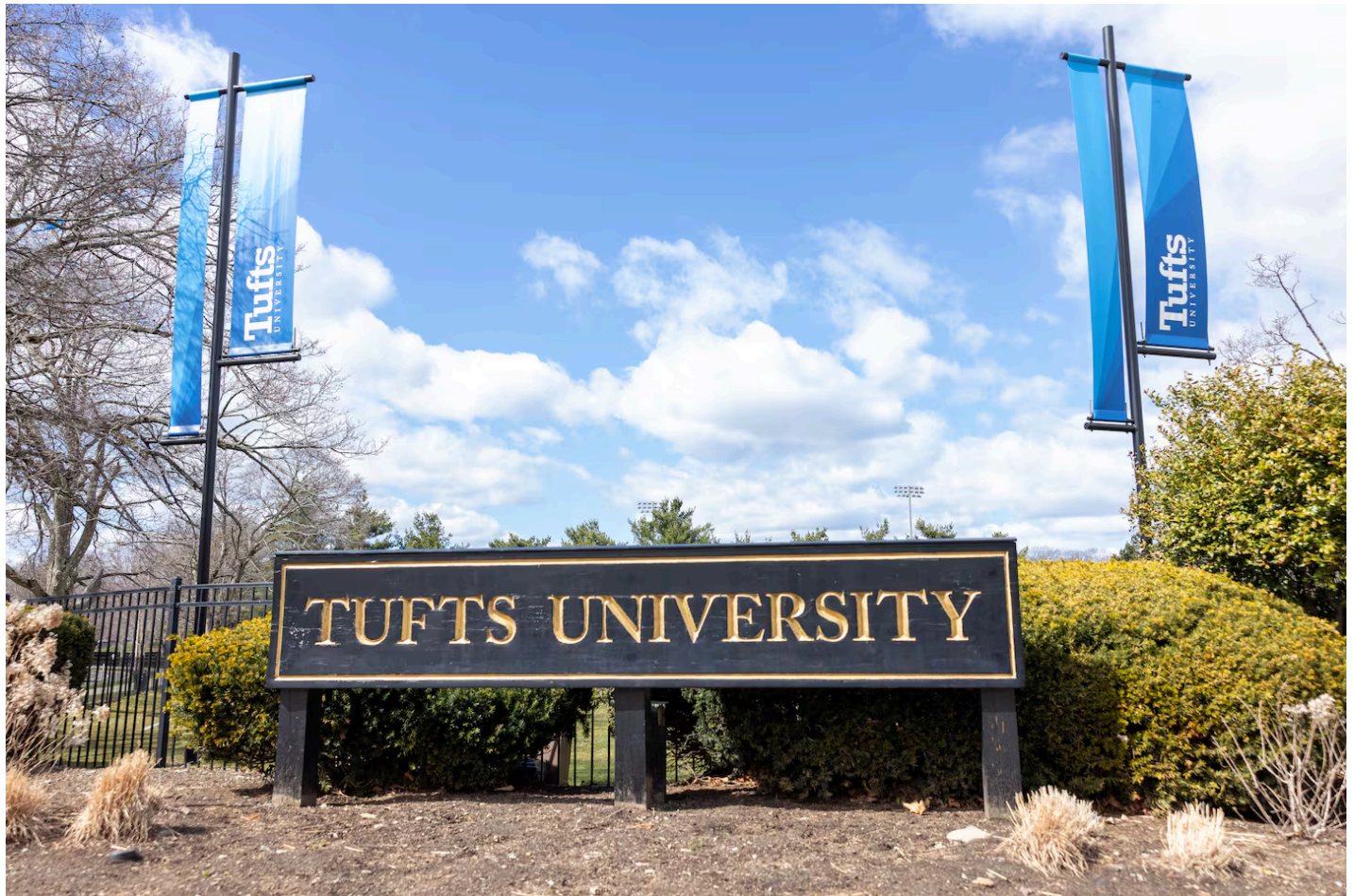


Tufts to innovate clean energy materials in creation of \$11.5 million institute

By **Maren Halpin** Globe Correspondent, Updated May 19, 2025, 8:00 a.m.



Tufts University in Medford will be home to the Tufts Epsilon Institute for battery material innovation, the university recently announced. SCOTT EISEN/GETTY

Researchers at Tufts University will soon dive into discovering new battery materials, expanding potential uses and sustainability, in a partnership with India-based manufacturer Epsilon Advanced Materials.

The new Tufts Epsilon Institute, which the university [announced](#) is being launched by a \$11.5 million sponsorship from Epsilon, will work to develop new chemical compounds

for the batteries that power everything from laptops and cell phones to electric vehicles. The institute's researchers will work to reduce battery manufacturing's heavy reliance on the world's limited lithium supply by finding new options.

The research will bring the United States into an up-and-coming and crucial innovation space, said Vikram Handa, managing director and founder of Epsilon.

"Innovative materials are needed to come up with innovative solutions that will help solve problems in the future," Handa said.

In lithium-ion batteries, the negative end is always made of graphite, but for the positive end, called the cathode, the possibilities are much wider. The cathode is commonly made with lithium, which is in limited natural supply, but other materials and chemical compounds can displace some of the lithium, reducing the amount of it that is used per battery, Handa said.

Researchers in China began developing and commercializing batteries made with a low-cost, safer cathode compound called lithium iron phosphate roughly two years ago. With no manufacturing sites using the compound outside of China, Handa hopes the institute can explore new battery material options for the American market and beyond, contributing to the transition of energy sources from fossil fuel to batteries.

"There's a lot of innovation still to be done," said Handa, who also said he expects to see major progress in the field in the next eight to 15 years.

The partnership first took root in 2020 when Handa visited Tufts, from which he graduated in 2001. During his return to his alma mater, Handa said he was "amazed" by how far the university had come with its biomedical materials and AI research, sparking conversations with Tufts leadership about how his business could get in on the action at the Medford campus.

The institute will further the school's development of solutions to real-world problems, said Kyongbum Lee, dean of the School of Engineering at Tufts, expanding the reach of student and faculty work far beyond the classroom.

"Being able to provide students the opportunity to really create material solutions with us, the faculty, is really exciting," Lee said. "For them to get the hands-on experience of working on problems that they can imagine are going to have an impact on the world, that's a big motivating factor."

The institute's work will not only focus on the end product, but also on the processes and resources used along the way to make the batteries as sustainable and long-lasting as possible while leaving the least amount of waste possible.

"How these battery materials are made is just as important as the final purpose," Handa said.

The sponsorship will support the hiring of three new faculty members in the university's engineering department, according to a [news release](#).

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