

Weijing Wang

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Summary: 10+ years of solid lab management, research and engineering experience in the combustion/propulsion related research/development industry. Holds Ph.D. degree in Aeronautical Engineering. Successfully designed and built multiple research laboratories from scratch. Managed and executed all research projects with exceptional performance. Led teams of postdocs and grad/undergrad students to design and perform experiments/simulations with high number of publications of top-level journal articles. Enthusiastic and self-motivated, collaborative and decisive with strong communication and interpersonal abilities, strong decision-making and prioritization skills, ability to work independently to anticipate and resolve problems.

Education

- Rensselaer Polytechnic Institute, Troy, NY** Aug 2008 – May 2013
- Ph.D., Aeronautical Engineering Sep 2008 - May 2013
 - M.S., Aeronautical Engineering Sep 2008 - May 2010
- Tsinghua University, Beijing, China** Sep 2004 – June 2008
- B.E., Aerospace Engineering Sep 2004 - June 2008

Research and Professional Experience

- Postdoctoral Research Associate, University of South Carolina, Columbia, SC** Jun 2017 – Present
- Lead multiple research efforts into combustion/propulsion and fuel properties related research
 - Manage multiple lab projects and mentoring grad and undergrad students regarding research and publications
 - Design and build experiments as well as carry out numerical simulations for fuel, energy and emission control related research
 - Writing proposals to get funding for projects of the lab
- Research Fellow, Nanyang Technological University, Singapore** Jun 2015 – Apr 2017
- Lead effort to design and launch new laboratory carrying out the experimental section of entire research center
 - Collaborate with researchers and management across the whole center
 - Design/perform experimental studies regarding the synthesis of metal oxide nanoparticles
 - Microscopic/photochemical analysis of produced nanoparticles
- Visiting Postdoctoral Scholar, Nanoenergy Lab, Stanford University, Stanford, CA** Aug 2015 – Nov 2015
- Collaborate with Professor Hai Wang's group over soot studies using stretch and burner stabilized flames for particle size distributions
 - Master techniques on burner stabilized stagnation flames for soot and other analyses
- Software Quality Engineer, MicroStrategy, Inc. Tysons Corner, VA** Aug 2013 – May 2015
- Design/Enhance testing procedures and cases for Usher software across different OEM platforms.
 - Acutely discovers software issues, provide initial analysis to Management, further communicate with SW engineer and other related department to ensure the fix for the software before release to the customer
- Postdoctoral Research Associate, Rensselaer Polytechnic Institute, Troy, NY** May 2013 – Aug 2013
- Oversaw the design, instrumentation, and operation of shock tube experiments, measuring ignition delay times of biodiesel fuels
 - Leading graduate students involved in the project, provide guidance on related experimental and computational process
- Graduate Research Assistant, Rensselaer Polytechnic Institute, Troy, NY** Aug 2008 – May 2013
- **Shock Tube Studies of the Autoignition of Biodiesels**
 - Designed experiments to measure ignition delay times for various hydrocarbon fuels, such as methyl decanoate, ethyl nonanoate, 2,5-dimethylfuran using a high-pressure heated shock tube
 - Performed kinetic simulations of the autoignition of these fuels under the same conditions using CHEMKIN, with both complete and simplified mechanisms developed by other research groups (LLNL, Nancy University, etc)
 - **CO Sensor and Wavelength-Modulation Absorption Spectroscopy**

- Developed a mid-infrared Wavelength-Modulation Spectroscopy absorption sensor utilizing a Quantum Cascade Laser source for CO detection at 4.6 μm
- Conducted measurements of CO concentration and flame temperature over a McKenna flat flame burner using the sensor system

Undergraduate Research Assistant, Tsinghua University, Beijing, China

Jan 2008 – May 2008

➤ **CFD for a Rocket Motor**

- Performed Fluent-based CFD analysis of combustion inside a liquid hydrocarbon/oxygen rocket motor.

Honors

- Golden Medal Awarded for Arts and Sports (2004 – 2007)
- Excellent cadre of School of Aerospace, Tsinghua University (2006)
- China Undergraduate Physics Contest, third place prize in Beijing (2005)

Skills

- Software and Programming Skills
 - C++, MATLAB, FLUENT, CHEMKIN, AutoCAD, CREO, Python
 - Certified LabVIEW Associate Developer
- Language Skills: *English, Chinese, Spanish, Japanese*

JOURNAL ARTICLES

1. S. Wu, W. Wang, W. Tu, S. Yin, Y. Sheng, M. Y. Manuputty, M. Kraft, R. Xu, *Premixed Stagnation Flame Synthesized TiO₂ Nanoparticles with Mixed Phases for Efficient Photocatalytic Hydrogen Generation*, *ACS Sustainable Chemistry & Engineering*, 2018,6,11,14470-14479.
2. J. Camacho, A. Singh, W. Wang, R. Shan, E. K. Yapp, D. Chen, M. Kraft, H. Wang, *Soot Particle Size Distributions in Premixed Stretch-Stabilized Flat Ethylene-Oxygen-Argon Flames*, *Proceedings of the Combustion Institute*, 2016.
3. S. Burke, U. Burke, O. Mathieu, I. Osorio, C. Keesee; A. Morones; E. Petersen; W. Wang; T. DeVerter; M.A. Oehlschlaeger; B. Rhodes; R. Hanson,; D. Davidson; B. Weber; C.-J. Sung; J. Santner; Y. Ju; F. Haas; F. Dryer; E. Volkov; E. Nilsson; A. Konnov; M. Alrefae; F. Khaled; A. Farooq; P. Dirrenberger; P. Glaude; F. B.-Leclerc, H.J. Curran, *An Experimental and Modeling Study of Propene Oxidation. Part 2: Ignition Delay Time and Flame Speed Measurements*, *Combustion and Flame*, 2014.
4. S.M. Sarathy, G. Kukkadapu, M. Mehl, W. Wang, T. Javed, S. Park, M.A. Oehlschlaeger, A. Farooq, W.J. Pitz, C.J. Sung, *"Ignition of Alkane-Rich FACE Gasoline Fuels and their Surrogates," Proceedings of the Combustion Institute*, 2014.
5. W. Wang, S. Gowdagiri, M.A. Oehlschlaeger, *"The Shock Tube Autoignition of Biodiesels and Biodiesel Components," Combustion and Flame*, 2014.
6. S. Gowdagiri, W. Wang, M.A. Oehlschlaeger, *"A Shock Tube Ignition Delay Study of Conventional Diesel Fuel and Hydroprocessed Renewable Diesel Fuel from Algal Oil," Fuel* 128, 21-29 (2014).
7. S.M. Sarathy, T. Javed, F. Karsenty, A. Heufer, W. Wang, S. Park, A. Elwardany, A. Farooq, C.K. Westbrook, W.J. Pitz, M.A. Oehlschlaeger, G. Dayma, H.J. Curran, P. Dagaut, *"Combustion of an Iso-Paraffinic Surrogate for Gasoline, Diesel, and Aviation Fuels: 2,5-Dimethylhexane Experiments and Modeling," Combustion and Flame* 161, 1444-1459 (2014).
8. W. Wang, S. Gowdagiri, M.A. Oehlschlaeger, *"Comparative Study of the Autoignition of Methyl Decenoates, Unsaturated Biodiesel Surrogates," Energy and Fuels* 27, 5527-5532 (2013).
9. H. Wang, W.J. Gerken, W. Wang, M.A. Oehlschlaeger, *"Experimental Study of the High-Temperature Autoignition of Tetralin," Energy and Fuels* 27, 5483-5487 (2013).
10. S.M. Sarathy, S. Park, B. Weber, W. Wang, P. Veloo, A.C. Davis, C. Togbe, C.K. Westbrook, O. Park, G. Dayma, Z. Luo, M.A. Oehlschlaeger, F. N. Egolfopoulos, T. Lu, W.J. Pitz, C.J. Sung, P. Dagaut, *"A Comprehensive Experimental and Modeling Study of Iso-Pentanol Combustion," Combustion and Flame* 160, 2718-2728 (2013).

11. Z. Li, W. Wang, Z. Huang, M.A. Oehlschlaeger, "Dimethyl Ether Autoignition at Engine-Relevant Conditions," *Energy and Fuels*, 27, 2811-2817 (2013).
12. B. Sirjean, R. Fournet, P.A. Glaude, F. Battin-Leclerc, W. Wang, M.A. Oehlschlaeger, "A Shock Tube and Chemical Kinetic Modeling Study of the Oxidation of 2,5-Dimethylfuran," *Journal of Physical Chemistry A* 117, 1371-1392 (2013).
13. P. Dievart, H.H. Kim, S.H. Won, Y. Ju, S. Dooley, F.L. Dryer, W. Wang, M.A. Oehlschlaeger, "The Combustion Properties of 1,3,5-Trimethylbenzene and a Kinetic Model," *Fuel* 109, 125-136 (2013).
14. W. Wang, Z. Li, M.A. Oehlschlaeger, D. Healy, H.J. Curran, S.M. Sarathy, M. Mehl, W.J. Pitz, C.K. Westbrook, "An Experimental and Modeling Study of the Autoignition of 3-Methylheptane," *Proceedings of the Combustion Institute* 34, 335-343 (2013).
15. Z. Li, W. Wang, Z. Huang, M.A. Oehlschlaeger, "The autoignition of methyl decanoate, a biodiesel surrogate, under high-pressure exhaust gas recirculation conditions," *Energy and Fuels* 26, 4887-4895 (2012).
16. W. Wang, M.A. Oehlschlaeger, "The Autoignition of Methyl Decanoate at Elevated Pressures," *Combustion and Flame* 159, 476-481 (2012).
17. J. Vanderover, W. Wang, and M.A. Oehlschlaeger, "A Carbon Monoxide and Thermometry Sensor Based on Mid-IR Quantum-Cascade Laser Wavelength-Modulation Absorption Spectroscopy," *Applied Physics B* 103, 959-966 (2011).

CONFERENCE ARTICLES

1. S.M. Sarathy, G. Kukkadapu, W. Wang, K. Qurashi, S.Y. Yang, M. Mehl, C.J. Sung, M.A. Oehlschlaeger, W.J. Pitz, "Ignition of FACE Gasoline and Primary Reference Fuels," *Mediterranean Combustion Symposium, Cesme, Turkey* (2013).
2. W. Wang, S. Gowdagiri, M.A. Oehlschlaeger, "Autoignition Variation for Biodiesels: Influence of Saturation," *ASME International Mechanical Engineering Congress and Exposition, San Diego, CA* (2013).
3. W. Wang, M.A. Oehlschlaeger, "The Shock Tube Autoignition of Biodiesels and Biodiesel Components," *ASME Summer Heat Transfer Conference, Minneapolis, MN* (2013).
4. S.M. Sarathy, S. Park, F. Karsenty, A. Heufer, T. Javed, W. Wang, C.K. Westbrook, A. Elwardani, H. Curran, A. Farooq, M.A. Oehlschlaeger, P. Dagaut, G. Dayma, W.J. Pitz, "Combustion of an Iso-Paraffinic Surrogate for Gasoline, Diesel, and Aviation Fuels: 2,5-Dimethylhexane Experiments and Modeling," *8th International Conference on Chemical Kinetics, Seville, Spain* (2013).
5. S.M. Sarathy, B. Weber, S. Park, A. Davis, P. Veloo, O. Park, C. Togbe, W.J. Pitz, C.J. Sung, M.A. Oehlschlaeger, T. Lu, G. Dayma, P. Dagaut, C.K. Westbrook, W. Wang, Z. Luo, F.N. Egolfopoulos, "Comprehensive Experimental and Modeling Study of Isopentanol Oxidation," *U.S. National Meeting on Combustion, Park City, UT* (2013).
6. W. Wang, M.A. Oehlschlaeger, "The Autoignition of Methyl Decanoate at Elevated Pressures," *U.S. National Meeting on Combustion, Atlanta, GA* (2011).