

## **Curriculum Vitae - Renyi Zhang**

Department of Atmospheric Sciences and Department of Chemistry

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### **Education**

Ph.D., 1993, Atmospheric Chemistry, MIT (Advisor: Chemistry Nobel Laureate, Mario J. Molina); M.S., 1989, Physics, University of Nevada-Reno; B.S., 1983, Atmospheric Science, Nanjing Institute of Meteorology

### **Current Research Activity**

Analytical/physical/environmental/atmospheric chemistry. Kinetics and mechanisms of gas-phase and heterogeneous reactions. Laboratory studies of nucleation, growth, and chemical and physical properties of atmospheric aerosols. Atmospheric measurements of trace gas species and aerosols. Modeling of photochemistry and urban and regional air pollution. Assessment of aerosol-cloud-climate interaction. Establishment of Megacity Integrated Climate and Air Quality Sustainability Alliance (MICASA). Establishment of an EPA Clean Air Research Center

### **Professional Experience**

Editor, Journal of Geophysical Research – Atmospheres, 2009 - present

Chang-Jiang Professorship, Peking University, 2009 - present

Director, Center for Atmospheric Chemistry and Environment, Texas A&M University, 2007 - present

Professor, Department of Chemistry, Texas A&M University, 2007 - present

Adjunct Professor, Nanjing University of Information Science and Technology, China, 2006 – present

Professor, Department of Atmospheric Sciences, Texas A&M University, 2005 – present

Associate Professor, Department of Atmospheric Sciences, Texas A&M University, 2002 - 2005

Assistant Professor, Department of Atmospheric Sciences, Texas A&M University, 1997 - 2002

Research Associate, 1996-1997, Department of Chemistry and Department of Earth, Atmospheric, and Planetary Sciences, MIT

Post Doctoral Research Associate, 1993-1996, Chemical Kinetics and Photochemistry Group, Jet Propulsion Laboratory, California Institute of Technology

### **Honors**

Holder of Harold J. Haynes Endowed Chair in Geosciences, Texas A&M University, 2010

Cheung-Kong Distinguished Scholar Award, Ministry of Education - China, 2009

Bush Excellence Award for Faculty in International Research, Texas A&M University, 2009

Outstanding International Research Collaboration Award, China National Science Foundation, 2007

Honorary Professorship, Fudan University, China, 2007

Distinguished Achievement Award for Faculty Research, College of Geosciences, Texas A&M University, 2002

NASA New Investigator Award, 1999 - 2002

Invited speaker in Atmospheric Chemistry Colloquium for Emerging Senior Scientists (ACCESS), Harvard University, 1993

NASA Graduate Fellowship, 1990 - 1993

### **Society Memberships/Professional services**

American Chemical Society (ACS); American Geophysical Union (AGU); American Meteorological Society (AMS); American Association for Aerosol Research (AAAR)

Served on the AMS Committee on Atmospheric Chemistry since 2006 and as co-chair since 2008;

Steering Committee of the Science Coordinating Committee, Texas Commission on Environmental Quality (TCEQ), 2003-present

Journal reviewer for 36 scientific journals and proposal reviewer for 9 national and international funding agencies

### **Research Experience**

Over 40 research projects funded by NSF, EPA, NASA, DOE, Welch Foundation, Texas Commission on Environmental Quality, etc., with a total amount exceeding \$7M as principle investigator since 1998

**Currently Funded Projects:** (1) *Collaborative Research: Characterization of Sources and Processes of Primary and Secondary Particulate Matter (PM) and Precursor Gases in the California-Mexico Border Region*, \$200,000, NSF, 4/10 – 3/12, PI; (2) *Aerosol Growth and Chemical Compositions from Heterogeneous Processing of Organic Compounds*, \$597,358, NSF, 1/10 – 12/13, PI; (3) *Generation, Characterization, and Atmospheric Aging of Soot Particles from Diesel Combustion*, \$330,000, NSF, 9/09 – 8/12, PI; (4) *Investigation of Cloud and Precipitation Processes Using WRF with A Two-Moment Microphysics: Contribution to the DOE Climate Change Prediction Program (CCPP) project*, \$25,000, BNL DOE, 9/09 – 8/10, PI; (5) *Formation, transformation, and properties of atmospheric aerosols and their impacts on multiphase processes and climate*, ¥2,400,000, Peking University/Ministry of Education – China, 9/09 – 8/12, PI; (6) *On-line chemical analysis of ambient organic aerosols*, \$38,000, Texas Air Research Center, 10/09 – 9/10, co-PI with A. Khalizov; (7) *Investigation of the Effects of the Asian Pollution Outflow on Winter Storms over the North Pacific*, \$90,000, NASA, 9/09 – 8/12, PI; (8) *Investigation of impacts of aerosols on thunderstorms and lightning over summertime city clusters in China*, ¥200,000, 12/09 – 1/11, State Meteorological Administration, China, PI; (7) *Surface-induced Oxidation of Organics in the Troposphere (SOOT)*, \$576,000, 3/08 – 12/10, Texas Environmental Research Consortium/Houston Advanced Research Center, PI; (8) *Investigation of urban and regional aerosol formation and transformation in China and associated climate effects*, ¥400,000, 7/07 – 6/10, China National Science Foundation, PI; (9) *Chemical Kinetics and Mechanism of Hydrocarbon Oxidation Reactions*, \$130,000, 6/10 – 5/12, The Welch Foundation, PI; (10) *Field Measurements of Gaseous Inorganic and Organic Compounds in Texas*, EPA, 9/07 – 8/10, \$47,142, US EPA, PI

#### **Graduate Thesis/dissertation supervised**

**Current Ph.D. Students:** Yuan Wang, Keun-Hee Lee, Wen Xu, Vanita Lal, Jonathan Vogel, Chong Qiu

**Former Students:** (1) Guohui Li, “*Investigation of the aerosol-cloud interaction using the WRF framework*”, Ph.D. dissertation, 2008; (2) Jun Zhao, “*Experimental and theoretical investigation of nucleation and growth of atmospheric aerosols*”, Ph.D. dissertation, 2007; (3) Jiwen Fan, “*Effects of aerosols on deep convective cumulus clouds*”, Ph.D. dissertation, 2007; (4) Edward C. Fortner, “*Airborne and ground based measurements of volatile organic compounds using proton transfer reaction mass spectrometry in Texas and Mexico City*”, Ph.D. dissertation, 2006; (5) Dan Zhang, “*Laboratory investigation of physical and optical properties of soot-containing aerosols*”, Ph.D. dissertation, 2005; (6) Inseon Suh, “*Photochemistry of aromatic hydrocarbons: Implications for ozone and secondary organic aerosol formation*”, Ph.D. dissertation, 2004; (7) Wenfang Lei, “*Ozone formation in the Houston-Galveston area: A regional chemical transport model study*”, Ph.D. dissertation, 2003; (8) Miguel Cruz-Quiñones, “*Heterogeneous reaction of NO<sub>2</sub> with soot surfaces and the effect of soot aging on its reactivity leading to HONO formation*”, M.S. thesis, 2009; (9) Huaxin Xue, “*Variation in morphology, hygroscopicity, and optical properties of soot particles coated by dicarboxylic acids*”, M.S. thesis, 2008; (10) Nick P. Levitt, “*Heterogeneous organic acid uptake on soot surfaces*”, M.S. thesis, 2007; (11) Donald W. Bond, “*NO<sub>x</sub> production by lightning in the continental U.S. and its impacts on tropospheric chemistry*”, M.S. thesis, 2001; (12) Dan Zhang, “*Experimental and theoretical studies of OH-initiated reactions of isoprene*”, M.S. thesis, 2001; (13) Inseon Suh, “*Atmospheric oxidation reactions of isoprene initiated by the hydroxyl radical and chlorine*”, M.S. thesis, 2000

#### **Post Docs/Research scientists Supervised**

**Current Research Scientists:** Dr. Lin Wang, Assistant Research Scientist, Ph.D., University of California – Riverside, 9/2007 – present; (2) Dr. Jun Zheng, Assistant Research Scientist, Ph.D., SUNY – Stony Brook, 7/2005 – present; (1) Dr. Alexei Khalizov, Assistant Research Scientist, Ph. D., Russian Academy of Sciences, 8/2005 - present

**Former Post Docs/Research Scientists:** (1) Dr. Yan Ma, Post Doctoral Research Associate, 8/2009 – 2/2010, Ph.D., University of Reading, UK; (2) Dr. Yiwei Diao, Post Doctoral Research Associate, 11/2007 – 12/2008, China Academy of Science; (3) Dr. Sang-Deuk Lee, Research Scientist, 1/2003 – 7/2004, Mokpo National University, SOUTH KOREA