

# INSTITUTE FOR MATERIALS DISCOVERY AND DESIGN

WE DISCOVER  
DESIGN AND  
CHARACTERIZE  
ADVANCED  
MATERIALS  
HUMANITY  
NEEDS

## ENERGY MATERIALS

High-endurance solar cell, fuel cell and battery materials and devices.  
Biofuels, solar fuels, and sustainable energy conversion materials.  
Membranes, electrocatalysts and photocatalysts.

## ELECTRONIC MATERIALS

Quantum materials for quantum sensing, communication and computation.  
Materials for 5G/6G communications and 3D integration.  
Lasers and next-generation optical and display materials.

## BIO-INSPIRED MATERIALS

Therapeutic nanoparticles, small molecules, and proteins.  
Bio-inspired and bio-based materials.  
3D-printed medical implants; and biomedical devices.

"The first big win for the Institute is the \$18 million NSF grant funding a Materials Research Science and Engineering Center (MRSEC) at UC San Diego. This MRSEC capitalizes on three specific strengths at UC San Diego—our leadership in materials science, our leadership in the life sciences and our position as a national resource in high performance computing."

— Michael Sailor, Ph.D,  
Director, Institute for Materials Discovery and Design  
Director, Materials Research Science and Engineering Center

## DATA DRIVEN MATERIALS RESEARCH

## ADVANCED FABRICATION AND CHARACTERIZATION

## INNOVATION AND ENTREPRENEURISM ECOSYSTEM

We are forging new paths that weave together theoretical and experimental research approaches in order to leverage data to drive innovation.

We are world leaders in nano-scale materials fabrication and characterization. We apply this expertise to accelerate our materials discovery and design.

The people we train are empowered to capture the value of their innovations. Our students lead startups and transform companies large and small.

### Chemistry and Biochemistry

Mike Burkart  
Neal Devaraj  
Joshua Figueroa  
Andrew Kummel  
Francesco Paesani  
Michael Sailor  
Alina Schimpf  
Akif Tezcan

### Computer Science and Engineering

Qi (Rose) Yu

### Electrical and Computer Engineering

Eric Fullerton  
Yu-hwa Lo

### Mechanical and Aerospace Engineering

Prabhakar Bandaru  
Javier Garay  
Olivia Graeve  
Marc Meyers  
Lisa Poulikakos

### Molecular Biology

Rachel Dutton  
James Golden  
Susan Golden  
Stephen Mayfield

### NanoEngineering

Jinhye Bae  
Shaochen Chen  
David Fenning  
Darren Lipomi  
Ping Liu

Y. Shirley Meng

Shyue Ping Ong  
Tod Pascal  
Jon Pokorski  
Nicole Steinmetz  
Andrea Tao

### Physics

Monica Allen  
Chunhui Rita Du  
Alex Frano  
Ivan Schuller  
Oleg Shpyrko

### Structural Engineering

Hyunsun Kim

## BENEFITS OF PARTNERSHIP

- Industry-faculty-student research teams
- Recruit our top students
- Collaborate one-on-one with faculty
- Embed a visiting Industry Fellow in our labs
- Research Reviews
- Fast-track research agreements
- Access to commercialization engine with lab-to-market focus

## LEADERSHIP

### MICHAEL SAILOR

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## JOIN US.