



University : National Chin-Yi University of Technology
Country : Taiwan
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[SDGs 17] Partnership for the Goals 全球夥伴

[17.3.9] Please indicate if your university publishes progress against SDG9?

Driving Innovation at NCUT

National Chin-Yi University of Technology (NCUT) is committed to fostering an **innovative culture** that integrates cutting-edge technology, research, and entrepreneurship to empower students and industries. Through collaborative partnerships, research initiatives, and state-of-the-art facilities, NCUT encourages students and faculty to develop **practical solutions** for real-world challenges. The university's focus on **innovation ecosystems** enables a seamless transfer of knowledge and technology between academia, industry, and society.

A. Innovation Incubation Center

The innovation incubation space at NCUT was inaugurated in 2018 and is situated on the fifth floor of the Machine Tool College Building, spanning an area of 208 ping. This space accommodates approximately 5-10 physical manufacturers. The objective of this space is to facilitate industry transformation with the support of the school, leveraging the abundant research and development (R&D) resources within academic circles to benefit small and medium-sized enterprises (SMEs).

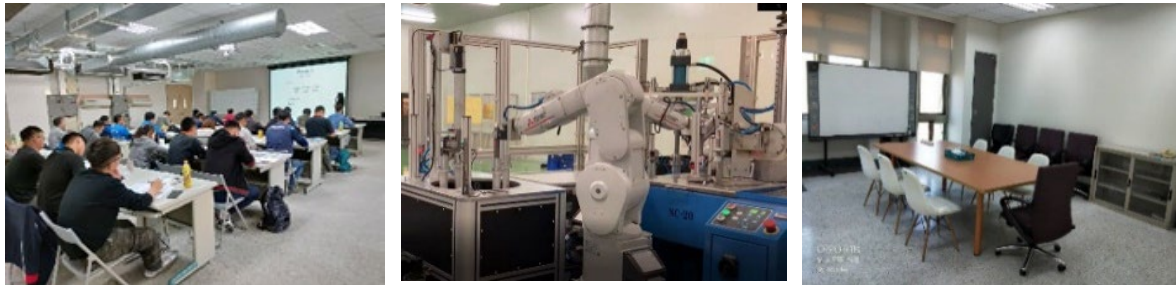
Through collaboration with NCUT, SMEs can tap into the R&D expertise and energy available in academic circles, thereby identifying opportunities for corporate operations and R&D upgrading. Furthermore, enterprises can receive guidance to secure relevant subsidies from ministries and government commissions.

Teachers are encouraged to actively participate in practical studies. Leveraging the innovation incubation center channels established by NCUT, they can closely collaborate with industrial and commercial sectors to undertake new product R&D and innovation, thereby contributing to practical studies.

Incubation Center Achievement:

From 2021 to the end of July 2023, a total of 5 manufacturers have been stationed in the innovation incubation space of NCUT, with full occupancy. These manufacturers have continued to collaborate with the school on industry-university research and development initiatives. As part of

the innovation incubation cooperation project, the manufacturers have collectively invested a total of 4.74 million yuan. This investment has been utilized to integrate resources from both the school and the industry, strengthening the mutual competitiveness of both schools and enterprises. Please refer to the following Figure for further details on this achievement.



Innovation Incubation Center

B. Invention Exhibitions

Selecting representatives of outstanding patented works to participate in international invention exhibitions is essential to enhance international visibility. These exhibitions include the Archimedes Invention Exhibition in Moscow, Russia, the Nuremberg Invention Exhibition in Germany, the Seoul Invention Exhibition in South Korea, and the Taiwan Innovation Technology Expo, among others.

Please refer to the below Table for a list of selected patented works and their representatives. Additionally, refer to the following Figure for a visual representation of their participation in these international exhibitions.

Table International Invention Exhibition Awards

Year	2021	2022	Jan-Jul, 2023
Gold	12	8	4
Silver	13	9	2
Bronze	3	9	0
Special Award	0	3	0
Total	28	29	6



Figure Display at the International Invention Exhibition

C. Technological Transfer

Featured Technology Transfer:

To facilitate technology transfer, we propose the establishment of a manager promotion system and the formulation of a "reward method for outstanding teachers in technology transfer." This initiative aims to create a seamless communication channel between the industry and the school, continuously shaping the industry-university environment. Additionally, it seeks to assist teachers and students in materializing research and development results while encouraging teachers' willingness to transfer technology.

We actively promote special technology project plans and enhance the capacity of industry-university cooperation and technology transfer for research and development results. Through these efforts, we aim to foster a culture of innovation and collaboration, driving tangible outcomes in technology transfer.

1. Technology transfer achievements in the past three years:

Year	2021	2022	Jan-July, 2023
Number	129	125	78
Amount (NT\$)	11,198,194	12,749,598	6,553,234

D. Patents

Technology transfer patent application:

Through the school's "Key Points of R&D Achievements and Technology Transfer Management", we subsidize teachers' patent applications and promote teachers' technology transfer cases and Industry-Academia Collaboration cases.



2. Technology transfer achievements in the past three years:

Year	2021	2022	Jan-July, 2023
Number of patents approved	87	92	61

To contribute to the sustainable transformation of Taiwanese enterprises The NCUT Sustainability Development Center is gradually expanding

The **Sustainable Development Center** of National Chin-Yi University of Technology (NCUT) was established to nurture more ESG industry talents and offer corporate ESG upgrade services. Currently, apart from integrating with the French Standards Association Afnor Bell International Inspection and Certification Group, various resources from the ESG Sustainable Development Association have also been introduced. Coupled with the support and cooperation of teachers and students on campus, this has enabled the overall service capacity of the center to continuously improve. Amidst the rapid development of the center, the most pivotal figure at its core is none other than CEO Dr. Chen, Hu-Mu.

Cultivating sustainable talents capable of effectively implementing carbon inventory is a primary objective for CEO Chen, who possesses a comprehensive understanding of environmental, social, and corporate governance (ESG) aspects. He found common ground with President Chen, Wen-Yuan, who shares a vision of contributing to the sustainable transformation of industrial clusters in central Taiwan. Since the establishment of the Sustainable Development Center, corporate cases have been accumulating rapidly, and there is a growing number of teams comprising both teachers and students equipped with **carbon inventory capabilities**. Both leaders are optimistic about the future development and believe that NCUT merges as a significant source of sustainable talents in the current wave of ESG sustainability, serving as a nurturing ground for such talents.

"Currently, the market is inundated with various ESG courses, but how many of them truly guide students in writing reports that adhere to sustainable disclosure standards?" CEO Chen emphasized. Companies are increasingly concerned about issues such as carbon inventory, optimization, and trading of carbon rights. It is natural for them to feel anxious about matters like carbon tax and fee collection. In the current international landscape, sustainability is no longer merely an environmental slogan, such as "turning off lights to save polar bears," or "trying to control the Earth's average temperature within plus or minus 2 degrees Celsius," as it was in the early days. Instead, it has become a core objective closely intertwined with practical operations. As the demand for sustainability grows more urgent, but the availability of qualified talents remains limited, there is a tendency for people to seek hasty solutions in times of crisis.



NCUT's Sustainable Development Center boasts a practical and efficient carbon inventory system, along with multiple teams of teachers and students holding professional certifications. In the recent past, it has successfully guided 59 companies in completing carbon inventories and facilitated 20 companies in completing energy inventories. Remarkably, all these cases have received subsidies from the central government, making them exemplary instances of painless and sustainable transformation.

Given this success, CEO Chen also recommends that companies or organizations grappling with "carbon anxiety" seek assistance from educational institutions like NCUT. This collaboration can help them avoid common pitfalls, while simultaneously providing valuable training opportunities for students. By working together in the implementation field, they can contribute to the creation of more talents essential to various industries.

Working together towards the goal of carbon neutrality

Talents capable of effectively implementing carbon inventory are in high demand. If they can produce an ESG sustainability report that meets international standards, many companies will undoubtedly vie for their expertise. CEO Chen emphasized that the current sustainable transformation across various industries will progress through two stages. The initial stage involves conducting a carbon footprint inventory to thoroughly understand the extent of carbon emissions produced by the entire company. The subsequent stage focuses on planned carbon reduction efforts, commencing with initiatives such as replacing conventional lighting with LED lights. Fundamental practices like upgrading pipes and electrical appliances to energy-saving models and minimizing the use of paper and plastic containers are being implemented step by step, with the ultimate goal of achieving carbon neutrality.

In this process, talents trained by institutions like NCUT can play a pivotal role. Numerous schools and non-governmental organizations, similar to NCUT, are investing in the cultivation of sustainable talents. Therefore, CEO Chen also urged business owners to "put aside their anxieties and believe in professionalism." By selecting the right sustainable partner, your transformation journey can become smoother and more expedient.

German manufacturer authorizes NT\$120 million software to National Chin-Yi University of Technology to help cultivate talents

OPENMIND, a German manufacturer with the world's exclusive 5-axis processing technology, authorized National Chin-Yi University of Technology's intelligent motion system with 50 sets of educational versions of two- to five-axis processing and programming automation development modules, with a total price of NT\$120 million. Cultivate intelligent machinery application talents.



Cheng-Chi Wang, director of the Intelligent Automation Engineering Department of NCUT, said that Taichung is an important settlement of the precision manufacturing industry and smart manufacturing, and the demand for smart automation machinery talents is urgent, and the high-end software authorized by German company OPENMIND is even more powerful. If teachers and students are chefs, five-axis processing machines are kitchen utensils, high-end software is like seasoning, and delicate work pieces are like Michelin meals, all of which are precise and careful processes.

Director Wang of NCUT said that hyperMILL® authorized by Deshang OPENMIND is a comprehensive CAM solution, suitable for 2.5D, 3D and 5-axis milling and turning-milling cutting, as well as high-speed cutting (HSC) and high-performance cutting (HPC) And other processing operations, and integrated in a single interface, can be automated without having to relearn programming language, which saves the learning time of engineers and also helps students' learning efficiency. Brands using this vendor's software are all over the world, such as BMW, a major automobile manufacturer, and ASML, a semiconductor device manufacturer (Taiwan ASML), etc.

The Intelligent Automation Engineering Department of NCUT plans that the junior and senior students will mainly learn the software interface and perform basic operations, and the graduate students will focus on the application level, such as multi-axis design and programming automation module development, combined with cutting vibration. For this software, OPEN MIND also has relevant certificate certification. Through the certification system, it is hoped to help students strengthen their own abilities, and also cultivate talents for the application of intelligent machinery for the industry.

Mingjun Chen, general manager of OPENMIND, pointed out that through the German hyperMILL computer-aided design and manufacturing software, the advanced five-axis machining application technology will be brought to the campus. While cultivating talents, he also hopes to help the industry and contribute to the development of Taiwan's high-end precision machining effort.

