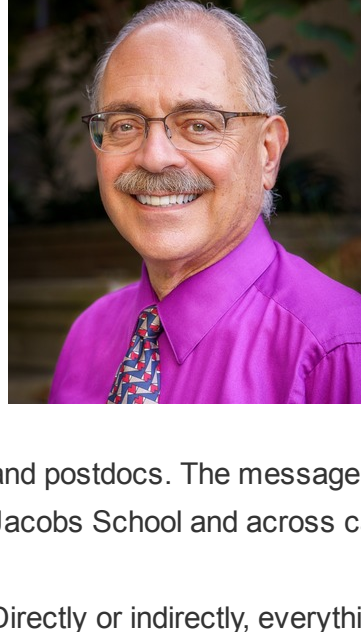


Our grad students and postdocs



Today I am [sharing a message](#) that I sent earlier this week to all our graduate students and postdocs here at the UC San Diego Jacobs School of Engineering. I deeply value our graduate students and postdocs. Individually and collectively, they are essential to our mission: to leverage engineering and computer science for the public good.

I will let the message speak for itself. (For the most part!) I decided to share it with our broader Jacobs School community because we all have skin in the game when it comes to ensuring the professional and personal success of our graduate students

and postdocs. The message includes a list of many of the available resources here at the Jacobs School and across campus.

Directly or indirectly, everything that we do here at the Jacobs School supports our efforts to create and maintain intellectual, academic and physical ecosystems that drive real-world impact through technical innovation. Graduate students and postdocs are, of course, critical to these ecosystems.

Our work to build and strengthen these ecosystems is never done. As I wrote last month, we are a world-class engineering school that [celebrates what we value](#). To truly celebrate our graduate students and postdocs, we must work together to co-create the intellectual, academic and physical ecosystems that fully empower our entire community. This is how we train and inspire tomorrow's innovation workforce.

I am profoundly grateful to everyone who has stepped up to support our mission over the years. I look forward to engaging with an ever wider circle in our community. Together we leverage engineering and computer science for the public good. This is, indeed, how we make bold possible.

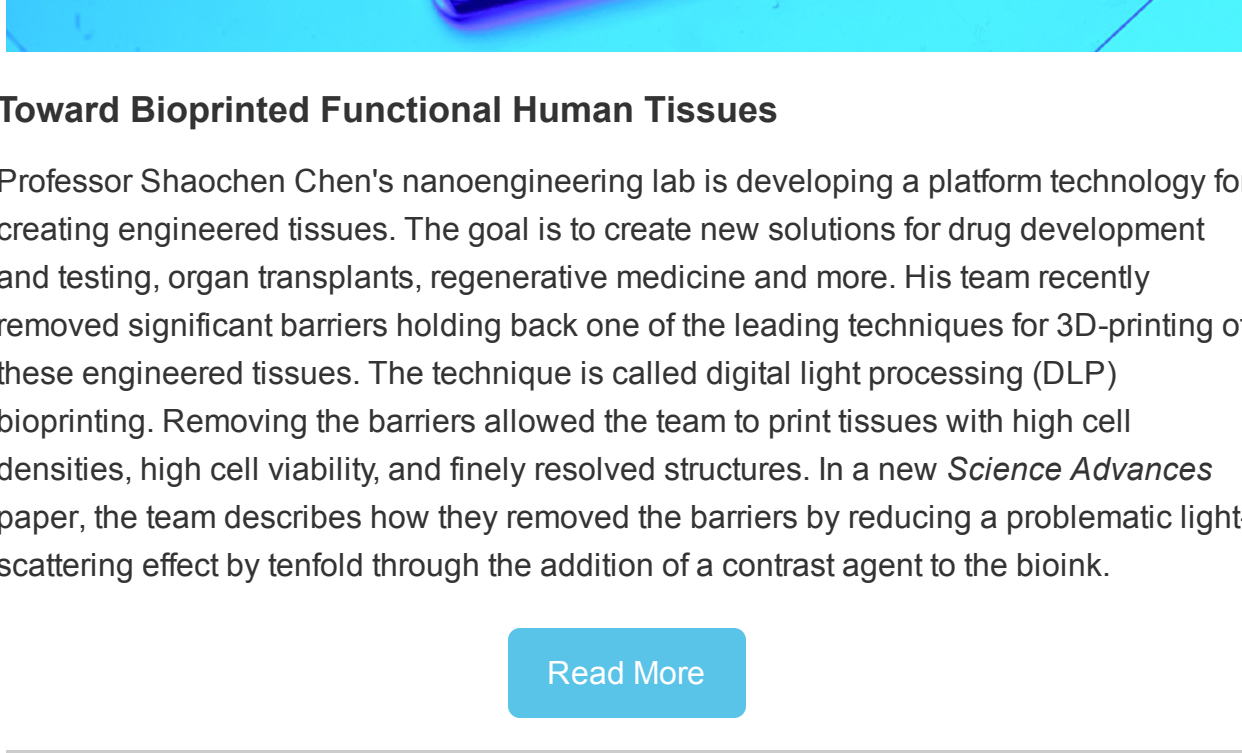
As always, I can be reached at DeanPisano@eng.ucsd.edu.

Sincerely,

Al

Albert ("Al") P. Pisano, Dean

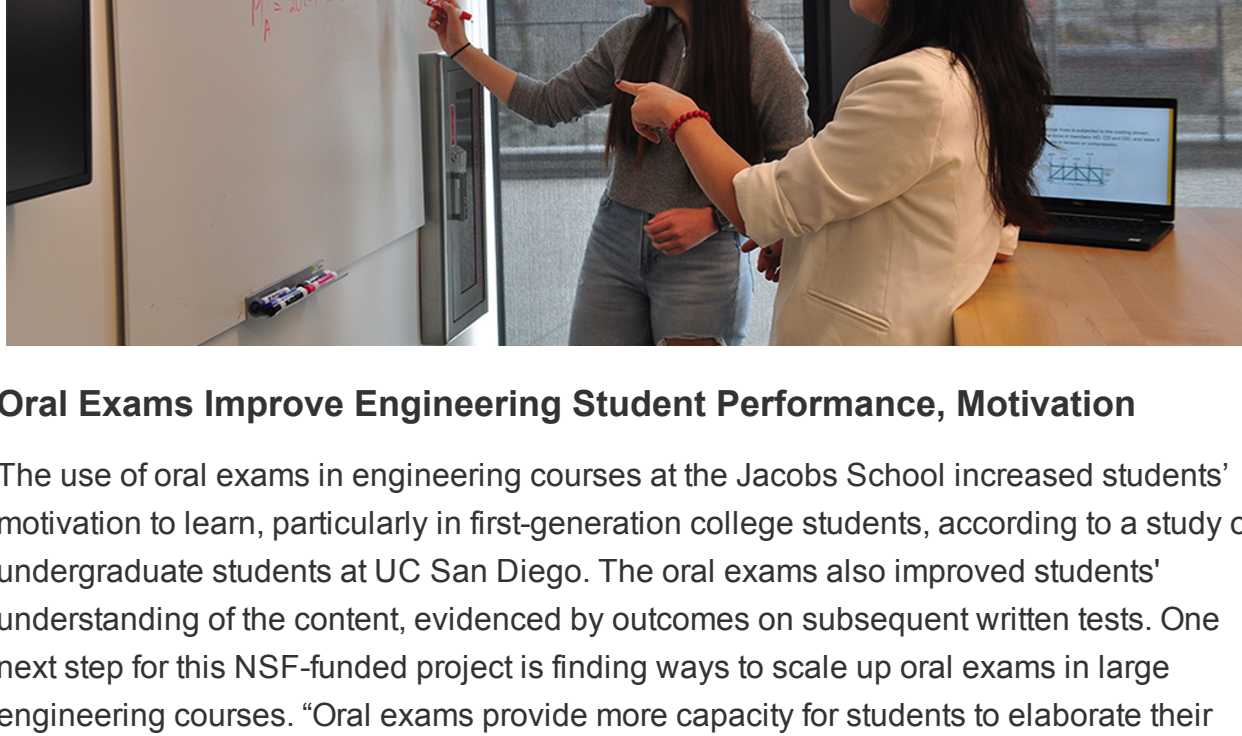
UC San Diego Jacobs School of Engineering



Toward Bioprinted Functional Human Tissues

Professor Shaochen Chen's nanoengineering lab is developing a platform technology for creating engineered tissues. The goal is to create new solutions for drug development and testing, organ transplants, regenerative medicine and more. His team recently removed significant barriers holding back one of the leading techniques for 3D-printing of these engineered tissues. The technique is called digital light processing (DLP) bioprinting. Removing the barriers allowed the team to print tissues with high cell densities, high cell viability, and finely resolved structures. In a new *Science Advances* paper, the team describes how they removed the barriers by reducing a problematic light-scattering effect by tenfold through the addition of a contrast agent to the bioink.

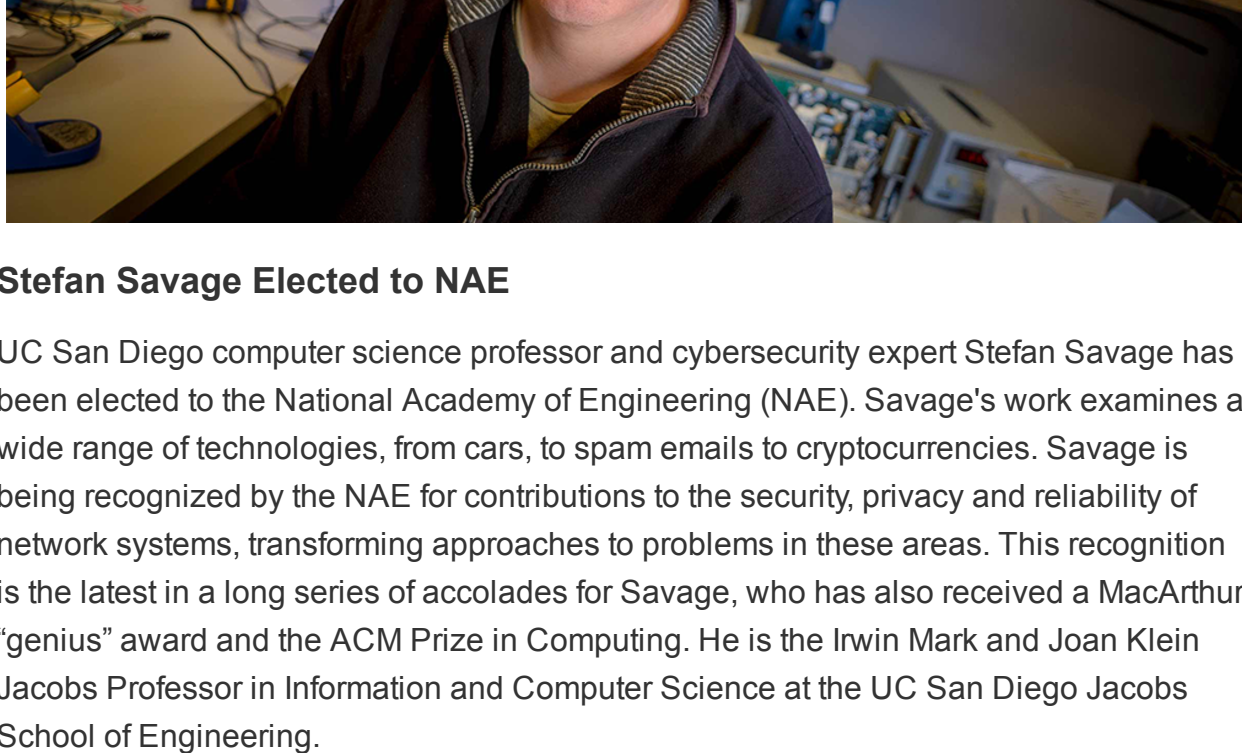
[Read More](#)



Oral Exams Improve Engineering Student Performance, Motivation

The use of oral exams in engineering courses at the Jacobs School increased students' motivation to learn, particularly in first-generation college students, according to a study of undergraduate students at UC San Diego. The oral exams also improved students' understanding of the content, evidenced by outcomes on subsequent written tests. One next step for this NSF-funded project is finding ways to scale up oral exams in large engineering courses. "Oral exams provide more capacity for students to elaborate their thought process and the problem solving strategy, not just rush right into the problem solving process and outcome," said Huihui Qi, a teaching professor in the mechanical and aerospace engineering department at UC San Diego and PI on the NSF grant.

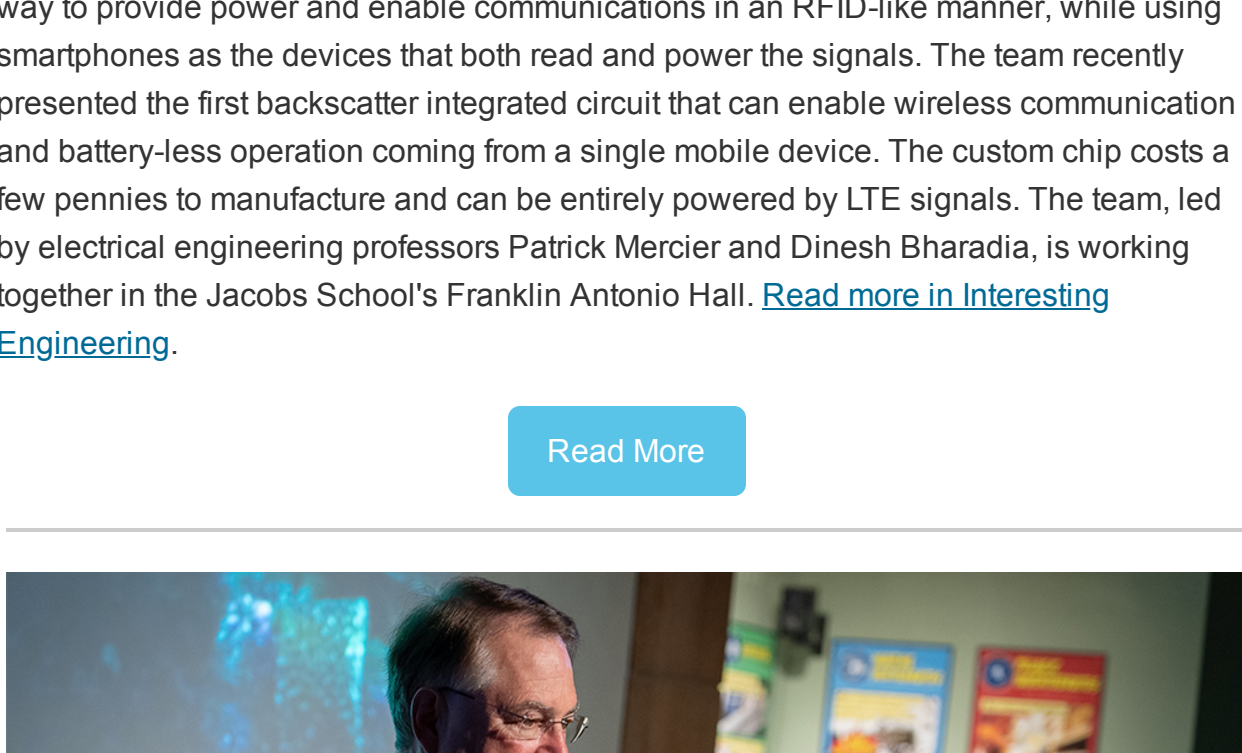
[Read More](#)



Stefan Savage Elected to NAE

UC San Diego computer science professor and cybersecurity expert Stefan Savage has been elected to the National Academy of Engineering (NAE). Savage's work examines a wide range of technologies, from cars, to spam emails to cryptocurrencies. Savage is being recognized by the NAE for contributions to the security, privacy and reliability of network systems, transforming approaches to problems in these areas. This recognition is the latest in a long series of accolades for Savage, who has also received a MacArthur "genius" award and the ACM Prize in Computing. He is the Irwin Mark and Joan Klein Jacobs Professor in Information and Computer Science at the UC San Diego Jacobs School of Engineering.

[Read More](#)



Better Battery-free Smart Tags

Electrical engineers at UC San Diego are creating better battery-free smart tags for things like inventory management. The team has developed a robust, low-cost and scalable way to provide power and enable communications in an RFID-like manner, while using smartphones as the devices that both read and power the signals. The team recently presented the first backscatter integrated circuit that can enable wireless communication and battery-less operation coming from a single mobile device. The custom chip costs a few pennies to manufacture and can be entirely powered by LTE signals. The team, led by electrical engineering professors Patrick Mercier and Dinesh Bharadia, is working together in the Jacobs School's Franklin Antonio Hall. [Read more in Interesting Engineering](#).

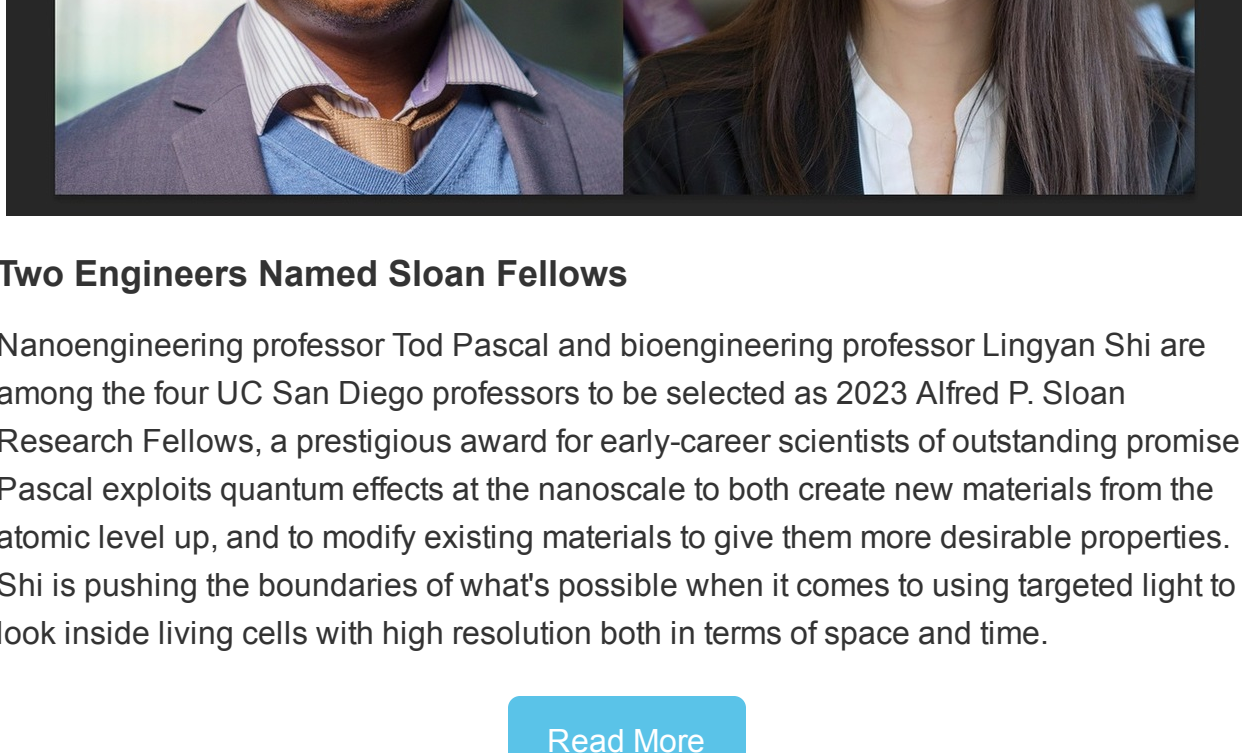
[Read More](#)



Celebrating Larry Smarr

At the most recent conference of The National Research Platform (NRP), held on campus, celebrating UC San Diego professor and visionary Larry Smarr was a key part of the program. The NRP facilitates high-speed data access for science and computation, made possible through partnerships connecting more than 50 institutions. At a conference event held in his honor, Smarr said, "As I think about all the wonderful things I've heard tonight and look at all of you, all of this is about collaboration. It's not about me. None of what I have done was done except with collaboration and partnership with some of the most extraordinary people in the world." Smarr has been on the computer science and engineering faculty at the Jacobs School since 2000. While he retired in 2020, he is very much active on campus.

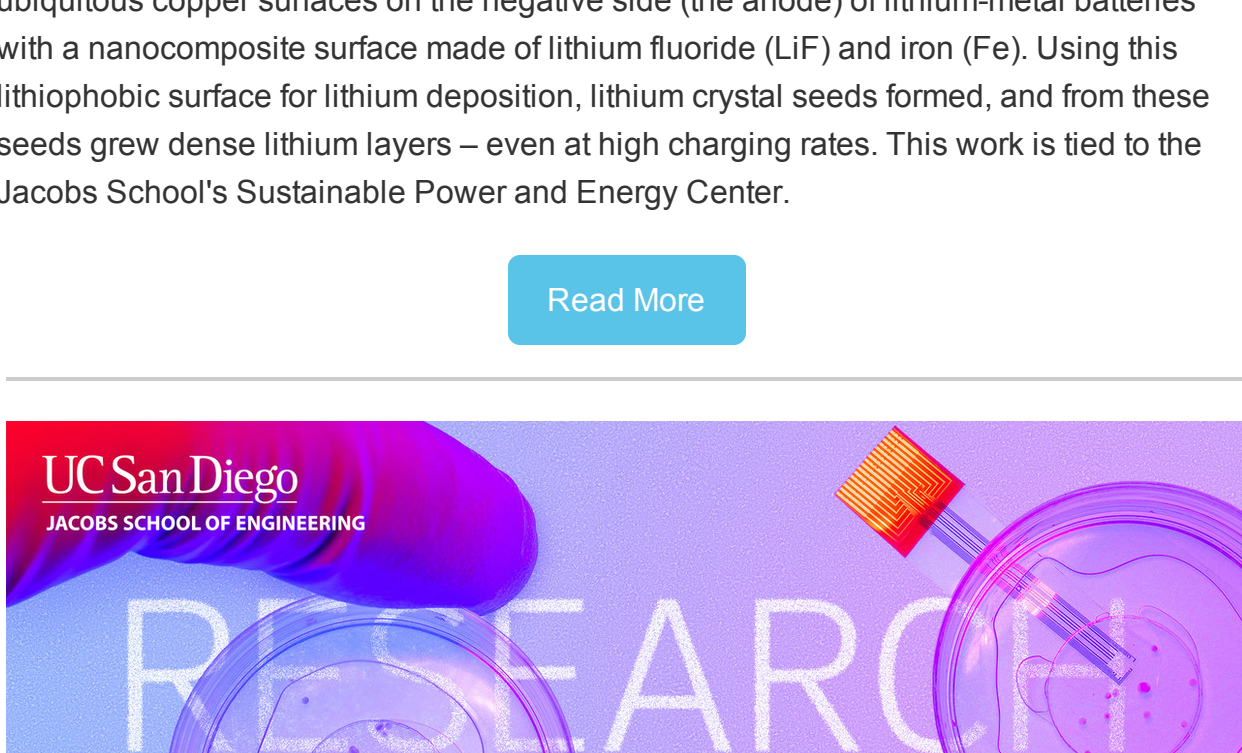
[Read More](#)



Undergrads Developing Low-cost Arctic Explorer

Jacobs School of Engineering undergraduates are developing a low-cost autonomous underwater vehicle that could soon help UC San Diego ocean researchers monitor glaciers melting in the Arctic. The team, called Yonder Deep, is one of the student organizations working in the Qualcomm Student Space in Franklin Antonio Hall here at the Jacobs School. "The Yonder Deep team is pushing the frontier of low-cost, high-value marine platforms for research in high-risk polar regions. This kind of work is critical to understanding sea level rise and developing systems for monitoring the Greenland ice sheet," said Grant Deane, a researcher in the Marine Physical Lab at Scripps Institution of Oceanography at UC San Diego who mentors the team.

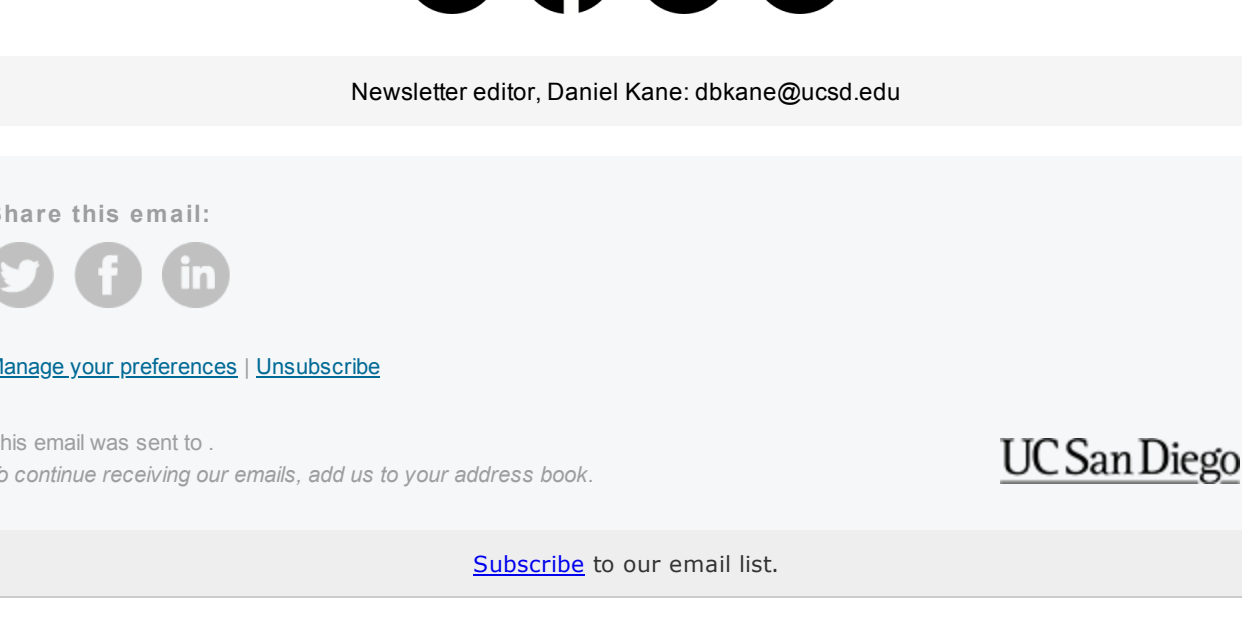
[Read More](#)



Fast-charging lithium-metal batteries

By growing uniform lithium crystals on a surprising surface, UC San Diego engineers have opened a new door to fast-charging lithium-metal batteries. In a *Nature Energy* paper, the Jacobs School nanoengineers report progress toward lithium-metal batteries that charge fast. To grow the lithium metal crystals, the researchers replaced the ubiquitous copper surfaces on the negative side (the anode) of lithium-metal batteries with a nanocomposite surface made of lithium fluoride (LiF) and iron (Fe). Using this lithiophobic surface for lithium deposition, lithium crystal seeds formed, and from these seeds grew dense lithium layers – even at high charging rates. This work is tied to the Jacobs School's Sustainable Power and Energy Center.

[Read More](#)



Join us for Research Expo on April 26

Looking to recruit top tech talent? Want to see the latest technologies in development, and talk with the graduate students and faculty bringing them to fruition? Join us on Thursday, April 26 for our 41st annual Jacobs School of Engineering Research Expo, to connect with students, faculty, alumni and industry partners of the #10 engineering school in the nation. Research Expo will be free of charge this year.

[Read More](#)

Did someone forward you this email? [Sign up](#) to receive this email in your inbox.

[Connect with the Jacobs School](#)

Newsletter editor, Daniel Kane: dbkane@ucsd.edu

Share this email:

[Manage your preferences](#) | [Unsubscribe](#)

This email was sent to .

To continue receiving our emails, add us to your address book.

UC San Diego

[Subscribe](#) to our email list.