



UNIVERSITY OF MIAMI  
COLLEGE of  
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## University of Miami, Physics Department Colloquium

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**Date:** Wednesday, Oct 11, 2023  
**Time:** 4:00 pm – 5:00 pm  
**Location:** Wilder Auditorium – Rm 112, Knight Physics Building

# Novel Electronic Materials for Energy Generation and Storage

**Dr. Xiong Gong**

University of Akron

### **Abstract**

Solution-processed electronics for efficiently and economically harvesting and storing renewable energy have invoked extraordinary attention in both academic and industrial sectors in the past years. In this talk, I will share with you our studies on the development of novel electronic materials for energy generation and storage. I will present the development of efficient and stable perovskite solar cells (PSCs) based on novel hybrid inorganic-organic perovskites and ternary perovskite-organic composites. After that, I will present the development of novel device architectures for approaching efficient and stable PSCs with dramatically suppressed photocurrent hysteresis. Lastly, I would like to share a short story about how we fabricate wireless portable lightweight self-charging powered electronics through the integration of organic-perovskite tandem solar cells with all-solid-state supercapacitors.

### **Biography**

Currently, Dr. Xiong Gong is a Full Professor in the School of Polymer Science and Polymer Engineering at The University of Akron (UA). He also holds a secondary position as a Full Professor in the Department of Chemical, Biomolecular, and Corrosion Engineering at UA. Before that, he was a manager and senior scientist at CBRITE Inc. and a senior research scientist at the University of California Santa Barbara (UCSB) during the same period. Dr. Xiong Gong received B. Sc. in Chemistry, M. Sc. in Materials Science, and Ph. D. in Physics. He did a post-doc fellowship with Professor Alan Heeger (Nobel Prize Laureate) in the Physics Department at UCSB. Dr. Gong has accomplished 250+ articles published in peer-reviewed journals, with a peer citation ~ 29,000 times. He earned an H-index of 75. He also contributed 32 granted patents (6 licensed), 5 pending patents, and 8 book chapters. Dr. Gong received many international and national awards and honors including a fellow of the Royal Society of Chemistry, the world's most influential scientific minds, the top 1% of most cited researchers, the top 2% of the world's top scientists, NSF career award, Alexander von Humboldt fellowship, K. C. Wong Education Foundation fellow, the Louis A. Hill, Jr. award, 3M non-tenured faculty award, outstanding research award at UA. Dr. Gong currently serves as an associate editor for Organic Electronics and Emergent Materials and as an editorial board member for a couple of scientific journals.