

# WCGEC People

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**Yadong Yin**

Associate Professor of Chemistry

## WCGEC LEADERSHIP

**Reza Abbaschian, Director**

Distinguished Professor

Winston Chung Endowed Professor in Sustainability

**Nosang Myung, Co-Associate Director**

Director for UC-KIMS CIME

Professor of Chemical and Environmental Engineering

**Hamed Mohsenian-Rad, Co-Associate Director**

Associate Professor of Electrical and Computer Engineering

Director of UC-National Lab Center on Power

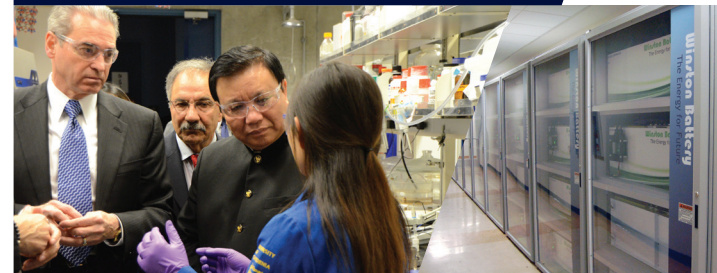
Distribution Cybersecurity



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**Winston Chung**  
Global Energy Center



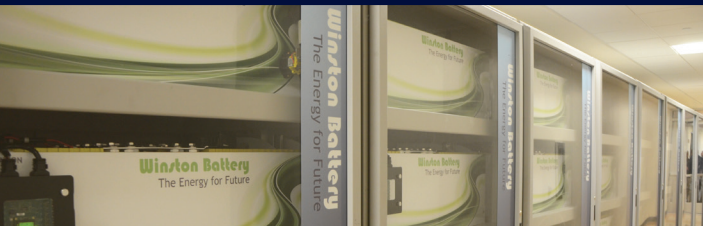
## Winston Chung Global Energy Center

is the home to 30 affiliated faculty members, covering a wide range of energy research activities. The two main tracks of research are integrated energy system and advanced energy generation and storage materials.

**WCGEC Mission:** *Research, Education, and Application — To take a holistic approach to addressing energy storage research needs and issues, broadly ranging from technical issues, economic development, and ecological wellness.*

WCGEC will advance solutions for today's energy storage demands, while developing far-sighted energy storage research and energy-use strategies for tomorrow's applications. Bridging the gap between industry and academia, the center will contribute to the economic, social and environmental health of communities around the world

# WCGEC Facilities



## Winston Chung Hall's 1.1 MWh Green Battery

One megawatt-hour of battery energy storage is installed at UC Riverside's Winston Chung Hall. The system is physically comprised of two 500 kilowatt-hour systems; each with its own inverter, battery management system (BMS), and control hardware. Each bi-directional inverter is capable of charging the batteries at a rate of up to 95kW, and discharging at up to 100kW/h. The BMS provides real-time data of the system, including pack state-of-charge, pack voltage, and pack current. The control hardware provides a gateway to inverter control, inverter data, and BMS data, and allows implementation of different control algorithms such as peak-shaving, and demand-response.



## WCGEC Lab

The Winston Chung Global Energy Center Lab is located in Bourns Hall on campus.

### Equipment

- Atomic Force Microscope
- Battery Cyclers
- Biologic Multi-Channel Potentio/Galvanostat
- Electrospinning system
- Agilent B1505A Power Device Analyzer
- Glove Box
- Newport Light source, Monochromator, & Chopper
- Photoelectrochemical Cell
- Near-field Electrospinning system



## Solar PV System

The Bourns Technology Center research campus is serving as home to the 500 kW photovoltaic power generation system and has been integrated with energy storage and smart grid monitoring and control. Solar generation is being optimized to reduce peak demand on the local distribution feeder. Facility power usage, monitoring, and control are being implemented for energy optimization strategies for daily power demand. Live data streams of the system are available at:

**[live.deckmonitoring.com/?id=uc\\_riverside%20](https://live.deckmonitoring.com/?id=uc_riverside%20)**



## 500 kWh Stationary Battery Energy Storage System at Bourns Technology Center

500 kilowatt-hours of battery energy storage are installed in Bourns Technology Center's 1200 building. This system has a similar design to the systems in Winston Chung Hall and uses the same components as well.



## Sustainable Integrated Grid Initiative

SIGI was established as part of the WCGEC and is located at Bourns Technology Campus. It is one of the largest integrated renewable energy projects of its kind in the state. This initiative has been developed specifically to research the integration of intermittent renewable energy, energy storage, and all types of electric and hybrid electric vehicles.



## 500 kWh Mobile Battery Energy Storage System

This system is the mobile unit of SIGI, was established jointly between the Winston Chung Global Energy Center and CE-CERT. The mobile nature of this system allows for connecting to the different buildings, and implementing different strategies. The trailer is also available for demonstration and field implementation at suitable electric utility feeder locations for congestion reduction.