Texas energy storage kigali

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As announced by the Department of Defense on Sept. 18, The University of Texas at Dallas will receive $30 million over three years from the DOD to develop and commercialize new battery technologies and manufacturing processes, enhance the domestic availability of critical raw materials, and train high-quality workers for jobs in an expanding battery energy storage workforce.

The award, which creates a prototype Energy Storage Systems Campus, is the largest allocation from a federal agency that the University has received to date. The project will leverage and stimulate over $200 million in private capital.

Dr. Kyeongjae Cho, professor of materials science and engineering in the Erik Jonsson School of Engineering and Computer Science and co-principal investigator, will lead the project as the director of the Batteries and Energy to Advance Commercialization and National Security (BEACONS) center.

Key partners include LEAP Manufacturing, a consortium of energy storage companies; AUI (Associated Universities Inc.); the University of California, Berkeley; and the University of Chicago. The agreement provides funding from the DOD"s Manufacturing Capability Expansion and Investment Prioritization Directorate.

"This initiative is a tremendous opportunity to showcase UTD"s mission of research, service and teaching in the context of accelerating workforce development and next-generation solutions that are critical to our nation"s economy and defense readiness," said Dr. Richard C. Benson, UT Dallas president and the Eugene McDermott Distinguished University Chair of Leadership. "The expertise of our faculty researchers, the excellence of our academic programs in engineering and science, and our demonstrated ability to leverage partnerships with industry put UTD in a unique position to lead this national effort to drive innovation in battery technology and manufacturing."

In addition, the initiative will provide access to facilities to help entrepreneurs design, develop and demonstrate novel energy storage systems.

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UT Dallas President Richard C. Benson

The National Blueprint for Lithium Batteries 2021-2030, published in 2021 by the Federal Consortium for Advanced Batteries, outlines several goals, including maintaining and advancing U.S. battery technology

leadership by strongly supporting scientific research; science, technology, engineering and math education; and workforce development.

The agreement with the DOD is an outcome of more than a year of concerted efforts by UTD leaders and LEAP Manufacturing co-directors Dr. Thomas Campbell and John Stibal to respond to the federal agency"s request for proposals.

BEACONS will include multiple UTD researchers in the Jonsson School and the School of Natural Sciences and Mathematics who work on energy storage technology, including experts in computer modeling, artificial intelligence, chemistry, prototyping and commercialization. Their work will center on developing safer, longer-lasting and more efficient next-generation battery technology, including alternatives to traditional lithium-ion cells. Lithium-ion batteries, which power everything from consumer electronics to electric vehicles, have disadvantages: They are sensitive to high temperatures and thermal runaway reactions, which can cause fires; they are difficult to recycle; and they require the expensive mining and processing of rare raw materials, such as lithium, nickel and cobalt.

UTD researchers are investigating current battery system optimization as well as next-generation batteries with alternative materials and designs, such as solid-state batteries, which use solid electrolytes instead of organic liquids or polymers, and aqueous zinc-ion batteries, which are made from raw materials that are more abundant.