

National Yang Ming Chiao Tung University Students Realize Their Space Dream in the United States

🕒 2023-04-06 · 📄 News

A rocket streaked across the sky above the New Mexico desert in the United States. This was the first time that students from Taiwan participated in the world's largest intercollegiate rocket engineering competition, namely the Spaceport America (SA) Cup in the United States. During the competition, their rocket flew to 3,223 m in the sky. This bright orange rocket was wholly designed and built by "Formosan Fox," a brand new student rocket team in NYCU.



The Taiwan Space Agency was renamed the National Space Organization at the beginning of this year. President Tsai Ing-wen has emphasized Taiwan's commitment to participate in the global chain of the space industry through industry, government, and academic collaborations. However, where are the talents that are crucial for the development of the space industry? The performance of the NYCU Formosan Fox team is a testament to the increasingly active cultivation of space industry talent by the universities of Taiwan.

Wang Ming-Hao, a Formosan Fox team member, shared his experience of participating in the competition last year. He stated that the most challenging part of rocket technology is that it requires a combination of knowledge from diverse fields, including electrical engineering, systems engineering, fluid mechanics, and hardware and software, and their successful rocket launch in this competition was the result of cross-disciplinary teamwork. Wang also expressed his hope that more young students will join the team and realize their dreams of exploring space.

Assistant Professor Tan Zu Puayen of the NYCU Department of Mechanical Engineering who led the Formosan Fox team, shared his thoughts about the inception of the Formosan Fox team in an undergraduate course on Mechanical Practice. He stated that as the students acquired knowledge about rockets in this course, their passion for rockets and the space industry grew. Consequently, they decided to form NYCU's first rocket competition team and participate in the SA Cup competition in the United States. Because this was the first time that they were establishing a rocket team and designing a rocket, the preparations alone required nearly one and a half years. Fortunately, they successfully completed the competition preparations, which greatly boosted their team morale.



Assistant Professor Tan Zu Puayen added that the teams participating in the SA Cup had to achieve two goals. The first is launching a rocket with a payload of 4 kg to a specific altitude, and the second is successfully recovering the rocket intact. To these ends, the student team achieved commendable results by combining professional practice, innovative thinking, and academic integration, while also demonstrating sportsmanship and enthusiasm.

According to statistics, the annual output value of the global space industry exceeds US\$400 billion, and the demand for talent in the space industry is huge. As stated by Wang Ming-Hao, the student of the Formosan Fox rocket team who was interviewed, cross-disciplinary collaboration was paramount to the engineering project and the successful launch of their rocket.

Accordingly, the NYCU established the Institute of Space Systems Engineering (iSSE) this year, with the aim of expanding Taiwan's traditional role in the space industry, which was centered on producing single components, to a vertically integrated industry characterized by systems-wide expertise. The hope is that more young people, such as those from the NYCU Formosan Fox team, can thrive and excel in the space industry.

