

Science 08 NOV 2023 6:42 PM AEDT

AI-tech to make batteries safer and last longer

Image: The joint team of researchers and engineers from NTU and Durapower, with the container-sized energy storage solution that test-bedded the AI-powered tech. The ESS has Li-ion batteries, solar panels, and electrical and safety equipment.

Scientists from NTU and Durapower Technology Singapore Pte Ltd have developed a cloud-based technology that can greatly enhance the lifespan and safety of lithium-ion batteries.

As the global shift towards renewable



energy and electric vehicles (EVs) accelerates, the demand for efficient, safe and sustainable batteries has become a pressing concern. Similarly, with the rise in cloud computing, the demand for energy storage systems for data centres has been growing.

Powered by the Internet of Things (IoT) and Artificial Intelligence (AI), this patent-pending innovation can help companies and data centres lower the risks associated with lithium-ion batteries, including potential fire hazards,

particularly in hot and humid climates like Singapore.

The new technology offers high-accuracy, real-time monitoring, and can predict battery conditions for up to five years, which can help extend the lifespan of lithium-ion batteries by more than 50 per cent and thus reduce carbon emissions significantly.

The research project is supported by the Energy Market Authority (EMA) and the National Research Foundation Singapore, under the Research, Innovation and Enterprise (RIE) 2020 Plan.

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