of the Cordilleras and Cagayan State University in the Philippines. This MOU aims to further deepen the friendly and mutually beneficial cooperation between the two institutions.

In August 2024, Cagayan State University will recommend outstanding students to participate in the Taiwan Experience Education Program (TEEP) at NCUT, enhancing educational partnerships and promoting academic exchanges.



▲ Introducing NCUT to Visiting Philippine Delegates



▲ Philippine Delegates Touring the Machine Tool College Building



▲ MOU Signing Ceremony with the University of the Cordilleras and Cagayan State University



▲ NCUT Participation in the 2024 YSBC Joint Meeting

### (C) Love in Chiang Rai – Overseas Volunteer Service Camp

NCUT's Service Group has been organizing the "Love in Chiang Rai – Overseas Volunteer Service Camp (Dezhong Elementary School, Chiang Rai, Thailand)" for 10 years. We offer children at Dezhong Primary School not only academic knowledge but also the opportunity to learn Chinese, spreading love to Northern Thailand. Even if future opportunities to serve in this area are limited, children can continue to learn Chinese, making it a valuable skill for their future. We hope that as they grow, they can pass on this love to other places in need.



▲ Caring for Underprivileged Families in the Community



▲ Chinese Language Teaching



▲ 16<sup>th</sup> National Student Cup Hydrogen Energy Vehicle Competition

▲ HEFC 2024