



Message from the Chair

I hope you enjoy reading this Newsletter and catching up on the accomplishments of our students and faculty. While it is not reported below, an important milestone was reached in the month of October when, following years of San Diego State University leaders advocating for the ability to offer independent doctoral programs, California Governor Gavin Newsom signed Assembly Bill (AB) 656 which had passed unanimously in the Assembly. The bill permits universities in the California State University (CSU)

system, including SDSU, to now offer independent professional and applied doctoral degrees. More about this story can be read [here](#) at SDSU's News Center. Even more exciting is that one of the first programs to be proposed for the independent doctoral program is one in Advanced Manufacturing. An initial version of this proposal had been submitted by the Department in 2018 when the efforts began, but now that the bill has been signed, an updated and more broad-based version of the proposal involving faculty from across the College is being finalized. We thank our industry partners and dedicated alumni who have actively supported us in these efforts. The Department continues to grow in various ways. Dr. Lingping Kong, featured below, an expert in batteries and electrochemical energy storage, joined the Faculty in August. We have two searches currently open for Assistant Professor positions, one in Fire Research and the other in Energy Storage. In addition to this, there is a search to fill the position of Chair of the Department.

I am writing this in the middle of Homecoming Week at SDSU. Many alumni, parents, and friends are or will be on campus for the festivities and the football

game at Snapdragon Stadium on November 4. We would be glad to host you in the Department if you visit. If you are not able to attend Homecoming, please do not hesitate to visit us at any other time.

Sincerely,

John Abraham, Ph.D., Professor and Chair

[SDSU Mechanical Engineering](#)

[ME LinkedIn](#)

[ME Facebook](#)

Capstone Program News

Mechanical Engineering Fall Design Day 2023

Mechanical engineering capstone teams will showcase their projects at the fall Design Day on December 7th, 2023 in the EIS Courtyard. Additional information about ME capstone projects is available [here](#).

THE MECHANICAL ENGINEERING DEPARTMENT IN THE COLLEGE OF
ENGINEERING AT SAN DIEGO STATE UNIVERSITY PRESENTS:

Fall 2023 Senior Design Day



THURSDAY DECEMBER 7TH, 2023

1:00PM - 3:30PM

EIS COURTYARD

ALL ARE WELCOME!

Project Team Names

- Carlsmed: Interbody Insertion Simulator
- Collins Aerospace: Thermal Insulation Blankets for Commercial Aircraft Nacelles
- Icarus RT: Photovoltaic Panel Heat Extraction
- Johnson-Matthey: Simultaneous Automated Uniform Lapping Machine
- Masimo: Manufacturing Variables That Affect Thread-Forming Fasteners
- Naval Information Warfare Center (NIWC): Remote Operated Submersible Deployment System
- Naval Information Warfare Center (NIWC): Retractable Stealth Buoy
- Professor Subrata Bhattacharjee: The Characteristics of Flame Spread over Cylindrical Fuel Samples
- Professor Meysam Gharahcheshmeh: Thin Film Deposition in a Vacuum Chamber
- Professor Wenwu Xu: Rapid Heat Tube Furnace
- Student-Sponsored Project: Mobile Digital Alignment System



SDSU
Mechanical
Engineering

**SDSU Lunabotics Team Wins Big at
NASA Lunabotics Competition**

San Diego State University Lunabotics

team, Team Vulcan, returned from NASA's 2023 Lunabotics Competition as winners. Team Vulcan, won three awards for the 2023 NASA Lunabotics competition:

- 1st Place, Proof of Life. \$1,000
- 2nd Place for the Overall Competition. \$3,000
- 3rd place, Presentation and Demonstration. \$1,000



Read more [here](#).

SDSU Mechanical Engineering Senior Design Project Team

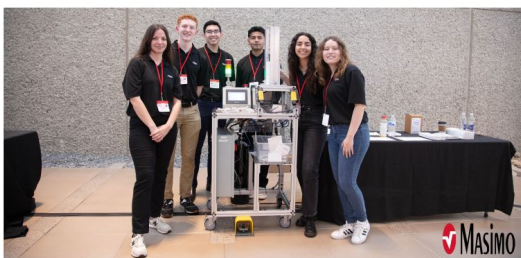
"Hot End Aeronautics" won first place in the categories of longest flight and most innovative design in the 3DPAC (3D Printed Aircraft Competition) held at CSU Los Angeles on May 20. Learn more [here](#).



Senior Design Project Teams Present at Masimo

Masimo is a sponsor of projects for our SDSU Senior Design Capstone Program. This past academic year, we completed three projects for Masimo. Our student teams successfully designed, analyzed, fabricated, assembled, testing, demonstrated and delivered three different systems to Masimo (in just 9 months).

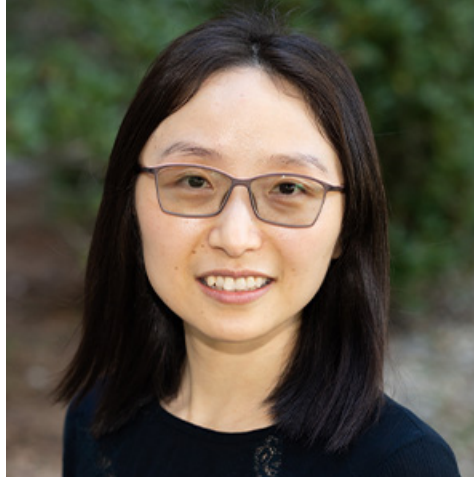
Read more [here](#).



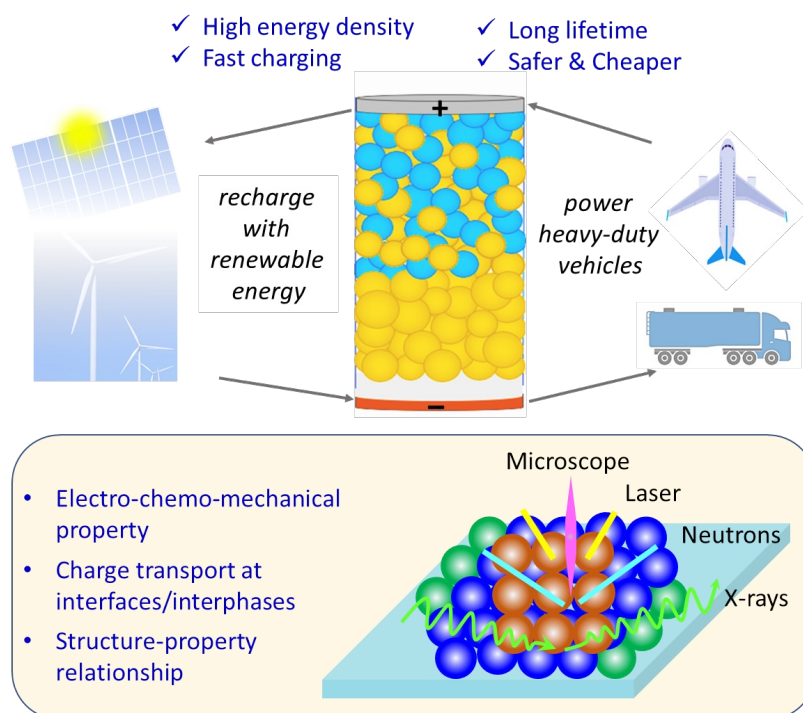
Faculty News

New Faculty Member Dr. Lingping Kong Advances Electrochemical Energy Storage Systems

The [Electrochemical Energy \(E2\) Lab](#) at SDSU focuses on advancing next-generation electrochemical energy storage systems with high energy density, fast charging capability, long lifetime, increased safety, and cost-effectiveness compared to conventional Li-ion batteries. E² lab also explores the relationship between structure-properties using operando characterization techniques to enhance battery material design.



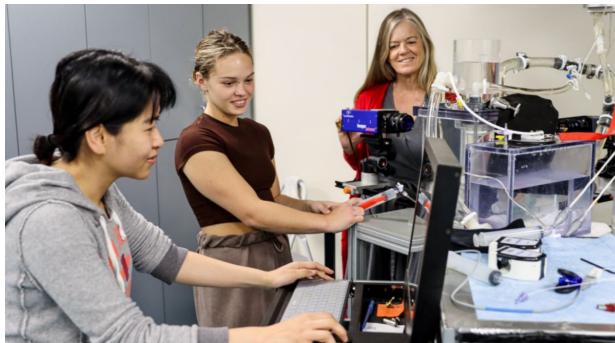
Next-generation Electrochemical Energy Storage Systems



[Dr. Eugene A. Olevsky](#), Dean and Distinguished Professor, Receives National and International Honors for His Pioneering Contributions to Materials Research

Dr. Olevsky has been elected as a Member of the World Academy of Ceramics

Dr. Olevsky is the recipient of the TMS Fellow Award – Class of 2024
Read more [here](#).



Dr. Karen May-Newman, Professor of Mechanical Engineering, has been named one of this year's 50 Top Women of Influence in Engineering by the San Diego Business Journal. Read more [here](#).

Dr. May-Newman is elected as a Fellow of the Biomedical Engineering Society

Mechanical Engineering Researchers Solve the 130+ Year Old Stefan Problem

Doctoral student Ramakrishnan Thirumalaisamy and his advisor **Dr. Amneet Bhalla**, Associate Professor of Mechanical Engineering, solves a 130+ year old unsolved fluid mechanics and heat transfer problem known as the Stefan problem. Stefan's problem describes the evolution of the boundary between two phases of a material undergoing a phase change, such as ice melting into water. In a recent [International Journal of Multiphase Flow paper](#), the researchers solved the Stefan problem analytically by considering density variation between the two phases. Read more [here](#).



Experimental Mechanics Laboratory News

New Foam for Sports Gear Discovered in Experimental Mechanics Laboratory

Please watch the interview of [Dr. George Youssef](#), Professor of Mechanical Engineering, on KBPS [here](#).



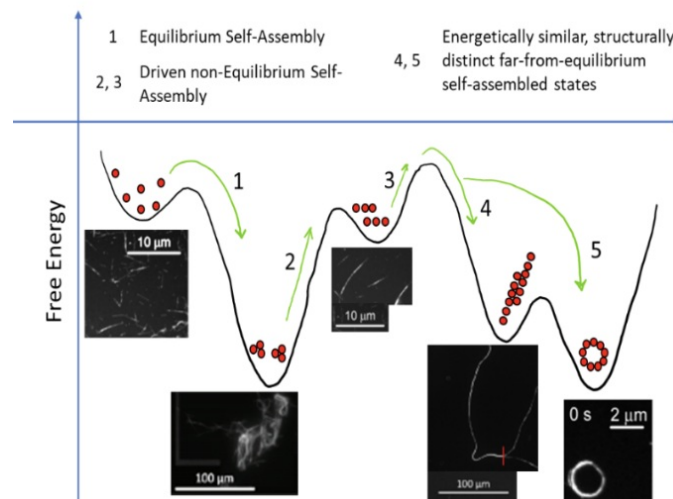
The EML has received a grant of \$798K from the Department of Defense (DoD) to conduct research on Nondestructive Evaluation of 3D Printed Composites using Terahertz Waves in the Experimental Mechanics Laboratory.

NEEC Awards \$225k to EML for Nondestructive Evaluation of Additively Manufactured Polymers and Composites

This project aims to employ terahertz wave (THz) technology for in-situ imaging and spectroscopy of 3D-printed fiber-reinforced polymer matrix composite parts. The approach is to integrate terahertz spectro-microscopic characterization within the print volume of a state-of-the-art CFPMCs printer, allowing for real-time inspection via the developed THz tomography based on in-situ imaging.

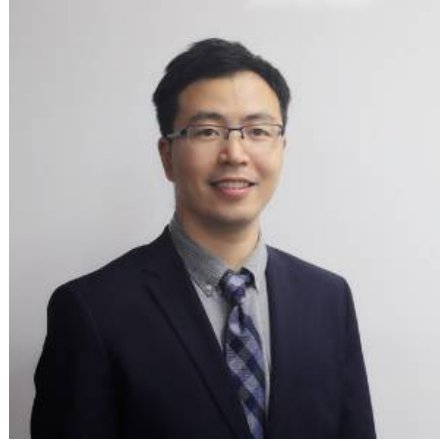
[Dr. Katira](#) leads a \$1.4 M effort on Non-Equilibrium Self-assembly funded by the Army Research Office

Dr. Parag Katira, Associate Professor of Mechanical Engineering, is the Lead PI on a \$1.4M project funded by the Materials Design Program at the Army Research Office of the Department of Defense to study self-assembly of matter into non-equilibrium structures and configurations. Dr. George Youssef, Professor Mechanical Engineering, and Dr. Henry Hess, Professor of Biomedical Engineering at Columbia University, are co-PIs on the project. Read more [here](#).



Assistant Professor, Dr. Yang Yang's paper on 3-D Printing of Nacre-Inspired Structures wins best paper award from the journal "Research"

Dr. Yang developed a rotation-blade casting-assisted 3D printing process to fabricate nacre-inspired structures with exceptional mechanical and flame-retardant properties.



Dr. Yang Yang is one of the organizers for the 2023 ASME International Manufacturing Science & Engineering Conference (MSEC).

STUDENT ORGANIZATIONS



Baja SAE team consists of 35+ members who are challenged every school year to design, test, and build a single seat off road buggy that will compete in 3 nation-wide events where 100 global universities are evaluated in static and dynamic events.



The **Mechatronics Club** consists of 40 members who are developing an



Aztec Electric Racing, commonly referred to as AER, is a 501(c)3 nonprofit, electric Formula SAE team at

Autonomous Underwater Vehicle (AUV) for the 2019 RoboSub Competition.

SDSU. They design, build, and race a small-scale, high performance race car each year.



ASME Club sponsors workshops, tours and guest speakers to prepare students for a career in the field of Mechanical Engineering.

BMES Mission: Our mission is to promote the education of our members by supporting academic and professional excellence, and innovative research.



Quality of Life + brings together America's brightest engineering students at leading universities nationwide to create life-transforming assistive technology for our country's injured and ill heroes. Their mission is to foster and generate innovations that aid and improve the quality of life for those who have served our country.

SDSU FACULTY PAGES

Dr. John Abraham, Dept
Chair

Dr. Fletcher Miller

Dr. Sara
Adibi

Dr. Kee Moon

Dr. Khaled

Dr. Asfaw
Beyene

Dr. Amneet
Bhalla

Dr. Subrata
Bhattacharjee

Dr. Joaquin Camacho

Dr. Meysam Heydari
Gharahcheshmeh

Dr. Sungbum (John)
Kang

Dr. Samuel
Kassegne

Dr. Parag Katira

Dr. Lingping
Kong

Dr. Karen May-
Newman

Morsi

Dr. Peiman
Naseradinmousavi

Dr. Zahra Nili
Ahmadabadi

Dr. Eugene
Olevsky

Dr. Sung-Yong (Sean)
Park

Dr. Elisa
Torresani

Dr. Wenwu
Xu

Dr. Yang Yang

Dr. George Youssef,
PE

ME Dept. Website

From the Baja Car to Senior Capstone Projects to Scholarship support,
your generous giving makes a tremendous difference for our students.
Please consider making a gift to support the Department of Mechanical
Engineering

[Give to the Department](#)



Mechanical Engineering

The Department of Mechanical Engineering is the vibrant home to about 1,200 undergraduate and graduate students, several active and award-winning student clubs and organizations, multiple teaching and research laboratories, internationally-renowned faculty who are dedicated teachers committed to the success of students while leading cutting-edge research in the fields of bioengineering, design, energy, manufacturing, materials, mechatronics, and robotics and control by employing advanced experimental and computational techniques, and dedicated and committed staff.

[Read More](#)



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