



## Materials and Devices for Energy Conversion

UNDERGRADUATE SUMMER SCHOOL (3-WEEK ONLINE PROGRAM)  
AUGUST 5 - AUGUST 27, 2021  
APPLICATION DEADLINE: MAY 31



Grainger College of Engineering  
Department of Materials Science and  
Engineering Rankings

#5 Graduate Program  
Materials Science and Engineering

Program Fee: \$750

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伊利诺伊大学全球教育与培训 

### Program Description

The program offers students an introduction to Materials and Devices for Energy Conversion. Students will learn more about these emergent technologies from Illinois' expert faculty, who will lead students in a live online classroom space.

### Program Schedule

- Week 1** TEACHING ASSISTANT (TA) LED READING WEEK
- Week 2** LECTURES & TA LED Q&A
- Week 3** FINAL PROJECTS & PROGRAM WRAP-UP

TEACHING ASSISTANTS WILL SUPPORT A 1-HOUR DISCUSSION DAILY FOR BOTH SEMINAR AND READING WEEK.

### Online Format

Videoconference lectures will be synchronous.

Participants will need access to Wi-Fi and a device (computer, laptop, or tablet) suitable for participation in online videoconference sessions.



## DR. YINGJIE ZHANG

*Assistant Professor, Materials Science and Engineering*

Professor Zhang holds a Ph.D. in Applied Science and Technology from the University of California, Berkeley (2015). He received the Dorothy M. and Earl S. Hoffman Scholarship from the American Vacuum Society in 2014, the Graduate Student Award from the Materials Research Society in 2015, the Chinese Government Award for Outstanding Self-Financed Students Abroad in 2015, the Beckman Postdoctoral Fellowship at UIUC during 2015-2018, and the ACS PRF Doctoral New Investigator Award in 2019.

## Program Topics

### **MATERIALS AND DEVICES FOR ENERGY CONVERSION COURSEWORK (10 HOURS)**

The program introduces the fundamental mechanisms of the interconversion among solar energy, chemical energy, and electricity, and the materials processing methods for energy technologies. This course will discuss Solid state electronic transport and liquid-phase ionic conduction at the heart of semiconductor devices and electrochemical systems, etc.

### **TA-LED DISCUSSION SESSIONS (9 HOURS)**

A UIUC graduate student will lead discussions and answer questions during reading week and seminar week. Readings and discussions will further the students' knowledge and understanding of the course content.

### **Co-Curricular Sessions (4 HOURS)**

Enriching students' experiences by providing interactive resources for planning their overseas U.S. education.

- Q&A with PhD student: graduate applications & research skills; writing academic research reports
- Graduate College: how to be a successful graduate student
- Career Services: intercultural communication and personal branding
- Program recognition & learning outcome showcase, led by University of Illinois & GET staff members

There will be an additional 7 hours combined for program orientation, preparation and presentations of student final projects, and the program closing ceremony.

## Program Details

Students must be entering second year of college or later. Instruction equips students with preparation to complete projects.

Students are expected to participate in live discussions and problem solving during each live class session.

- All classes in English
- 30 hours of engagement
- Final project required
- Certificates awarded upon completion
- Course times 8:00 a.m. - 11:00 a.m. local China time
- Classes Monday through Friday
- Minimum of 50 students needed to run program

## CONTACT OUR TEAM

**MENG LIU**, PROGRAM COORDINATOR, [MENGLIU2@ILLINOIS.EDU](mailto:MENGLIU2@ILLINOIS.EDU)

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