COLLEGE OF ENGINEERING

# Chemical & Environmental Engineering

# GRADUATE STUDIES

*Striving for a sustainable world*


## Research Focus Areas

- Atmospheric physics and chemistry
- Bioremediation
- Electrochemical processes
- Interface and colloid science
- Nanotechnology
- Renewable energy
- Semiconductor manufacturing
- Soft materials
- Water treatment and reuse

## Affiliated Centers & Institutes

- Center for Environmentally Sustainable Mining
- Engineering Research Center for Environmentally Benign Semiconductor Manufacturing
- Institute for Energy Solutions
- Superfund Basic Research Center
- Sustainable Bioeconomy for Arid Regions Center
- Water & Energy Sustainable Technology Center

## Emphasis on Research

**$5.5M**

Research expenditures

## Degrees

- PhD Chemical Engineering
- PhD Environmental Engineering
- MS Chemical Engineering
- MS Environmental Engineering

"Courses were to the point and directly related to our field of work, and UA Engineering faculty are highly knowledgeable and always there to help."

**- Mojtaba Azadi Aghdam, WEST Center research assistant**

Funding options throughout degree lifecycle

## Application Deadlines

- Fall: January 15
- Spring: June 30

## Contacts

**Adam Printz**
*Chemical Engineering Graduate Committee Chair*
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**Andrea Achilli**
*Environmental Engineering Graduate Committee Chair*
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For more information, or to plan a visit:

**chee.engineering.arizona.edu**

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# Chemical & Environmental Engineering

> “We put a lot of time and energy into mentoring students and fostering leadership. That is a very important part of our job.”
>
> **- Kim Ogden, professor and director of the Institute for Energy Solutions**

## Faculty Expertise

**Andrea Achilli** – achilli@arizona.edu
membrane processes for water separation • desalination and water reuse technologies • forward osmosis and membrane distillation systems

**Jim Baygents** – baygents@arizona.edu
electrochemical water treatment

**Paul Blowers** – blowers@arizona.edu
life cycle assessment • applied quantum chemistry • student learning and retention

**Jim Farrell** – farrellj@arizona.edu
contaminant transport through soil and groundwater • abiotic transformations of chlorinated solvents

**Jim Field** – jimfield@arizona.edu
microbiology of inorganic contaminant biotransformation • anaerobic biodegradation of hazardous pollutants

**Dominic Gervasio** – gervasio@arizona.edu
concentrated solar power • electrolytes for DC power supplies • nonplatinum catalysts

**Roberto Guzmán** – guzmanr@arizona.edu
nanobiotechnology • affinity interaction technology • synthesis and modification of polymers

**Kerri Hickenbottom** – klh15@arizona.edu
concentrate management • membrane processes for resource recovery from waste streams • life cycle assessment

**Vicky Karanikola** – vkaranik@arizona.edu
optimization of materials, energy and cost for sustainable water and wastewater treatment • membrane processes at water-energy nexus • sensors for environmental applications

**Greg Ogden** – gogden@arizona.edu
biofuels

**Kimberly Ogden** – ogden@arizona.edu
bioreactors for algae • removal of organics and metals from streams • water recycling and reuse

**Minkyu Park** – minkyupark@arizona.edu
advanced oxidation

**Ara Philipossian** – ara@arizona.edu
planarization processes and post-planarization cleaning processes in integrated circuit manufacturing

**Adam Printz** – aprintz@arizona.edu
solar energy • polymeric materials • mechanical and chemical stability of flexible electronics

**Erin Ratcliff**– ratcliff@arizona.edu
energy conversion and biosensing • organic and perovskite phtovoltaics • solar fuels • printable biosensors • electrochemistry • interface science

**Eduardo Sáez** – esaez@arizona.edu
fate, transport and treatment of trace contaminants in water • transport of metals and metalloids by dust and aerosols

**Suchol Savagatrup** – suchol@arizona.edu
responsive soft materials • biochemical sensors • interfacial and colloidal behaviors of complex emulsions

**Farhang Shadman** – shadman@arizona.edu
nanoscale manufacturing • green semiconductor processing • water purification, reclamation and recycling

**Reyes Sierra** – rsierra@arizona.edu
anaerobic wastewater treatment and biological nutrient removal • microbial transformation of metals and metalloids

**Armin Sorooshian** – armin@arizona.edu
aerosol composition, size and water uptake • aerosol-cloud-precipitation interactions • cloud chemistry

**Sylvia Sullivan** – sylvia@arizona.edu
multi-scale modeling of in-cloud ice crystal formation, weather and complex global climate effects and modeling