

# XIAOFENG FENG

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## Education

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2014–2016	Stanford University, Stanford, CA Advisor: Prof. Matthew Kanan	Postdoctoral Scholar in Chemistry
2009–2013	University of California, Berkeley, CA Advisor: Prof. Miquel Salmeron	Ph.D. in Materials Science & Engineering
2007–2009	Tsinghua University, Beijing, China	M.S. in Physics
2003–2007	Peking University, Beijing, China	B.S. in Physics

## Experience

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2016–Present	Assistant Professor, Department of Physics and a Joint Appointment with Chemistry and Materials Science & Engineering, University of Central Florida
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## Honors and Awards

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Honorable Speaker for the Inorganic Chemistry Lecture Series, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences	2017
American Vacuum Society (AVS) Morton M. Traum Surface Science Award	2013
American Vacuum Society (AVS) Graduate Research Award	2013
Materials Research Society (MRS) Graduate Student Silver Award	2013
Chinese Government Award for Outstanding Self-Financed Students Abroad	2012
Chih-Kung Jen Prize, Tsinghua University	2009
Starlight International Media Fellowship, Peking University	2006
Chinese Academy of Sciences Fellowship, Peking University	2005
Dean's Award for Studying Excellence, Peking University	2004

## Teaching

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- Fall 2016: PHY 3802L – Intermediate Physics Laboratory
- Fall 2017: PHY 3802L – Intermediate Physics Laboratory
- Spring 2018: PHY 3802L – Intermediate Physics Laboratory
- **Current Advisees:**
  - Jun Wang: postdoc supported by UCF Preeminent Postdoctoral Program
  - Lin Hu: graduate student and recipient of UCF Doctoral Research Support Award
  - Amy Schwandes: undergraduate student supported by a NSF-funded T-LEARN program

## Publications (\* indicates corresponding author)

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- (1) Wang, J.; Yu, L.; Hu, L.; Chen, G.; Xin, H.;\* **Feng, X.**\* Ambient ammonia synthesis via palladium-catalyzed electrohydrogenation of dinitrogen at low overpotential. *Nat. Commun.* **2018**, *9*, 1795.
- (2) Lechner, B. A. J.; **Feng, X.**; Feibelman, P. J.; Cerda, J. I.; Salmeron, M.\* Scanning tunneling microscopy study of the structure and interaction between carbon monoxide and hydrogen on the Ru(0001) surface. *J. Phys. Chem. B* **2018**, *122*, 649–656.
- (3) Beh, E. S.; Basun, S. A.; **Feng, X.**; Idehenre, I. U.; Evans, D. R.; Kanan, M. W.\* Molecular catalysis at polarized interfaces created by ferroelectric BaTiO<sub>3</sub>. *Chem. Sci.* **2017**, *8*, 2790–2794.

### **Prior to joining UCF:**

- (4) **Feng, X.**; Jiang, K.; Fan, S.; Kanan, M. W.\* A direct grain-boundary-activity correlation for CO electroreduction on Cu nanoparticles. *ACS Cent. Sci.* **2016**, *2*, 169–174. (Journal Cover)
- (5) **Feng, X.**; Jiang, K.; Fan, S.; Kanan, M. W.\* Grain-boundary-dependent CO<sub>2</sub> electroreduction activity. *J. Am. Chem. Soc.* **2015**, *137*, 4606–4609.
- (6) **Feng, X.**; Cerdá, J. I.; Salmeron, M.\* Orientation-dependent interaction between CO<sub>2</sub> molecules adsorbed on Ru(0001). *J. Phys. Chem. Lett.* **2015**, *6*, 1780–1784.
- (7) Maier, S.; Stass, I.; **Feng, X.**; Sisto, A.; Zayak, A.; Neaton, J.; Salmeron, M.\* Dehydrogenation of ammonia on Ru(0001) by electronic excitations. *J. Phys. Chem. C* **2015**, *119*, 10520–10525.
- (8) **Feng, X.**; Wu, J.; Bell, A. T.; Salmeron, M.\* An atomic-scale view of the nucleation and growth of graphene islands on Pt surfaces. *J. Phys. Chem. C* **2015**, *119*, 7124–7129.
- (9) **Feng, X.**; Salmeron, M.\* Electronic screening in stacked graphene flakes revealed by scanning tunneling microscopy. *Appl. Phys. Lett.* **2013**, *102*, 053116.
- (10) **Feng, X.**; Kwon, S.; Park, J. Y.; Salmeron, M.\* Superlubric sliding of graphene nanoflakes on graphene. *ACS Nano* **2013**, *7*, 1718–1724.
- (11) **Feng, X.**; Maier, S.; Salmeron, M.\* Water splits epitaxial graphene and intercalates. *J. Am. Chem. Soc.* **2012**, *134*, 5662–5668.
- (12) **Feng, X.**; Chee, S. W.; Sharma, R.; Liu, K.; Xie, X.; Li, Q.; Fan, S.; Jiang, K.\* In situ TEM observation of the gasification and growth of carbon nanotubes using iron catalysts. *Nano Research* **2011**, *4*, 767–779.
- (13) **Feng, X.**; Liu, K.; Xie, X.; Zhou, R.; Zhang, L.; Li, Q.; Fan, S.; Jiang, K.\* Thermal analysis study of the growth kinetics of carbon nanotubes and epitaxial graphene layers on them. *J. Phys. Chem. C* **2009**, *113*, 9623–9631.
- (14) Xie, X.; Ju, L.; **Feng, X.**; Sun, Y.; Zhou, R.; Liu, K.; Fan, S.; Li, Q.; Jiang, K.\* Controlled fabrication of high-quality carbon nanoscrolls from monolayer graphene. *Nano Lett.* **2009**, *9*, 2565–2570.
- (15) Liu, K.; Sun, Y.; Chen, L.; Feng, C.; **Feng, X.**; Jiang, K.;\* Zhao, Y.;\* Fan, S. Controlled growth of super-aligned carbon nanotube arrays for spinning continuous unidirectional sheets with tunable physical properties. *Nano Lett.* **2008**, *8*, 700–705.
- (16) Xiao, L.;\* Liu, P.; Liu, L.;\* Jiang, K.;\* **Feng, X.**; Wei, Y.; Qian, L.; Fan, S.; Zhang, T. Barium-functionalized multiwalled carbon nanotube yarns as low-work-function thermionic cathodes. *Appl. Phys. Lett.* **2008**, *92*, 153108.
- (17) Wei, Y.; Jiang, K.;\* **Feng, X.**; Liu, P.; Liu, L.;\* Fan, S. Comparative studies of multiwalled carbon nanotube sheets before and after shrinking. *Phys. Rev. B* **2007**, *76*, 045423.

**Total citations = 1190** (Google Scholar, as of 04/25/2018).

### **Presentations**

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- (1) **Feng, X. (Invited)** Rational design of metal electrocatalysts for renewable energy conversion. *UCF Chemistry Department Seminar*, **Apr. 2018**, Orlando, FL.
- (2) **Feng, X. (Invited)** Producing oxygen and fuels from carbon dioxide on Mars: A chemical view. *Florida Space Institute – CLASS Seminar*, **Feb. 2018**, Orlando, FL.
- (3) **Feng, X.** Grain-boundary-supported active sites for electrochemical catalysis. *AVS 64<sup>th</sup> International Symposium & Exhibition*, **Nov. 2017**, Tampa, FL.
- (4) **Feng, X.** Grain boundary effect in electroreduction catalysis for renewable energy conversion. *232<sup>nd</sup> ECS Meeting*, **Oct. 2017**, National Harbor, MD.
- (5) **Feng, X. (Invited)** Grain boundary effect in electrochemical catalysis. *Changchun Institute of Applied Chemistry, Chinese Academy of Sciences*, **Sept. 2017**, Changchun, China.
- (6) **Feng, X. (Invited)** Grain boundary effect in electrochemical catalysis. *Dalian Institute of Chemical Physics, Chinese Academy of Sciences*, **Aug. 2017**, Dalian, China.
- (7) **Feng, X. (Invited)** Defect-Rich Metal Nanocatalysts for Electroreduction of CO<sub>2</sub> to Liquid Fuel. *Florida Solar Energy Center*, **Jan. 2017**, Cocoa, FL.

### **Prior to joining UCF:**

- (8) **Feng, X. (Invited)** Chemistry at Grain Boundaries: From Surface Science to Electrocatalysis. *University of Central Florida*, **Mar. 2016**, Orlando, FL.
- (9) **Feng, X. (Invited)** Chemistry at Grain Boundaries: From Surface Science to Electrocatalysis. *North Carolina State University*, **Mar. 2016**, Raleigh, NC.
- (10) **Feng, X.**; Kanan, M. W. Electroreduction catalysis with defect-rich metal nanoparticles. *AVS 62<sup>nd</sup> International Symposium & Exhibition*, **Oct. 2015**, San Jose, CA.
- (11) **Feng, X.**; Kanan, M. W. Grain boundary-supported active sites for CO<sub>2</sub> and CO electroreduction on metal nanoparticles. *Global Climate and Energy Project Energy Lectures*, **July 2015**, Stanford, CA.
- (12) **Feng, X.**; Kanan, M. W. **(Invited)** Defect-rich CO<sub>2</sub> reduction catalysts. *227<sup>th</sup> ECS Meeting*, **May 2015**, Chicago, IL.
- (13) **Feng, X.**; Kanan, M. W. Efficient electroreduction of CO<sub>2</sub> on vapor-deposited Au nanoparticles: Enhanced activity at grain boundaries. *2015 MRS Spring Meeting*, **Apr. 2015**, San Francisco, CA.
- (14) Lechner, B.; **Feng, X.**; Salmeron, M. Mixed structures of CO and H on Ru(0001) as precursor states for Fischer-Tropsch synthesis. *248<sup>th</sup> ACS National Meeting*, **Aug. 2014**, San Francisco, CA.
- (15) Wu, J.; Helveg, S.; **Feng, X.**; Salmeron, M.; Bell, A. T. Understanding coking on Platinum catalysts by in situ TEM. *248<sup>th</sup> ACS National Meeting*, **Aug. 2014**, San Francisco, CA.
- (16) **Feng, X.**; Salmeron, M. Water-induced splitting of epitaxial graphene and resulting graphene flakes. *AVS 60<sup>th</sup> International Symposium & Exhibition*, **Nov. 2013**, Long Beach, CA.
- (17) **Feng, X.**; Salmeron, M. Water-induced splitting of epitaxial graphene and resulting graphene flakes. *International Conference on Nanoscience & Technology, China*, **Sept. 2013**, Beijing, China.
- (18) **Feng, X.**; Salmeron, M. Water adsorption on epitaxial graphene: Unexpected strong reactivity of line defects. *2013 MRS Spring Meeting*, **Apr. 2013**, San Francisco, CA.
- (19) **Feng, X.**; Maier, S.; Salmeron, M. Water splits epitaxial graphene on Ru(0001) along grain boundaries. *AVS 58<sup>th</sup> International Symposium & Exhibition*, **Nov. 2011**, Nashville, TN.

### **Professional Service**

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- Served in the UCF Physics Outreach Committee, co-organized a Physics Career Exploration Day for hundreds of middle and high school students annually (2016, 2017), and contributed to other outreach activities such as the 2017 Central Florida Scouting Jamboree, UCF STEM Day, and UCF Faculty and Family Fun Sundays.
- Served in the UCF Physics Graduate Recruitment Committee and participated in activities such as the UCF Open House and the Physics Department Tag Line Contest.
- Co-organized and served as Session Chair of the AVS Florida Chapter (2017, 2018).
- Served as Moderator/Session Chair at the AVS 64<sup>th</sup> International Symposium and Exhibition and the 227<sup>th</sup> Electrochemical Society (ECS) Meeting.
- Served as National Science Foundation (NSF) Panel Reviewer (2017, 2018).
- Served as Peer Reviewers for scientific journals including Nature Catalysis, Physical Review Letters, Physical Review B, Applied Physics Letters, Journal of the American Chemical Society, Langmuir, ACS Applied Nano Materials, Chemical Communications, ChemSusChem, Scientific Reports, Carbon, etc.