



MICHAEL S. WONG, PhD

EDUCATION AND TRAINING

California Institute of Technology	Chemical Engineering	BS	1994
Massachusetts Institute of Technology	Chemical Engineering Practice	MS	1997
Massachusetts Institute of Technology	Chemical Engineering	PhD	2000
University of California, Santa Barbara	Postdoctoral Research		2000-2001

PROFESSIONAL APPOINTMENTS

Graduate Research Assistant	Massachusetts Institute of Technology	1995-2000
Postdoctoral Research Associate	University of California, Santa Barbara	2000-2001
Assistant Professor	Rice University	2001-2007
Associate Professor	Rice University	2007-2010
Professor	Rice University	2010-present
Department Chair	Rice University	2014-present
W. M. McCardell Chair	Rice University	2019-present

Department Chair and Professor of Chemical and Biomolecular Engineering,
Professor of Chemistry, Professor of Civil and Environmental Engineering, Professor
of Materials Science and NanoEngineering

RESEARCH BACKGROUND AND INTERESTS

My research program broadly addresses chemical engineering problems using heterogeneous catalysis and materials chemistry. A key program objective is to develop scientific principles that improve our ability to sustainably manage our natural resources (water, hydrocarbons). The Catalysis and Nanomaterials Laboratory has contributed designer catalysts for clean/usable water; petroleum deviscosification catalysts; a spectroscopic tool to monitor chemical reactions *in aqua*, nanoparticle-assembled microcapsules for deliverable therapies; among others.

SELECTED HONORS AND AWARDS

NAE Japan-America Frontiers of Engineering (JAFOE) Symposium, Invited Participant	2002
Ralph E. Powe Junior Faculty Enhancement Award, Oak Ridge Associated Universities	2003
3M Non-tenured Faculty Award	2006, 2007
NAE Indo-America Frontiers of Engineering Symposium, Invited Speaker	2006
MIT Technology Review TR35 Young Innovator Award	2006
American Institute of Chemical Engineers (AIChE) Nano Young Investigator Award	2006
Smithsonian Magazine "37 Under 36" Young Innovator Award	2007
Rice University Graduate Student Association Faculty Teaching/Mentoring Award	2011
AIChE South Texas Section Best Fundamental Paper Award	2009, 2012
AIChE South Texas Section Best Applied Paper	2006, 2011, 2013
Guest Professorship, Dalian Institute of Chemical Physics, Dalian, China	2013-2017
Award for Excellence in Applied Catalysis, North American/Southwest Catalysis Society	2015
Fellow of American Chemical Society	2018
Joe W. Hightower Greater Houston Section Award, American Chemical Society	2018
Southwest Region ACS Award (highest honor given by the regional affiliate)	2019

SELECTED SERVICE ACTIVITIES

United States Army Science Board, Member	2018-2020
ACS Division of Catalysis Science & Technology (CATL), Past Chair	2018-2019
Kirkpatrick Chemical Engineering Achievement Award (<i>Chemical Engineering</i> magazine), Board of Judges	2017, 2019
AIChE Nanoscale Science and Engineering Forum (NSEF), <i>Chair, Vice Chair, Second Vice Chair, Director of Communications, Past Chair</i>	2011-2012
Southwest Catalysis Society (SWCS), Chapter of the North American Catalysis Society (NACS), <i>Chair, Chair-elect, Secretary, Past Chair</i>	2010-2011

SELECTED OUTREACH AND MENTORSHIP ACTIVITIES

On-air expert on Arkema chemical accident (Hurricane Harvey) KHOU, NPR	2017
National Geographic <i>Mysteries of the Unseen World 3D</i> movie, 2013 release year, Consultant	2013
Phi Lambda Upsilon (PLU) national honorary society, Rice Chapter Councilor	2003-2012

SELECTED EDITORIAL ACTIVITIES

Catalysis Today , Elsevier, Guest Editor	2019
Applied Catalysis B: Environmental , Elsevier, Editorial Board Member	2012-present
Chemistry of Materials , ACS, Editorial Advisory Board Member	2008-2015

EXAMPLE PUBLICATIONS (>140 published; *Google Scholar* #cites > 10,000, h-index > 50)

- M. O. Nutt, J. B. Hughes, and M. S. Wong, "Designing Pd-on-Au Bimetallic Nanoparticle Catalysts for Trichloroethene Hydrodechlorination," **Environ. Sci. Technol.** 39, 1346 (2005)
- K. N. Heck, B. G. Janesko, G. E. Scuseria, N. J. Halas, and M. S. Wong, "Observing Metal-catalyzed Chemical Reactions in situ using Surface-enhanced Raman Spectroscopy on Pd-Au Nanoshells," **J. Am. Chem. Soc.** 130, 16592-16600 (2008)
- J. Yu, D. Javier, M. A. Yaseen, N. Nitin, R. Richards-Kortum, B. Anvari and M. S. Wong, "Self-assembly Synthesis, Tumor Cell Targeting, and Photothermal Capabilities of Antibody-coated Indocyanine Green Nanocapsules," **J. Am. Chem. Soc.** 132, 1929-1938 (2010).
- M. D. Blankschien, L. A. Pretzer, R. Huschka, N. J. Halas, R. Gonzalez, and M. S. Wong, "Light-triggered biocatalysis using thermophilic enzyme-gold nanoparticle complexes," **ACS Nano** 7, 654-663 (2013)
- S. Guo, K. N. Heck, S. Kasiraju, H. Qian, Z. Zhao, L. C. Grabow, J. T. Miller, and M. S. Wong, "Insights into Nitrate Reduction over Indium-Decorated Palladium Nanoparticle Catalysts" **ACS Catal.** 8, 503 (2018)
- C. A. Clark, K. N. Heck, C. D. Powell, and M. S. Wong, "Highly Defective UiO-66 Materials for the Adsorptive Removal of PFOS" **ACS Sustainable Chem. Eng.** 7, 6619 (2019)
- K. N. Heck, S. Garcia-Segura, P. Westerhoff, and M. S. Wong, "Catalytic Converters for Water Treatment" **Acc. Chem. Res.** 52, 906 (2019)

PRESENTATIONS (355+ presentations, 230+ invited lectures)

CUMULATIVE RESEARCH FUNDING (>\$21MM)