

NTU and Guoxuan High-Tech Power Energy Co. to develop innovative energy storage solutions for electric vehicles



Nanyang Technological University, Singapore (NTU Singapore) and Guoxuan High-Tech Co., Ltd. (Guoxuan), one of China's leading battery manufacturers, are collaborating to develop innovative energy storage technologies for electric vehicles.

Building on their existing partnership, NTU and Guoxuan are signing an agreement to develop new technologies to overcome battery-related challenges. These include the limited charging cycles of batteries and its integration with various renewable energy sources.

The new agreement is part of a S\$10 million partnership between NTU and Guoxuan in December 2017 to establish the **Guoxuan-NTU Smart Energy Joint Laboratory**.

The opening of the joint lab today was officiated by **Dr Amy Khor, Senior Minister of State for the Environment & Water Resources**.

“The joint partnership between Guoxuan and NTU contributes to Singapore’s continuing investments in research, development and demonstration (RD&D) to address our climate and

sustainability challenges, and to create solutions that can be exported globally, under our Climate Action Plan. In this Year of Climate Action, I urge organisations to commit to the Climate Action Pledge and to review ways to reduce their carbon footprint in their business operations,” said Dr Khor.

The research partnership is part of the exciting developments on the NTU **Smart Campus** where advanced technologies are being developed and tested.

NTU President Professor Subra Suresh said, “NTU’s collaboration with Guoxuan will push the boundaries and performance of batteries, energy storage and green transportation technologies, which are at the core of electric vehicles and renewable energy deployment.

“The innovations developed will be tested on NTU’s Smart Campus, which is already a testbed of cutting-edge technologies ranging from ultra-fast charging electric vehicles and self-driving vehicles, to smart power grids. The development of these technologies will support Singapore’s Smart Nation goals.”

Founder and Chairman of Guoxuan, Mr Li Zhen, said, “Our aim is to explore new frontiers of energy transformation by developing sustainable energy technologies that harnesses the untapped power of nature. A key enabler for such renewable energy technologies are energy storage systems such as the lithium-ion battery, which faces challenges that limit the potential of renewables. The Guoxuan-NTU Smart Energy Laboratory will focus on overcoming these challenges and develop cutting-edge energy storage solutions that will take renewable energy technologies to greater heights of innovation.”

Joint lab to kickstart research on energy storage and electric vehicles

The new Guoxuan-NTU Joint Laboratory is set up on the NTU campus. Scientists and engineers from both organisations will research on battery technologies, as well as energy storage for electric vehicles and industrial applications.

Housed at NTU, the lab which was opened today, will kickstart the joint research projects. Scientists and engineers from both organisations will commence research on battery technologies, as well as energy storage for electric vehicles and industrial applications.

Professor Lam Khin Yong, NTU’s Vice President for Research, said, “NTU has a strong track record in working with industry on translational research and innovation. NTU’s partnership with Guoxuan not only leverages these strengths, but also attests to the university’s drive in developing sustainable solutions as part of NTU’s Smart Campus vision.”

A key research focus is to improve battery performance for electric vehicles under humid tropical environments, similar to weather conditions in Singapore.

For example, the joint lab will develop a hybrid thermal management system for lithium-ion battery packs, which would help manage temperature fluctuations and improve battery efficiency

and its life cycle. This would enable electric vehicles to travel longer distances on a single charge.

As an R&D intensive enterprise, Guoxuan has a strong core knowledge of research, development and manufacturing of lithium-ion and other types of batteries.

The joint laboratory complements Guoxuan's existing R&D institutes located in Hefei and Shanghai in China, Silicon Valley and Cleveland in the United States, and Tsukuba in Japan.

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