

## CV of Franklin (Feng) Tao

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### Franklin (Feng) Tao

Miller Associate Professor  
University of Kansas

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### Professional Experience

- 08/2014- **University of Kansas**  
**Department of Chemical and Petroleum Engineering and Department of Chemistry**  
Tenured Miller Associate Professor
- 2010-2014 **University of Notre Dame**  
**Department of Chemistry and Biochemistry**  
Tenure-track Assistant professor
- 2006 -2010 **University of California, Berkeley, Department of Chemistry**  
**Lawrence Berkeley National Lab, Materials Science Division**  
Gabor A. Somorjai Group
- 2002-2006 **Princeton University**  
**PhD in Chemistry**  
Steven L. Bernasek Group
- 1999-2002 **National University of Singapore, Department of Chemistry**  
Research Scientist

### Editorial and Advisory Boards and Professional Services

- Advisory Editorial Board, *Chemical Society Reviews*, 2012-
- Editorial Board, *Scientific Reports*, Nature Publishing Group. 2012-  
(Handle manuscripts of catalysis submitted to *Scientific Reports* and make decision of manuscripts based on review reports)  
<http://www.nature.com/srep/about/index.html>
- Advisory Editorial Board, *Catalysis Science and Technology*, 2011-
- Editorial Board, *Science China Materials*, 2015-2020.

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- Editorial Board, **Materials**, MDPI. 2012-  
<http://www.mdpi.com/journal/materials/editors>
- Advisory Editorial Board, **Green**, De Gruyter, Germany. 2011-  
<http://www.degruyter.com/view/j/green>
- Guest Editor, Themed Issue of **Chemical Communications** on Topics of “Structure of Catalysts Particles from In-situ Electron Microscope” (Themed issue of 2014)
- Guest Editor, Themed Issue of **Chemical Society Reviews** on the Topic of “Bimetallic Nanocatalysts and Nanocatalysis” (Issue 24 of 2012)
- Guest Editor, Special Issue of **ChemCatChem** on the Topic of “Synthesis of Nanocatalysts”, (Issue 10 of 2012)
- Guest Editor, Special Issue of **ACS Catalysis** on the Topic of “Operando and In-situ Studies of Catalysis”. (Issue 11 of 2012)
- Editor of Book Entitled “**Heterogeneous Catalysis at Nanoscale for Energy Applications**”, Wiley, 2014.
- Editor of Book Entitled “**Metal Nanoparticles for Catalysis: Advances and Applications**”, RSC Catalysis Series, RSC, 2014.
- Editor of Book Entitled “**Functionalization of Semiconductor Surfaces**”, Wiley, 2012.
- Advisory Board of **10<sup>th</sup> International Workshop on Oxide Surfaces (IWOX-X)**.
- Executive Committee, **Division of Colloid and Surface Chemistry of ACS**.
- Review Panel of Chemical Catalysis Program of **National Science Foundation**.

### Honors and Awards

- National Science Foundation CAREER Award, 2014.
- Elected Fellow, *Royal Society of Chemistry*, 2013.
- Paul Holloway Award, American Vacuum Society, 2012.
- Gerhard Ertl (Nobel Laureate 2007) Young Investigator Award (Finalist Prize with Certificate with Signatures) for Research Excellent in Surface Science, 2010.
- *Eugene P. Wigner* (Nobel Laureate 1963) Fellow, Oak Ridge National Lab, 2010.  
[http://www.ornl.gov/adm/wigner\\_fellowship/](http://www.ornl.gov/adm/wigner_fellowship/)
- Outstanding Young Researcher Award for Postdoctoral Research Fellow (for studies of catalysis of nanoparticles), American Vacuum Society, 2009.  
<http://www2.avv.org/symposium/AVS56/pdfs/abstractbook.pdf>
- *IUPAC Prize for Young Chemists* (IUPAC: International Union of Pure and Applied Chemistry), 2007.  
<http://old.iupac.org/news/prize.html>
- *Harold W. Dodds* Honorary Fellowship, Princeton University, 2005.  
<http://gradschool.princeton.edu/financial/fellowships/competitive/>
- Materials Research Society (MRS) Graduate Research Silver Award for Particularly Significant and Timely Research, 2005.  
[http://www.mrs.org/s\\_mrs/sec.asp?CID=1800&DID=68720](http://www.mrs.org/s_mrs/sec.asp?CID=1800&DID=68720)
- American Vacuum Society (AVS) Graduate Research Award for Outstanding Scholarship, 2004.  
<http://www.avv.org/inside.awards.aspx>
- *Hugh Stott Taylor* Merit Prize (2002-2005), Princeton University.

- University Fellowship (2002-2006), Princeton University
- *Schering-Plough* Presentation Award, International Chemical Conference-II (SICC-II) at Singapore, 2001

### Invited Lectures during Independent Career (2010-)

- **AVS 2014 61<sup>st</sup> International Symposium**  
November 11-13, 2014  
Scanning Probe Microscopy Focus Topic  
Title: Tracking Surface Structure of Catalysts under Reaction Condition and during Catalysis
- **University of Oklahoma**  
School of Chemical, Biological & Materials Engineering  
October 2, 2014  
Department Seminar
- **The 3<sup>rd</sup> International Symposium on Advanced Electron Microscopy for Catalysis (Fritz Haber Institute of the Max Planck Society, Germany)**  
September 3-6, 2014  
Title: Understanding of Surface and Near Surface Region of Metal Catalysts under Reaction Conditions  
<http://www.emcat2014.org/pages/invitedtalks.html>
- **ACS 2014 Fall**  
August 10-14, 2014  
Advances in In-situ and Operando Studies of Catalysts from Nano to Mesoscale  
Title: In-situ Studies of Transition Metal Oxide Catalysts.
- **APS 2014 March Meeting**  
March 3-7, 2014  
Symposium: Surface Chemistry and Catalysis  
Title: Exploration of Surface Chemistry and Structure of Catalysis under Reaction Condition and during Catalysis with Surface Sensitive In-situ Techniques
- **University of Pittsburgh**  
**Department of Chemical and Petroleum Engineering**  
October 11, 2013  
Departmental seminar  
Title: Tuning Catalysis through Phase Transition of Singly Dispersed Metal Atoms
- **ACS 2013 Fall Indianapolis**  
September 7-12, 2013  
Symposium: Frontiers in energy conversion and fuel production  
Title: Catalytic performances and in-situ surface chemistries of ceria doped with palladium, platinum, and rhodium in methane partial oxidation for production of syngas
- **ACS 2013 Spring New Orleans**  
April 7-11, 2012  
Symposium: Nanostructured Catalysts and Catalysis  
Title: Operando and In-situ Studies of Bimetallic Catalysts
- **American Vacuum Society 59<sup>th</sup> International Symposium and Exhibition**  
Oct 28-Nov 2, 2012

Paul Holloway Award Talk: Surface Chemistry and Structure of Alloy Thin Films under Reaction Conditions and their Correlations to Catalytic Performances of CO<sub>2</sub> Conversion and Methane Partial Oxidation.

➤ ***Microscopy and Microanalysis 2012***

July 29-August 2, 2012

Symposium: Surface and Subsurface Analysis.

Title: Design of Ambient Pressure XPS (AP-XPS) Using Bench-Top X-Ray Source and High-Pressure High-Temperature STM and Applications to Operando Studies of Catalysis.

➤ ***University of Science and Technology of China***

***Department of Chemistry***

June 13, 2012

Departmental Seminar

Title: Action of Nanocatalysts under Reaction Conditions.

➤ ***7th Sino-US Nano Forum***

June 8-11, 2012

Title: Action of Nanocatalysts under Reaction Conditions and Characterization using New Ambient Pressure Techniques.

➤ ***Uppsala University, Sweden***

Department of Chemistry

April 19, 2012

Department Seminar

Title: Exploration of restructuring of nanocatalysts using ambient pressure XPS

➤ ***ACS 2012 Spring San Diego***

March 29, 2012.

Symposium: Catalysis for Clean Energy Technologies.

Title: Operando studies of catalyst surfaces toward energy conversion and environmental remediation.

➤ ***ACS 2012 Spring San Diego***

March 28, 2012

Symposium: CO<sub>2</sub> Capture, Sequestration, Conversion and Utilization.

Title: Studies of CO<sub>2</sub> reduction with H<sub>2</sub> on oxide-based catalysts.

➤ ***National University of Singapore***

***Institute of Materials Research and Engineering (IMRE)***

Sep 3-5, 2011

Institute Seminar

Title: Catalysis at Nanoscale toward Energy Applications

➤ ***Argonne National Laboratory***

April 28-29, 2011

Workshop: Chemically Synthesized Nanoparticles and Catalysis.

Title: Integration of Ambient Pressure Photoelectron Spectroscopy into Studies of Nanocatalysts

➤ ***33rd Annual Symposium on Applied Surface Analysis, American Vacuum Society***

April 11-13, 2011

Title: Application of In-situ Photoelectron Spectroscopy to Studies of Materials

### Patents

1. **Tao, F.**; Salmeron, M.; Somorjai, G. A. "New High-resolution High-pressure High-temperature Scanning Tunneling Microscope", U.S. patent, applied (IB-2735).  
<http://www.lbl.gov/Tech-Transfer/techs/lbnl2735.html>

### Professional Services

- Organizing Committee Member, **International Summit on Past and Present Research Systems of Green Chemistry**, August 25-27, 2014, Philadelphia, USA
- Champion of AVS-61<sup>st</sup> Focus Topic Program "**In-situ Spectroscopy and Microscopy**", November 11-13, 2014, Baltimore, MD
- Co-Organizer of Symposium, "**Carbon Management: Recent Advances in Carbon Capture, Conversion, Utilization and Storage**", 248<sup>th</sup> ACS National Meeting & Exposition, August 10-14, 2014, San Francisco, CA.
- Co-Champion of AVS-60<sup>th</sup> Focus Topic Program "**In-situ Spectroscopy and Microscopy**", October 27-November 1, 2013, Long Beach, CA.
- Organizer of Symposium, "**Surface Chemistry of Metal and Oxide Catalysts under Reaction Conditions and during Catalysis**", 247<sup>th</sup> ACS National Meeting & Exposition, March 16-20, 2014, Dallas, TX.
- Organizer of Symposium, "**Experimental and Theoretical Studies of Catalysts from Surface Science Point of View: Ex-situ, In-situ, and Operadno Studies**", 246<sup>th</sup> ACS National Meeting & Exposition, September 7-12, 2013, Indianapolis, Indiana.
- Organizer of Symposium, "**Catalysis and Catalysts for Energy and Fuels**", 246<sup>th</sup> ACS National Meeting & Exposition, September 7-12, 2013, Indianapolis, Indiana.
- Co-Organizer of Symposium "**Catalysts for Energy Conversion and Storage**", 245<sup>th</sup> ACS National Meeting & Exposition, April 7-11, 2013, New Orleans, Louisiana.
- Chair of Symposium "**In-situ Studies of Surfaces and Nanomaterials for Heterogeneous Catalysis**" for MRS 2011 spring meeting at San Francisco.
- Co-organizer of Symposium B "**Chemical and Molecular Modification at Interfaces**" of **International Conference on Materials for Advanced Technologies** (ICMAT), Singapore, 2005.
- Review Panel of Proposals of **Center for Functional Nanomaterials (CFN)** of DOE Located at Brookhaven National Lab in the term of 2011-2013.
- Editor of Book Titled "**Functionalization of Semiconductor Surfaces**" for Wiley, 2012.
- Editor of Book Titled "**Heterogeneous Catalysis at Nanoscale for Energy Applications**" for Wiley, 2014.
- Editor of Book Titled "**Metal Nanoparticles for Catalysis: Advances and Applications**" for RSC, 2014.
- Referee of Research Articles invited by editors of *Nature*, *Science*, *Chemical Science*, *the Journal of the American Chemical Society*, *Nano Letters*, *Angewandte Chime*, *Journal of Physical Chemistry C and Letters*, *Journal of Vacuum Science and Technology*, *Journal of Crystal Growth*, and *Materials Chemistry and Physics*.
- Review Panel of Chemical Catalysis of National Science Foundation (NSF).
- Proposal Reviewer of Research Proposals of the U.S. Department of Energy (DOE).
- Proposal Reviewer of National Sciences Foundation (NSF).

### Department/University Services

- University Library Committee (2014-)
- Departmental Graduate Recruiting Committee (2014-)
- Departmental Graduate Studies Committee (2012-2014)
- Department of Graduate Recruiting Committee (2010-2012)

### Teaching at University of Notre Dame

**Undergraduate student courses**

CHEM/CBE 40477 / CHEM/CBE 60577

Title: Nanoscience & Nanotechnology

CHEM 30321

Title: Physical Chemistry (Thermodynamics)

**Graduate student course**

CHEM 90647

Title: Surface Science

**Affiliations**

1. American Chemical Society
2. Royal Society of Chemistry
3. American Association for the Advancement of Science
4. American Physical Society
5. American Vacuum Science and Technology Society
6. Materials Research Society