NTU Singapore leads industry initiative to launch two new labs to accelerate solutions in cleantech sector

posted on Apr. 22, 2022 at 3:01 am

image: (from left to right) Mr Jeffrey Siow, Enterprise Singapore's Managing Director and Chief Operating Officer; Ms Low Yen Ling, Minister of State for the Ministry of Trade and Industry and Ministry of Culture, Community and Youth; NTU President Professor Subra Suresh; and NTU Senior Vice President (Research) Professor Lam Khin Yong at the launch of the EcoLabs Digital Twin Co-Innovation Lab and NTU–Arrow Invent Joint Lab.
view more

Credit: Credit to Nanyang Technological University

To better meet the energy demands of Singapore in a sustainable and renewable manner, **Nanyang Technological University, Singapore (NTU Singapore)** is leading an initiative to launch two new laboratories which will help energy start-ups make the leap from research and development into commercialisation through industry expertise, mentorship, and test-bedding.

The two new labs are launched under the EcoLabs Centre of Innovation for Energy (EcoLabs) partnership, which is a collaboration between NTU Singapore, Enterprise Singapore and the Sustainable Energy Association of Singapore (SEAS). Launched in 2019, EcoLabs is managed by NTU's Energy Research Institute (ERI@N), a leading research institute for innovative energy solutions.

Located at JTC CleanTech One, the two new labs aim to close the gap between translational research and real-world commercialisation in the cleantech space. They will explore new energy and low carbon technologies that bring about energy efficiency and decarbonisation, and support Singapore's future energy transition.

The first is the **EcoLabs Digital Twin Co-Innovation Lab,** which is a collaborative and creative ecosystem to help energy start-ups and small and medium enterprises (SMEs) innovate in the local energy space. Start-ups with innovative ventures to disrupt the energy business will have access to mentorship and business development programmes.

The second lab is known as the **NTU–Arrow Invent Joint Lab**, a tie-up between the University and Arrow Electronics, a global provider of technology products, services, and solutions.

Ms Low Yen Ling, Minister of State for the Ministry of Trade and Industry and Ministry of Culture, Community and Youth, officiated the launch of both laboratories today.

By bringing together industry partners from small enterprises to established multi-national companies, EcoLabs serves as a one-stop hub for energy start-ups and removes the silos where clean energy solutions are deployed. It enables start-ups to further develop their clean energy-related innovations and business ideas and commercialise them into technologies that will benefit industry and society.

NTU President Professor Subra Suresh said: "As a small, resource-constrained country, Singapore faces an 'energy trilemma' of having to maintain a delicate balance among affordability, reliability, and sustainability. The nation is always exploring new energy and low carbon technologies to achieve its energy needs and low emission targets. In this regard, EcoLabs has been a champion of Singapore's efforts by advancing energy and decarbonisation partnerships with start-ups, SMEs, corporate collaborators, investors, certification bodies and government agencies at home and abroad. The launch of these two labs today is particularly timely as Singapore ramps up its efforts to decarbonise its energy and building sectors, as we emerge stronger from the COVID-19 pandemic."

NTU's Senior Vice President (Research) Professor Lam Khin Yong said: "The launch of two new co-innovation labs highlights NTU's strengthening of industry engagements to benefit research, innovation and education. Pairing the University's broad and vibrant approach to entrepreneurship with the industrial advantages of our partners helps create an innovation ecosystem that nurtures next-generation entrepreneurs here in Singapore."

"Through NTU EcoLabs, the University is committed to becoming a regional hub for the sourcing of knowledge, capabilities, and partnerships, developing a network of partnership to maximise the impact of our innovation. This work will contribute strongly towards Singapore's Research, Innovation and Enterprise (RIE) 2025 plan and will also become a valuable feature of our academic and research experience," added **Prof Lam**.

Enterprise Singapore's Managing Director and Chief Operating Officer Jeffrey Siow said: "Enterprise Singapore is delighted to partner NTU and leading electronics distributor Arrow Electronics to support local start-ups and companies. The new EcoLabs Digital Twin Co-Innovation Lab and NTU–Arrow Invent Lab will create more opportunities for companies to develop, testbed and deploy innovative solutions, and to collaborate and innovate, especially in sectors like clean energy and electronics that are strategically important for Singapore."

EcoLabs Digital Twin Co-Innovation Lab: All-in-one integrated testbed

The EcoLabs Digital Twin Co-Innovation Lab is an all-in-one integrated testbed platform for local small and medium enterprises (SMEs) and start-ups to transform the Singapore energy market with next-generation technologies.

It will focus on energy efficiency of commercial buildings and decarbonisation. This new space will help partners to facilitate the planning, design, and operation of energy-efficient and sustainable technologies, and investigate built environment performance.

The laboratory will perform research on advanced energy profiling through energy and plug load monitoring, carbon mapping, product benchmarking, load monitor, novel cooling solutions, and advanced microgrid solutions with integrated batteries. It will also create an energy test data repository.

Presently, more than five locally-based start-ups and SMEs have deployed their solutions at the space, such as G-Energy, Pylon City, Ampotech, Resync Technologies, and Allocate Space. Another 15 companies are expected to testbed their solutions here in the future.

EcoLabs will provide the essential translation facilities and connections for research and development, lab infrastructure, testbed sites, and business opportunities. These will help these companies to successfully scale their innovation and commercialise their efforts, bringing their solutions to the market.

One such partnership is a three-year joint sustainability innovation programme with OCBC Bank and venture capital firms Mistletoe and Blue Ashva. The three partners will provide $3 million to support early-stage SMEs and start-ups for the translation and deployment of sustainability technologies with test clients.

Another partner is Chrysalix Venture Capital, which will launch a joint Technology Translation Programme with EcoLabs to identify, incubate and showcase promising decarbonisation technologies. They will provide an integrated early-stage investment platform to fund up to US$200,000 per selected start-up to support their business aspirations and goals.

NTU–Arrow Invent Joint Lab: Tapping on global expertise

The NTU–Arrow Invent Lab is an open laboratory designed to accelerate start-ups and SMEs in bringing their products and services to the market. Local start-ups and emerging tech companies can leverage the laboratory as a resource and enablement centre to gain access not just to hardware equipment but also mentorship by industry experts.

Arrow Electronics, headquartered in the United States, guides innovation forward for over 220,000 leading technology manufacturers and service providers by developing technology solutions that improve business and daily life. Through Enterprise Singapore's facilitation, Arrow and NTU have come together to form the NTU–Arrow Invent Lab initiative. With this, Arrow will expand its innovation partnerships and activities in Singapore, while supporting the innovation development needs of the start-up community here.

As an EcoLabs partner, Arrow will provide expertise and advice to start-ups throughout their product development cycle, from proof-of-concept to prototyping, testing, system integration and pre-production verification.

The laboratory is equipped with state-of-the-art engineering equipment and testing modules for companies to test and measure their product. Arrow engineers will provide consultation for product testing and development for industry and market application.

"Great ideas and new technologies have the power to change lives and transform society. This is why we strive to find ways to make it easier for innovators to create and make technology of tomorrow," said **Natarajan MM, Arrow Electronics' Vice President of Sales for South Asia**. "We are excited to collaborate with NTU to set up this joint lab. As a global technology company, we are committed to making our best-in-class engineering resources, technological expertise, supply chain capabilities, and a vast global network of technology ecosystem partners more accessible than ever to help these start-ups and entrepreneurs bring their innovations to life."

The laboratory will also feature showcases and demos of technological concepts that have successfully been translated from idea to product. One such project, open to all laboratory visitors, is a car simulator that allows users to drive a car using only the motion of their head, thanks to head-tracking sensors and technology.