

## UC SAN DIEGO NANOENGINEERING SEMINAR

Wednesday, February 6<sup>th</sup>, 2019  
Seminar Presentation: 11:00am – 12:00pm  
**SME 248**

***“Advanced nanomaterials design for energy conversion and storage systems”***

### **Dr. Yun Jung Lee**

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**Abstract:** Fabrication of advanced nanomaterials with multiple components, complex structure and integrated functionality has become a trend in material design for nanotechnology, especially for energy and environment. Inorganic-organic interface engineering is an efficient toolkit for this purpose. My research is focused on the materials design for energy and environment. The key functions are usually expressed in functional ceramics, for example, active materials or catalysts for electrochemical cells, and organic materials guide structural architecting in many cases. In this seminar, my research on materials design will be demonstrated in electrochemical energy cells. The solid catalysts such as metal nanoparticles, carbon nanomaterials, and functional ceramics were designed and applied to Li-air batteries. Weavable fibrous lithium ion batteries and planar lithium ion batteries with flexibility and high capacity were demonstrated through elaborate material design.

**Biosketch:** Yun Jung Lee is an associate professor at Hanyang University. She earned her B.S. degree and M.S. degree from Seoul National University. She received her Ph.D. degree in Department of Materials Science and Engineering from Massachusetts Institute of Technology in 2009. Upon completion of Ph.D., she worked as a postdoctoral fellow in the Materials Sciences Group at Pacific Northwest National Laboratory. In 2011, she joined Hanyang University and her research focuses on the advanced nanomaterials design for energy conversion and storage devices. Her research also includes bio-inspired nanochannel design for energy harvesting and water treatment. Prof. Lee received the Woman Scientist/Engineering of the Year Award from Korean Ministry of Science & ICT in 2017.