

UC SANTA BARBARA

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## **UCSB to join major collaboration supporting battery innovation and commercialization**

Thanks to a new nonprofit — the Electrochemistry Foundry (ECF) — and construction begun under its auspices, UC Santa Barbara is poised to join a group of collaborating partners in a new era of battery prototyping. The effort is aimed at bridging the gap between innovative technology and commercial availability, thus securing the technological foundations of the modern economy.

The public launch of ECF was announced on April 15, with the goal of accelerating the commercialization of advanced energy technologies in California's first shared-use battery pilot manufacturing line. A \$28 million competitive award from the California Energy Commission (CEC) has enabled the organization to move forward with developing the facility, to be located in Hayward, California, on the eastern side of San Francisco Bay, bringing job opportunities to a designated disadvantaged community.

In addition to UCSB, the network of collaborating entities includes UC Berkeley, UC Riverside, the Volta Foundation, the Catalyst Innovation Group and Lawrence Berkeley National Laboratory. Additionally, ECF will onshore world-class manufacturing expertise from South Korea through dedicated operational support from Top Material, an industry leader in operating flexible Li-ion manufacturing lines.

“The support from the California Energy Commission will help to establish a state-of-the-art battery-component manufacturing pilot line at UCSB’s recently established OASIS research facility, thus bolstering efforts to develop and scale-up of novel manufacturing processes while training the next-generation of battery engineers,” said Professor [Jeff Sakamoto](#), a battery expert in the Materials and Mechanical Engineering Departments at UCSB’s Robert Mehrabian College of Engineering. Sakamoto is UCSB’s lead on the effort.

ECF’s mission calls for it to provide shared infrastructure and expertise required to address the current high-cost transition from laboratory research to industrial-scale production, considered the “missing link” in the American innovation ecosystem. With access to ECF’s pilot line, a startup developing, say, a new battery cathode can produce the first fifty multi-layer pouch cells needed to show to investors, without building a \$10 million facility of their own.

“I’ve seen too many brilliant breakthroughs stall out in the pilot-scale gap,” said ECF CEO Brenna Teigler, whose background includes roles at Activate, Cyclotron Road and the U.S. Department of Energy. “Our vision is a world powered by electrochemistry, where the path from scientific discovery to societal impact is open to all innovators. The next great battery breakthrough — whether it comes from a startup or an established company — should not be stopped by the cost of infrastructure they can’t justify building alone.”

“The ECF will fill a great unmet need by bridging the gaps between cutting-edge battery innovation, commercialization and scale-up in California,” said Sakamoto, adding that UCSB will contribute ceramic-electrolyte R & D to enable advanced electrochemical technologies such as solid-state batteries and membranes for energy-efficient lithium separation.

The centerpiece of ECF’s operations is its 20,000-square-foot state-of-the-art facility, strategically located to leverage the Bay Area’s hardware-engineering talent and support economic growth in. Scheduled for completion in late 2026, the facility sits in the middle of the highest concentration of electrochemistry startups, world-class academic institutions, national labs, startup accelerators and venture capitalists in the world. It features a comprehensive manufacturing line capable of producing at least ten thousand cells per year supporting both pouch and cylindrical formats.

“We are at a historic moment in the evolution of energy technology, where laboratory breakthroughs must rapidly become industrial realities to meet California’s climate and energy goals,” said Anthony Ng, manager of technology innovation and entrepreneurship at the CEC. “Batteries supporting a clean grid and electrifying transportation play a critical role in realizing California’s vision of a one-hundred-percent clean-energy future. The CEC’s \$28 million award to ECF supports this vision, thus ensuring that California remains the global hub for the entire lifecycle of electrochemical development.”

As a nonprofit with no commercial stake in the technologies developed within it, ECF operates as a fully IP-neutral resource. Its users retain complete ownership of their intellectual property, eliminating the conflicts of interest that can complicate partnerships with for-profit contract manufacturers or corporate innovation programs. This open-access model is supported by industrial-grade capabilities including precision electrode fabrication and advanced cell assembly in a high-spec dry room, formation- and performance-validation systems, and the data infrastructure to link raw materials directly to electrochemical results. Together, these resources allow startups and researchers to refine processes, produce industry-ready products, and prepare for high-volume production.

“The future of the battery industry depends on our ability to scale both innovation and the workforce supporting it,” said Yen T. Yeh, executive director of the Volta Foundation. “ECF’s approach brings those together, and Volta Foundation is proud to partner in supporting it.”

ECF is also committed to community-focused workforce development. In partnership with the Bay Area Community College Consortium and United Steelworkers, ECF will provide hands-on training that prepares those in the local workforce for high-skill careers in the energy and advanced-manufacturing sectors.

ECF is hiring and accepting expressions of interest from startups, researchers and companies seeking pilot-scale electrochemical manufacturing and testing capacity. The facility is expected to welcome its first users in the first quarter of 2027.

Tags

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