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ACHIEVEMENTS

Taipei Tech Student to Race in FSAE with Top-Notch Self-Built Formula Race Car



Students of the Taipei Tech Racing (TTR) team are to race in the 2019 Formula SAE (FSAE) in Japan with TTR4 and TTR-EV1, two Formula-style race cars that the team designed and built. Formula SAE is a student race-car competition organized by SAE International, formerly knowns as the Society of Automotive Engineers. TTR is participating in an international race for the fourth time this year.

The team has spent two years in building TTR4, and the car features many advanced technologies. TTR4 is the first student race car that sports a monocoque structural system. A monocoque chassis allows the team to reduce the weight of the car by 15% while retaining its structural strength. The team also used pre-impregnated carbon fibers and the autoclave technique to build the chassis. Compared to the typical way of building a chassis, TTR's approach cut the amount of carbon fibers used and further reduced the weight of the car.

The team is also debuting TTR-EV1 in the 2019 FSAE. TTR-EV1 is the first electric-powered race car the team has built. Both TTR4 and TTR-EV1 use a double-wishbone suspension made of carbon fibers that allows for more accurate positioning.



The first monocoque-built student racing car in Taiwan made by Taipei Tech students

TTR is led by Prof. Chen Chih-Keng and Prof. Lian Kuang-Yow and is composed of more than forty students in different majors, including vehicle engineering, electrical and electronic engineering, chemistry, molecular science, and industrial design. TTR is run like a small company in which students are divided into different groups to build and market a race car.

TTR is also backed by many industry partners, including Hotai Motor, Yulong Group, Mouser Taiwan, Cobot Group Limited, Sanyang Motor, YAMAHA, and Audi. The partners provide not only funding but also technical know-how. Many partners are impressed by TTR4 and TTR-EV1.

"The FSAE challenges students to design, build, promote, and compete with Formula-style race cars," said Wang Sea-fue, Taipei Tech president. "Participating in competitions allows students to go beyond the confines of the classroom and apply their knowledge and communicative skills in creative problem solving."

ACHIEVEMENTS

College of Management Accredited By AACSB, Leading Business School Accreditation

The Taipei Tech College of Management earned the accreditation of the Association to Advance Collegiate Schools of Business (AACSB) on July 29, 2019.

Founded in 1916, the AACSB has been a worldrenowned accrediting body and business-education network that connects students, educators, and enterprises globally. It sets fifteen international-standard frameworks for the evaluation of business colleges worldwide. Accredited business schools are recognized to have the resources and faculty to provide quality business education and strong future prospects for graduates; only 5% of business schools worldwide have gained this accreditation.

"AACSB is committed to recognizing the excellence of educational institutions in teaching, research, curriculum development, and student learning," said Stephanie M. Bryant, Executive Vice President and Chief Accreditation



Officer of the AACSB. "We highly praise the efforts made by the faculty, students, and staff of Taipei Tech College of Management in teamwork and the pursuit of excellence."

"Students today, leaders tomorrow," said Taipei Tech President Wang Sea-fue. "The pursuit of excellence and the spirit of teamwork have been an emphasis of our business programs. We believe this accreditation will have a ripple effect as our graduates enter the workforce and have a positive impact in the business world."

Chui Yu Chiu, Dean of College of Management, along with all the faculty members, are delighted to receive this special honor. "Our next step is to intensify our international partnerships with leading business colleges and institutes around the world," he said.



COLLABORATION

AUO Joins Hands with Taipei Tech on Industry-academic Research



AU Optronics (AUO), one of the leading panel manufacturers in the world, is partnering with Taipei Tech's Global Research & Industry Alliance (GLORIA) to integrate resources from academia and industries. On July 22, 2019, the CEO and Chair of AUO Paul Peng and Taipei Tech President Wang Sea-Fue signed the industry-academic collaboration MOU to confirm the partnership. The two sides will cooperate closely on the fronts of talent cultivation, research and development cooperation, and international industry-university alliances.

AUO marks the sixth member to join Taipei Tech's GLORIA. Current members include Everest, a smart textile manufacturer; Walsin Technology, a passive component manufacturer; Casetek, a metal component manufacturer; Supermicro, a server solution provider; and Delta Electronics, an electronic component manufacturer. Taipei Tech has been able to provide services such as topic-specific research, technology transfers, campus recruitment, and employee training for these partner companies.

Taipei Tech and AUO have agreed to contribute resources to a mutual cooperation fund for several shortand long-term joint research projects. The smart manufacturing project is the first to be implemented, with twelve sub-projects currently being discussed.

Through this collaboration, AUO is also expanding on their current talent-cultivation program with Taipei Tech. In the near future, Taipei Tech will be integrated into the GOLF (Gap of Learning & Field) network, an alliance of twenty-one companies and forty-two colleges that provide research, internship, and technology-transfer opportunities. Faculty



Taipei Tech and AUO have been talking about issues related to smart manufacturing, supply-chain management, and smart research and development.

members from Taipei Tech will also be offering courses in the internal learning platform of AUO.

AUO is a company with a particularly close relationship to Taipei Tech. Its CEO, Paul Peng, is a Taipei Tech alumnus and has received a Taipei Tech honorable doctoral degree. In 2016, Taipei Tech signed a cooperation letter of intent with AUO. Through this agreement, Taipei Tech students are able to intern at the LCD panel factory of AUO and learn the entire process of panel manufacturing. This is the first and only internship program in Taiwan that allows students to work in an actual LCD panel manufacturing factory. The two



The CEO and Chair of AUO Paul Peng and President Wang Sea-Fue signed the industry-academic collaboration MOU

sides also have agreed on scholarships for master's-degree and doctoral-degree students and an international training program.

"Smart technology has been the focus of AUO in recent years," says Taipei Tech President Wang, "and this includes manufacturing, sensors, energy management, and the circular economy. Taipei Tech is a leading research institute in all these areas."

Wang further indicates that Taipei Tech's cooperation with industry has already led to impressive results: the smartenergy conservation project that Taipei Tech has with Delta Electronics, in which they obtain research results from the Department of Energy and Refrigerating Air-Conditioning Engineering, is expected to cut energy costs at Delta's Longtan factory by five percent. Wang is optimistic about the new partnership with AUO and expects it to be another model for future partnership opportunities.

Peng of AUO stresses that smart manufacturing is beneficial to the management of factories and to production. "Taipei Tech and AUO have been talking about issues related to smart manufacturing, supply-chain management, and smart research and development. These issues stretch across mechanical and electrical engineering, computer science, and management," he says. "We believe this collaboration model serves as a good framework for cross-discipline integration in later phases where we expect many more great collaboration projects."

Taipei Tech has been creating opportunities for research and discovering profitable commercial techniques, allowing the university to become many enterprises' best partner in academia. According to statistics from the Ministry of Education, Taipei Tech ranks fifth among universities in the average amount of per-faculty-member academia-industry research funding. Based on Ministry of Science and Technology figures, Taipei Tech also ranks high on the list for the amount of GLORIA program members.

PBL LEARNING

Taipei Tech Industrial Design Wows Crowd with Problem-solving Designs

The Higher Education Sprout Project, launched by the Ministry of Education, has been facilitating more dynamic teaching and learning methods for college students in Taiwan. The project has also enabled Taipei Tech, one of the members in the project, to implement the Problem-Based Learning (PBL) program. The PBL program at Taipei Tech is unique in Taiwan in that it has international academic and industry partners.



The three advisors of Taipei Tech PBL to have given useful suggestions on their works

To build student's communicative and professional competence, Taipei Tech joins Osaka Institute of Technology (OIT) of Japan, Koomin University of South Korea, and Yanmar Holdings, a Japanese diesel engine manufacturer, in implementing one PBL program at Taipei Tech. Each university sends students to participate in a topic-based project lasting for two months, during which students are tasked to come up with a product prototype for Yanmar.

In the recent years, a "modern ox" has been the topic assigned by Yanmar. Like Taiwan, Japan is facing the problem of an aging agricultural workforce. Yanmar is looking into ways to make the work easier for farmers. Led by the OIT Department of Robotics faculty, participating students are introduced to the problem by interviewing farmers about the use of an agriculture machine in Kyoto.

After learning about the problems that farmers encounter, the students embarked on designing the helper bot, "Yanmoo," which functions as a labor-saving machine for senior farmers. With a few touches on a smartphone, the helper bot can be activated to help seed and plow at a designated speed, direction, and frequency.

Students spend two weeks in Japan learning about robot production and the farmers' needs so that they can generate a useful design. They then build and test a prototype in South Korea. Finally, the students assemble the final "Yanmoo" back in Taiwan.

The students from the three universities are mainly mechanical engineering, electromechanical engineering, and design majors. The project challenges these students on cost management, cross-disciplinary collaboration, and creative problem solving in an international environment. As the PBL program intends, students have great opportunities to face real-life challenges and broaden their horizons.

"Participating in the actual research, design, and assembling educates students in a way that spurs growth in their practical ability and cross-disciplinary skills," says President Wang Sea-fue. "The experiences accumulated during the project prepare them well for their future careers."



GLOBAL

KMUTT Delegation Visits Taipei Tech, Furthers Partnership



A delegation from King Mongkut's University of Technology Thonburi (KMUTT) of Thailand, headed by President Suvit Saetia, visited Taipei Tech on July 30. Taipei Tech president Wang Sea-Fue received the delegation and had a dialogue with the newly-installed President Suvit Saetia. During the conversation, the two sides talked about ongoing and future academic and cultural-exchange projects.

KMUTT and Taipei Tech have been partner institutes since 2012, and many collaborative projects have sprouted from this partnership. The partnership began with a course-based and lab-based student exchange. It was followed by a faculty exchange program in which Taipei Tech professors of mechanical engineering, electrical engineering, computer science, and engineering were invited to KMUTT to offer short-term courses. An international internship program started shortly after, allowing students to intern at factories in

Thailand. The two sides have also signed a memorandum of understanding on joint research.

Taipei Tech and KMUTT have been in talks of a dual degree program in chemical engineering since last year. During the visit this time, the two sides drafted more detailed content regarding the agreement, which is soon to be finalized. Built upon numerous successful collaborative projects, the mutual trust that Taipei Tech and KMUTT have for each other will bring about more opportunities in the future.

Taipei Tech President Wang Sea-Fue, KMUTT President Suvit Saetia, along with the delegation of both sides had a dialogue on a dual degree program in chemical engineering



RESEARCH

Taipei Tech to Partner with NAR Labs to Build Laboratory



Taipei Tech and National Applied Research Laboratories (NAR Labs) have signed a partnership agreement to build a laboratory at Taipei Tech. The new laboratory will be part of the new Taipei Tech Technology Research Institute and will be housed in the new research building, scheduled to be completed next year.

The Taipei Tech Technology Research Institute is Taipei Tech's new research unit that integrates research and resources from different departments, fields, and partner companies to maximize research capacity. The agreement with NAR Labs brings in resources from its Taiwan Instrument Research Institute (TIRI), which does research in instrument technologies and assists companies in building cuttingedge technical instruments for uses in science, engineering, agriculture, and medicine. NAR Labs has helped build several ISO/IEC 17025-compliant laboratories throughout Taiwan.

Several executives from Taipei Tech and NAR Labs attended the agreement-signing ceremony. Among them were President Wang Sea-Fue of Taipei Tech, Vice Presidents Jen Yi-Jun and Thomas Yang of Taipei Tech, and President Wang Yeon-Her, ITRC Dean Yang Yao-Joe, and Vice Dean Chen Fong-Zhi of NAR Labs.

President Wang of Taipei Tech is looking forward to the partnership with NAR Labs. He notes that Prof. Chen Bo-Chiuan of Taipei Tech has a self-driving vehicle project, funded by the Ministry of Science and Technology (MOST), that will soon undergo tests from Taiwan CAR Lab, part of NAR Labs. Wang expects the partnership with NAR Labs to increase the research capacities of both institutes.

NAR Labs president Wang Yeong-Her notes that the partnership with Taipei Tech holds much promise: both institutes employ outstanding researchers and have many resources. NAR Labs has been serving as a platform for the research and development of projects in many fields and can provide data for future development. "NAR Labs has eight additional research institutes specializing in different fields," said Wang, "and we look forward to partnering with Taipei Tech in these fields in the future."