

# James Song

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## EDUCATION

**Washington State University** Pullman, WA  
**Doctor of Philosophy in Chemical Engineering** September, 2015 – Present  
Entire PhD thesis work conducted at Pacific Northwest National Laboratory.  
Research Focus: Selective Catalytic Reduction of NOx Vehicle Emissions.

**Washington State University** Pullman, WA  
**Master of Science in Chemical Engineering** August, 2014 – Converted to PhD  
Master's Program w/ Research Thesis  
Research Focus: Catalysis Development for Steam Reforming of Biomass Pyrolysis Oil.

**University of Washington** Seattle, WA  
**Bachelor of Science in Chemical Engineering** September, 2007 – June, 2012  
Minor: Chemistry  
Honors Program

## WORK EXPERIENCE

➤ **Catalysis Research Internship – PhD Student** September, 2015 – Present  
Pacific Northwest National Laboratory (US Department of Energy) – Richland, WA

- Catalysis development for Selective Catalytic Reduction of NOx Vehicle Emissions.
- Research project funded by U.S. DOE and industrial partners including GM, Ford, Cummins, etc.
- Institute for Integrated Catalysis (the largest non-industrial catalysis R&D organization in the US).
- Work primarily conducted at PNNL's world-renowned Environmental Molecular Sciences Lab.
- P.I: Dr. Yong Wang, PNNL Associate Director & WSU Distinguished Professor.
- Mentor: Dr. Feng Gao, PNNL Staff Scientist.

➤ **High-Tech Business Development Internship** February, 2015 – Present  
SKILD at Washington State University – Pullman, WA

- Achieved technology commercialization via business fundamentals and technical expertise.
- Capitalized on intellectual property; evaluated high-tech opportunities from business perspective.
- Utilized translational thinking to advance novel ideas into real-world products and services.
- Gained leadership skills through entrepreneurial thinking and project planning.
- Collaborated with WSU Business Innovation Assessment Center and Office of Commercialization.

➤ **Graduate Researcher – Masters Student** August, 2014 – September, 2015  
Washington State University (School of Chemical Engineering) – Pullman, WA

- Catalysis development for steam reforming of biomass pyrolysis oil to produce hydrogen fuel.
- Research project funded by U.S Department of Energy grant.
- Major collaborations with Pacific Northwest National Laboratory (PNNL).
- P.I: Dr. Yong Wang, PNNL Associate Director & WSU Distinguished Professor.

➤ **Lead Flammability Engineer + Associate R&D Engineer** July, 2012 – August, 2014  
Zodiac Aerospace (Advanced Composites Division) – Marysville, WA

- Managed the Flammability Engineering Department in Advanced Composites Division facility.
- Lead engineer of multi-disciplinary engineering team working on 787-9 Cargo Oil Burner project.
- Supervised flammability analysts/associates and directed a stream-lined engineering team.
- Coordinated all aspects of flammability engineering to effectively design and certify components.
- Completed high volume of projects while meeting aggressive deadlines with efficiency.
- Collaborated with global design and R&D teams to meet engineering and corporate goals.
- Researched and developed novel chemical products (self-leveling primers) for competitive edge.
- Brain-stormed and applied more efficient manufacturing processes to streamline production.
- Chairman of Zodiac Aerospace EH&S Committee; elected by managers to hold this position.

➤ **Chemicals Industry Analyst Internship** 2009  
ChemPoint – Bellevue, WA

- Researched specialty chemicals, their applications, and potential customers.
- Integrated chemicals industry trend reports into marketing plans and business initiatives.
- Utilized strong background in chemistry to coordinate with marketing and sales officers.

➤ **Undergraduate Researcher** 2007 - 2012  
University of Washington (Dept. of Chemical Engineering & Dept. of Materials Engineering) – Seattle, WA

- Systematized janus coating process of nanoparticles via Pickering emulsion.
- Investigated freeze-thaw effects of silane-coated silica nanoparticles in emulsions.

- Applications in petroleum industry (stabilizing crude oil, etc).
- Investigated fabrication and doping of ZnS thin films for solar cell applications.
- Conducted independent research on crucial elements of CZTS solar cells.
- Collaborated with graduate students on publications and presentations.

### **HONORS & AWARDS**

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|---|--|------|
| ➤ | National SMART (Science and Math Access to Retain Talent) Grant Recipient (\$3K) | 2011 |
| ➤ | Future Scientific Innovators Academic Scholarship Recipient (\$10K)              | 2009 |
| ➤ | U.W Academy for Young Scholars Student (admitted into U.W at age 14)             | 2007 |

### **PROFESSIONAL AFFILIATIONS**

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|---|--|--------------|
| ➤ | Chairman of Zodiac Aerospace Environmental, Health, & Safety Committee | 2013-2014    |
| ➤ | Engineering Officer for UAEM Global Medicine Organization at U.W       | 2009-2012    |
| ➤ | American Institute of Chemical Engineers Member                        | 2009-Present |
| ➤ | American Chemical Society Member                                       | 2009-Present |