**CURRICULUM VITAE**

**Fanxu Meng, Ph.D.**
**Research Associate**
Houston Advanced Research Center (HARC)
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***Education:***

2015: Ph.D., Chemical Engineering, Texas A&M University
2010: M.S., Chemical Engineering, Tianjin University
2008: B.S., Chemical Engineering, Tianjin University

***Professional Experience:***

Research Associate, Houston Advanced Research Center (HARC), The Woodlands, Texas
2017 - Present
Post-Doctoral Research Scientist, Houston Advanced Research Center (HARC), The Woodlands, Texas
2016 - 2016

- Implement life-cycle assessment of clean energy
- Estimate credits for energy efficiency management and emission savings
- Provide research on energy efficiency, renewable energy studies and all areas of sustainability
- Develop and verify technologies based on engineering principles, catalysts, chemicals to reduce emissions from diesel/gas engines to meet environmental protection regulations
- Design and construct data acquisition systems and integration with other emissions sampling systems
- Conduct analyses necessary to assist interested organizations in determining the techno-economic feasibility of technologies and systems that address environmental issues associated with oil and gas development
- Offer engineering and economic feasibility studies for Southwest Combined Heat and Power (CHP) installation in commercial, industrial and residential facilities
- Provide advocacy, networking and education to increase deployment of CHP
- Assist in screening, modeling analyses and case studies
- Prepare peer-review journal articles, presentation and technical reports.

Research Intern, Houston Advanced Research Center (HARC), The Woodlands, Texas
2015 - 2015

- Designed reactor and instruments based on fundamental engineering principles
- Improved a LabVIEW based data acquisition system,
- Planned and assisted the technical specialists in project execution about emission control

Graduate Research Assistant, Thermal-Hydraulic Research Laboratory, College Station, Texas
2014-2015

- Identified kinetics of silica and alumina material synthesis
- Analyzed nanoparticles with Inductively Coupled Plasma and Particle Size Analysis
- Led the chemicals reaction team, cooperated with 5 professional teams and trained 5 technicians
- Composed the test plan and documentations for quality assurance (QA)

Graduate Research Assistant, Texas A&M University, College Station, TX
2010-2015

- United nanoparticle synthesis, characterization and simulated reaction, kinetics and transport process
- Explored automatic quality control and point-of-use synthesis of nanoparticles
- Constructed in-situ analytical sensor for high throughput nanoparticle characterization

- Created 3D image tool to enable real-time nanoparticle characterization
- Implemented a new proficient multiphysics modeling for nanoparticle synthesis and detection
- Amalgamated modeling with production apparatus for quality control and point-of-use synthesis

Graduate Research Assistant, Aerosol Technology Laboratory, College Station, Texas
2010-2013

- Coalesced high flow rate sampling with sensitive and specific detection based on localized fluorescent
- Assessed bench-top monitor devices for polydisperse aerosol with SMPS and APS
- Crafted dynamic and rapid analysis of PM0.1 and PM2.5

Graduate Research Assistant, Key Lab for Green Chemistry, Ministry of Education in China
2006-2010

- Fabricated HZSM-5 catalytic coating with silica colloidal binder for fuel cracking
- Blueprinted, managed and optimized pilot system to test heterogeneous nano-zeolite catalysis
- Optimizing reactor design and operation by characterized catalyst and coking
- Trained 10 members for nanoparticle wash-coating and cracking equipment operations

***Awards:***

2014: Phillips 66 Technology Fellowship
2013: OGAPS Presentation Grant
2013: Graduate Climate Travel Grant
2009: Peiyang-Chen Hongfang Scholarship
2007: Winner of National-Challenge Contest
2005: National Scholarship

***Publications:***

F. Meng, A. Wijesinghe, J. Colvin, C. LaFleur, R. Haut. "Conversion of Exhaust Emissions of a Dual Fuel Engine by Co-Ni-Cu/Zeolite Catalysts". SAE Technical Paper, 2017, 2017-01-0908

F. Meng, V. M. Ugaz. "Instantaneous Physico-chemical Analysis of Suspension-based Nanomaterials". Scientific Reports. 5, 9896 (2015)

F. Meng, V. M. Ugaz. "Continuous Online Nanoparticle Sizing And Characterization". 16th International Conference on Miniaturized Systems for Chemistry and Life Sciences, October 26-30, 2014, San Antonio, TX, 1915-1917

F. Meng, M. D. King, Y. A. Hassan, V. M. Ugaz. "Localized Fluorescent Complexation Enables Rapid Monitoring of Airborne Nanoparticles". Environmental Science: Nano. 1 (2014): 358-366

G. Liu, J. Guo, F. Meng (co-first author), et al. "Effects of Colloidal Silica Binder on Catalytic Activity and Adhesion of HZSM-5 Coatings for Structured Reactors". Chinese Journal of Chemical Engineering. 22 (2014): 875-881

F. Meng, M. D. King, Y. A. Hassan, V. M. Ugaz. "Microfluidically Enabled High-Throughput Monitoring of Environmental Nanoparticles". 16th International Conference on Miniaturized Systems for Chemistry and Life Sciences, October 28 - November 1, 2012, Okinawa, Japan, 1426-1428

G. Liu; G. Zhao; F. Meng, S. Qu, L. Wang, X. Zhang. "Catalytic Cracking of Supercritical n-Dodecane over Wall-Coated HZSM-5 Zeolites with Micro- and Nanocrystal Sizes". Energy & Fuels. 26 (2012): 1220-1229

S. Qu , G. Liu, F. Meng, et al. "Catalytic Cracking of Supercritical n-Dodecane over Wall-Coated HZSM-5 with Different Si/Al Ratios". Energy Fuels. 25 (2011): 2808–2814

F. Meng, G. Liu, S. Qu, et al. "Catalytic Cracking and Coking of Supercritical n-Dodecane in Microchannel Coated with HZSM-5 Zeolites". Industrial & Engineering Chemistry Research. 49 (2010): 8977-8983

F. Meng, G. Liu, L. Wang, S. Qu, X. Zhang, Z. Mi. "Effect of HZSM-5 Coating Thickness upon Catalytic Cracking of n-Dodecane under Supercritical Condition". Energy & Fuels. 24 (2010): 2848-2856

F. Meng, G. Liu, X. Zhang, L. Wang. "Pd-Pt/HZSM-5 Coating Catalyst for Supercritical Cracking and Dehydrogenation of Hydrocarbon Fuel". 45th AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit. Denver, Colorado, Aug 2009

H. Zhao, F. Meng, W. Guo, J. Zou, X. Zhang. "Pd/HZSM-5 Coating Catalyst for Supercritical Cracking of Endothermic Fuel". Journal of Fuel Chemistry and Technology. 36 (2008): 462-467

F. Meng, H. Zhao, X. Zhang, J. Li, J. Zou. "Preparation of Pd/HZSM-5 Film Catalyst for Cracking of n-Dodecane". Chemical Industry and Engineering. 24 (2007)

***Presentations:***

*A Desktop Chemicals Plant Based on Microfluidics Devices,* Texas A&M Chemical Engineering Research Symposium, College Station, TX, Mar 2015

*Continuous Sizing and Characterization of Suspension-Based Nanomaterials*, 2014 AIChE Annual Meeting, Atlanta, GA, Nov 2014

*Real-time Sizing and Characterization of Suspension-Based Nanomaterials*, BASF – Texas A&M Graduate Student Symposium, College Station, TX, Aug 2014

*Continuous Nanoparticle Sizing and Characterization Via Microfluidic Interfacial Fluorescent Complexation*, 2013 AIChE Annual Meeting, San Francisco, CA, Nov 2013

*Microfluidically-Enabled Nanoparticle Monitoring and Characterization*, 2013 Annual Meeting of the AES, San Francisco, CA, Nov 2013

*Microfluidically-based Monitoring of Environmental Airborne Nanoparticles*, 29th International Symposium on MicroScale Bioseparations, Charlottesville, VA, Mar 2013

*Microfluidics Enables High-Throughput Monitoring of Environmental Nanoparticles*, MicroTAS 2012 Conference, Okinawa, Japan, Oct 2012

*High Throughput Collection and Detection of Environmental Nanoparticles*, 2011 AIChE Annual Meeting, Minneapolis, MN, Oct 2011

*Pd-Pt/HZSM-5 Coating Catalyst for Supercritical Cracking and Dehydrogenation of Fuel*, the 45th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Denver, CO, Aug 2009

***Patents:***

1. Chinese Patent CN 200710058969; March 26, 2008; "Method for Preparing Nanoparticle and Zeolite Catalysts Supported Noble Metal for Cracking Reaction"

2. Chinese Patent CN 200710058968; February 13, 2008; "Pilot System Design for Hydrocarbon Fuel Cracking under Supercritical Condition"

3. Chinese Patent CN 200710057014; September 5, 2007; "Preparation of Zeolite Molecular Sieve Film Supported Noble Metal Catalyst by Chemical Plating"

***Journal Reviewer:***

*Environmental Nanotechnology, Monitoring & Management (Elsevier)*
*Environmental Science: Nano (RSC)*
*Journal of Environmental Chemical Engineering (Elsevier)*
*Applied Nanoscience (Springer)*
*Analytica Chimica Acta (Elsevier)*
*Journal of Hazardous Materials (Elsevier)*
*Journal of Colloidal Interfacial and Science (Elsevier)*
*Journal of Physics and Chemistry of Solids (Elsevier)*
*Dyes and Pigments (Elsevier)*
*Talanta (Elsevier)*
*Chinese Journal of Chemical Engineering (Elsevier)*
*Nuclear Engineering and Design (Elsevier)*
*A book chapter for Sustainable Agriculture Reviews – Nanoscience in Food and Agriculture (Springer)*