Stanford

Hai Wang

Professor of Mechanical Engineering

Curriculum Vitae available Online

CONTACT INFORMATION

- **Administrative Contact**

  Mary Hanrahan - Thermosciences Group Administrator

  Email frog@stanford.edu

  Tel (650) 725-2012

Bio

BIO

Hai Wang is Professor of Mechanical Engineering at Stanford University. His interests are in renewable energy conversion, catalysis and combustion. His current research focuses on theories and applications of nanoparticles and nanostructures for rechargeable batteries and supercapacitors, combustion simulations and nanocatalysis. He is the author and coauthor of numerous papers in scholarly journals, including "Mesoporous titania films prepared by flame stabilized on a rotating surface-Application in dye sensitized solar cells" in Journal of Physical Chemistry C, “A detailed kinetic modeling study of aromatics formation in laminar premixed acetylene and ethylene flames” in Combustion and Flame, “Drag force, diffusion coefficient, and electric mobility of small particles. I. Theory applicable to the free-molecule regime” in Physical Review E, “A new mechanism for the formation of meteoritic kerogen-like material” in Science, “Gas-nanoparticle scattering: A molecular view of momentum accommodation function” in Physical Review Letters, and “Formation of nascent soot and other condensed-phase materials in flames” in Proceedings of the Combustion Institute. He is currently the Editor-in-Chief of Progress in Energy and Combustion Science, a highly influential energy journal published by Elsevier with an impact factor of 25.2 (2017).

ACADEMIC APPOINTMENTS

- Professor, Mechanical Engineering

ADMINISTRATIVE APPOINTMENTS

- Professor, Department of Mechanical Engineering, Stanford University, (2013- present)
- Co-Founder, Hestia Tec, LLC, (2010-2014)
- Northrop Chair in Engineering, University of Southern California, (2010-2013)
- Associate Chair, Department of Aerospace and Mechanical Engineering, University of Southern California, (2008-2009)
- Professor, Department of Aerospace and Mechanical Engineering, University of Southern California, (2007-2013)
- Co-Founder, TISOL, LLC, (2007-2011)
- Associate Professor, Department of Aerospace and Mechanical Engineering, University of Southern California, (2004-2007)
- Associate Professor, Department of Mechanical Engineering, University of Delaware, (2001-2004)
- Assistant Professor, Department of Mechanical Engineering, University of Delaware, (1997-2001)

- Professional Research Staff, Department of Mechanical and Aerospace Engineering, Princeton University, (1994-1996)
- Postdoctoral Research Associate, Fuel Science Program, Department of Materials Science and Engineering, Pennsylvania State University, (1992-1994)

HONORS AND AWARDS

- Humboldt Senior Research Award, Alexander von Humboldt Foundation (2019)
- Mercator Fellow, The German Research Foundation (DFG) (2019)
- Fellow, The Combustion Institute (2018)
- Fellow, American Society of Mechanical Engineers (ASME) (2018)
- Propellants and Combustion Award, AIAA (2018)
- Distinguished Paper Award, Thirty-Fifth International Symposium on Combustion (2014)
- Senior Research Award, Viterbi School of Engineering, USC (2011)
- Changjiang Scholar, Ministry of Education, China (2010)
- Northrop Chair in Engineering, University of Southern California (2010)
- Combustion and Flame Most Cited Author 2005-2008, Elsevier (2009)
- Distinguished Paper Award, Thirty-First International Symposium on Combustion (2006)
- CAREER Award, National Science Foundation (1999)
- C.C.Wright Award for Excellence in Graduate Study, Fuel Science, Pennsylvania State University (1992)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Co-Chair, 37th International Symposium on Combustion (2016 - present)
- Editor-in-Chief, Progress in Energy and Combustion Science (2015 - present)
- Member of the Editorial Board, Frontiers in Energy (2012 - present)
- Associate Editor, Proceedings of the Combustion Institute (2008 - 2014)
- Member of the Editorial Board, Progress in Energy and Combustion Science (2006 - 2015)
- Member of the Editorial Board, Combustion and Flame (2003 - 2008)
- Member of the Editorial Advisory Board, International Journal of Chemical Kinetics (2001 - 2003)
- Member of the Committee on Biological and Physical Sciences in Space, National Academies of Sciences, Engineering and Medicine (2016 - present)
- Rockets Team Faculty Advisor and Member of the Advisory Board, Stanford Space Initiative (SSI) (2015 - present)
- Member of the Awards Portfolio Committee, The Combustion Institute (2015 - 2015)
- Chair, Heterogeneous Reaction Processes, NASA CombustionLab & its Workshop (2014 - 2014)
- Member of the Board of Visitors, Mechanical Sciences Division, Army ReseaRCH OFFICE (2013 - 2013)
- Member of the Advisory Board, National Center for Hypersonic Combined Cycle Propulsion (2013 - 2014)
- Thrust leader, Combustion Energy Frontier Research Center (CEFRC) (2010 - 2014)
- Member of the Steering Committee, Combustion Energy Frontier Research Center (CEFRC) (2010 - 2014)
- Member of the Fuel Cells Working Group, The State of Delaware (2002 - 2003)

PROFESSIONAL EDUCATION

- Ph.D., Pennsylvania State University, University Park, Pennsylvania , Fuel Science (1992)
- M.S., Michigan Technological University, Houghton, Michigan , Chemical Engineering (1986)
- B.Eng., East China University of Science and Technology , Polymer Materials Science and Engineering (1984)

PATENTS

- Hai Wang, Lee-Yang Wang, Erin N. Kampschroer. "United States Patent 9,314,800 Apparatus and process for high throughput powder production", Apr 19, 2016
- Hai Wang, Denis Phares. "United States Patent 8329071 Multicomponent Nanoparticle Materials and Process and Apparatus Therefor", Dec 11, 2012
- Hai Wang, Denis J. Phares, Erik Tolmachoff. "United States Patent 8329251 Method for Preparing Metal Oxide Crystalline Nanoparticle Films for Dye Sensitized Solar Cell Photoanodes", Dec 11, 2012
- Hai Wang, Denis Phares. "United States Patent 8197908 Method for preparing electrically conducting materials", Jun 12, 2012

LINKS

- Personal Web Page: https://web.stanford.edu/~haiwang
- Lab Web Page: https://nanoenergy.stanford.edu

Teaching

COURSES

2021-22

- Combustion Applications: ME 372 (Spr)
- Dynamics and Kinetics of Nanoparticles: ME 374 (Win)
- Engineering Thermodynamics: ME 30 (Aut)

2020-21

- Dynamics and Kinetics of Nanoparticles: ME 374 (Win)
- Engineering Thermodynamics: ME 30 (Aut)

2019-20

- Dynamics and Kinetics of Nanoparticles: ME 374 (Win)
- Engineering Thermodynamics: ME 30 (Aut)
- High Temperature Gasdynamics Laboratory Research Project Seminar: ME 390A (Aut)

2018-19

- Combustion Fundamentals: ME 371 (Win)
- Engineering Thermodynamics: ME 30 (Aut)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Jacob Alvarez, Wai Tong Chung, Vincent Dufour Decieux, Omkar Shende, Jesse Streicher, Adam Susa, Taemin Yong, Luke Zaczek

Doctoral Dissertation Advisor (AC)

Philip DePond, Kevin Dong, Amitesh Jayaraman, Nick Kateris, Nick Montes, Bryon Spells, Yue Zhang

Master's Program Advisor

Abrar Alshaikh, William Choi, Michael LoCascio, Aditya Shah, Sweekar Sweekar

Doctoral (Program)

Kevin Dong, Amar Hajj-Ahmad, Nick Kateris, Nick Montes, Ryan Przybocki, Yimeng Qin

Publications

PUBLICATIONS

- **Navigating the Crossroads of Cell Therapy and Natural Heart Regeneration** *Frontiers in Cell and Developmental Biology*
  Elde, S., Wang, H., Woo, Y.
  2021: 674180

- **Asiatic Acid Attenuates Bone Loss by Regulating Osteoclastic Differentiation** *Calcified Tissue International*
  Huang, J., Wang, H., Huang, M., Zong, Z., Wu, X., Xu, J., Lan, H., Zheng, J., Zhang, X., Lee, Y., Wei, B., Cui, L., Li, et al
  2019

- **TRY plant trait database - enhanced coverage and open access** *Global Change Biology*
  Kattge, J., et al
  2019

- **The distillation curve and sooting propensity of a typical jet fuel** *Fuel*
  Saggese, C., Singh, A. V., Xue, X., Chu, C., Kholghy, M. R., Zhang, T., Camacho, J., Giaccai, J., Miller, H., Thomson, M. J., Sung, C., Wang, H.
  2019; 235

- **Critical kinetic uncertainties in modeling hydrogen/carbon monoxide, methane, methanol, formaldehyde, and ethylene combustion** *COMBUSTION AND FLAME*
  Tao, Y., Smith, G. P., Wang, H.
  2018; 195: 18–29

- **Bottom-up modeling using the rate-controlled constrained-equilibrium theory: The n-butane combustion chemistry** *COMBUSTION AND FLAME*
  Janbozorgi, M., Wang, H.
  2018; 194: 223–32

- **A physics-based approach to modeling real-fuel combustion chemistry - II. Reaction kinetic models of jet and rocket fuels** *COMBUSTION AND FLAME*
  Xu, R., Wang, K., Banerjee, S., Shao, J., Parise, T., Zhu, Y., Wang, S., Movaghar, A., Lee, D., Zhao, R., Han, X., Gao, Y., Lu, et al
  2018; 193: 520–37

- **Including real fuel chemistry in LES of turbulent spray combustion** *COMBUSTION AND FLAME*
  Felden, A., Esclapez, L., Riber, E., Cuenot, B., Wang, H.
  2018; 193: 397–416

- **A physics-based approach to modeling real-fuel combustion chemistry - I. Evidence from experiments, and thermodynamic, chemical kinetic and statistical considerations** *COMBUSTION AND FLAME*
  Wang, H., Xu, R., Wang, K., Bowman, C. T., Hanson, R. K., Davidson, D. F., Brezinsky, K., Egolfopoulos, F. N.
  2018; 193: 502–19

- **Effect of n-dodecane decomposition on its fundamental flame properties** *COMBUSTION AND FLAME*
  Smolke, J., Carbone, F., Egolfopoulos, F. N., Wang, H.
  2018; 190: 65–73

- **Editorial** *PROGRESS IN ENERGY AND COMBUSTION SCIENCE*
  Schulz, C., Wang, H.
  2018; 64: 1

- **p4v: practical verification for programmable data planes** *SIGCOMM '18 Proceedings of the 2018 Conference of the ACM Special Interest Group on Data Communication*
  Liu, J., Hallahan, W., Schlesinger, C., Sharif, M., Lee, J., Soulé, R., Wang, H., Ca#caval, C., McKeown, N., Foster, N.
  2018: 490-503

- **Plant exploitation of the first farmers in Northwest China: Microbotanical evidence from Dadiwan** *Quaternary International*
  Wang, J., Zhao, X., Wang, H., Liu, L.
  2018

- **A New Overall-Subgroup Simultaneous Test for Optimal Inference in Biomarker-Targeted Confirmatory Trials** *Statistics in Biosciences*

Belitskaya, I., Wang, H., Shih, M., Tian, L., Doros, G., Lew, R. A., Lu, Y.
2017

- **Mobility size distributions of soot in premixed propene flames** *COMBUSTION AND FLAME*
Lin, H., Gu, C., Camacho, J., Lin, B., Shao, C., Li, R., Gu, H., Guan, B., Wang, H., Huang, Z.
2016; 172: 365-373

- **Chemical kinetic model uncertainty minimization through laminar flame speed measurements** *COMBUSTION AND FLAME*
Park, O., Veloo, P. S., Sheen, D. A., Tao, Y., Egolfopoulus, F. N., Wang, H.
2016; 172: 136-152

- **Particle size distribution of nascent soot in lightly and heavily sooting premixed ethylene flames** *COMBUSTION AND FLAME*
Gu, C., Lin, H., Camacho, J., Lin, B., Shao, C., Li, R., Gu, H., Guan, B., Huang, Z., Wang, H.
2016; 165: 177-187

- **An experimental and kinetic modeling study of n-dodecane pyrolysis and oxidation** *COMBUSTION AND FLAME*
Banerjee, S., Tangko, R., Sheen, D. A., Wang, H., Bowman, C. T.
2016; 163: 12-30

- **Mobility size and mass of nascent soot particles in a benchmark premixed ethylene flame** *COMBUSTION AND FLAME*
Camacho, J., Liu, C., Gu, C., Lin, H., Huang, Z., Tang, Q., You, X., Saggese, C., Li, Y., Jung, H., Deng, L., Wlokas, I., Wang, et al
2015; 162 (10): 3810-3822

- **In situ X-ray Scattering and Dynamical Modeling of Pd Catalyst Nanoparticles Formed in Flames** *JOURNAL OF PHYSICAL CHEMISTRY C*
Wang, J., Seifert, S., Winans, R. E., Tolmachoff, E., Xin, Y., Chen, D., Wang, H., Anderson, S. L.
2015; 119 (33): 19073-19082

- **Numerical simulation and parametric sensitivity study of particle size distributions in a burner-stabilised stagnation flame** *COMBUSTION AND FLAME*
Yapp, E. K., Chen, D., Akroyd, J., Mosbach, S., Kraft, M., Camacho, J., Wang, H.
2015; 162 (6): 2569-2581

- **Analysis of segregation and bifurcation in turbulent spray flames: A 3D counterflow configuration** *PROCEEDINGS OF THE COMBUSTION INSTITUTE*
Vie, A., Franzelli, B., Gao, Y., Lu, T., Wang, H., Ihme, M.
2015; 35: 1675-1683

- **Morphology of nascent soot in ethylene flames** *PROCEEDINGS OF THE COMBUSTION INSTITUTE*
Schenk, M., Lieb, S., Vieker, H., Beyer, A., Goelzhaeuser, A., Wang, H., Kohse-Hoeinghaus, K.
2015; 35: 1879-1886

- **Kinetics of nascent soot oxidation by molecular oxygen in a flow reactor** *PROCEEDINGS OF THE COMBUSTION INSTITUTE*
Camacho, J., Tao, Y., Wang, H.
2015; 35: 1887-1894

- **Skeletal reaction model generation, uncertainty quantification and minimization: Combustion of butane** *COMBUSTION AND FLAME*
Xin, Y., Sheen, D. A., Wang, H., Law, C. K.
2014; 161 (12): 3031-3039

- **Properties of Complexes Formed by Na+, Mg2+, and Fe2+ Binding with Benzene Molecules** *JOURNAL OF PHYSICAL CHEMISTRY A*
Kolakkandy, S., Pratihar, S., Aquino, A. J., Wang, H., Hase, W. L.
2014; 118 (40): 9500-9511

- **Kinetics of catalytic oxidation of methane, ethane and propane over palladium oxide** *COMBUSTION AND FLAME*
Xin, Y., Wang, H., Law, C. K.
2014; 161 (4): 1048-1054

- **Imaging Nanocarbon Materials: Soot Particles in Flames are Not Structurally Homogeneous** *CHEMPHYSCHEM*
Schenk, M., Lieb, S., Vieker, H., Beyer, A., Goelzhaeuser, A., Wang, H., Kohse-Hoeinghaus, K.
2013; 14 (14): 3248-3254

- **Kinetics of Catalytic Oxidation of Methane over Palladium Oxide by Wire Microcalorimetry** *JOURNAL OF PHYSICAL CHEMISTRY C*
Xin, Y., Lieb, S., Wang, H., Law, C. K.

2013; 117 (38): 19499-19507

- **Isomerization kinetics of benzylic and methylphenyl type radicals in single-ring aromatics** *PROCEEDINGS OF THE COMBUSTION INSTITUTE*
  Dames, E., Wang, H.
  2013; 34: 307-314
- **Flexible polymer transistors with high pressure sensitivity for application in electronic skin and health monitoring** *Nature Comm.*
  Schwartz, G., Tee, B., C-K., Mei, J., Appleton, A., L., Kim, H., D, Wang, H., Bao, Z.
  2013; 4: 1859
- **Height and phase mode images of soot using AFM** *8th US National Combustion Meeting*
  Lieb, S., Wang, H.
  2013
- **Catalytic oxidation of alkanes over palladium oxide** *8th US National Combustion Meeting*
  Xin, Y. X., Wang, H., Law, C. K.
  2013
- **Chemical kinetic uncertainty minimization through laminar flame speed measurements of C1-C3 hydrocarbon/air mixtures.** *8th US National Combustion Meeting*
  Park, O., Veloo, P. S., Sheen, D., Egolfopoulos, F. N., Wang, H.
  2013
- **Optimized skeletal reaction model of butane combustion** *8th US National Combustion Meeting*
  Xin, Y. X., Wang, H., Law, C. K.
  2013
- **Kinetics of nascent soot oxidation in a flow reactor** *8th US National Combustion Meeting*
  Camacho, J., Wang, H.
  2013
- **Evolution of size distribution of nascent soot in n- and i-butanol flames** *PROCEEDINGS OF THE COMBUSTION INSTITUTE*
  Camacho, J., Lieb, S., Wang, H.
  2013; 34: 1853-1860
- **On potential energy landscape and combustion chemistry modeling** *COMBUSTION AND FLAME*
  Wang, H.
  2013; 160 (1): 222-223
- **Dye sensitized solar cells prepared by flames stabilized on a rotating surface** *PROCEEDINGS OF THE COMBUSTION INSTITUTE*
  Nikraz, S., Wang, H.
  2013; 34: 2171-2178
- **Mesoporous Titania Films Prepared by Flame Stabilized on a Rotating Surface: Application in Dye Sensitized Solar Cells** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Nikraz, S., Phares, D. J., Wang, H.
  2012; 116 (9): 5342-5351
- **Propagation and extinction of benzene and alkylated benzene flames** *COMBUSTION AND FLAME*
  Ji, C., Dames, E., Wang, H., Egolfopoulos, F. N.
  2012; 159 (3): 1070-1081
- **Tunneling in Hydrogen-Transfer Isomerization of n-Alkyl Radicals** *JOURNAL OF PHYSICAL CHEMISTRY A*
  Sirjean, B., Dames, E., Wang, H., Tsang, W.
  2012; 116 (1): 319-332
- **Probing nascent soot in burned stabilized ethylene flames: a comparison of several microscopic techniques** *34th International Symposium on Combustion*
  Schenk, M., Vieker, S., Beyer, H., GšlzhŠuser, A., Wang, H., Kohse-Hoeinghaus, K.
  2012
- **Nanoporous titania gas sensing films prepared using flame stabilized on a rotating surface (FSRS)** *Fall MRS Meeting and Exhibits*

Tolmachoff, E. D., Nikraz, S., Wang, H.
2012

- **Study of the formation and structure of Pd nanoparticles in flames by SAXS and simulation** *Fall MRS Meeting and Exhibits*
  Winans, R. E., Wang, J. L., Seifeit, J., Anderson, S. L., Wang, H., Lieb, S., Tolmachoff, E.
  2012
- **On AFM probing of nascent soot structure** *34th International Symposium on Combustion*
  Lieb, S., Wang, H.
  2012
- **Chemical kinetic uncertainty minimization through laminar flame speed measurements** *Spring Technical Meeting of the Western States Sections of the Combustion Institute, Arizona State University*
  Park, O., Veloo, P. S., Wang, H., Egolfopoulos, F. N.
  2012
- **Towards a predictive combustion chemistry model–Uncertainty Propagation and Minimization** *1st High-Pressure Flame Chemistry Workshop*
  Wang, H.
  2012
- **Pressure dependence in the competitive thermal isomerization/ decomposition of the cyclohexyl radical** *poster paper presented at 1st High-Pressure Flame Chemistry Workshop*
  Dames, E., Wang, H.
  2012
- **Characteristics of dye sensitized solar cells made with flame stabilized on a rotating surface (FSRS)** *2012 Fall MRS Meeting and Exhibits*
  Nikraz, S., Wang, H.
  2012
- **The method of uncertainty quantification and minimization using polynomial chaos expansions** *COMBUSTION AND FLAME*
  Sheen, D. A., Wang, H.
  2011; 158 (12): 2358-2374
- **Nanoporous Titania Gas Sensing Films Prepared in a Premixed Stagnation Flame** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Tolmachoff, E., Memarzadeh, S., Wang, H.
  2011; 115 (44): 21620-21628
- **Combustion kinetic modeling using multispecies time histories in shock-tube oxidation of heptane** *COMBUSTION AND FLAME*
  Sheen, D. A., Wang, H.
  2011; 158 (4): 645-656
- **Formation of nascent soot and other condensed-phase materials in flames** *PROCEEDINGS OF THE COMBUSTION INSTITUTE*
  Wang, H.
  2011; 33: 41-67
- **Extinction of lean near-limit methane/air flames at elevated pressures under normal- and reduced-gravity** *PROCEEDINGS OF THE COMBUSTION INSTITUTE*
  Zhang, H., Fan, R., Wang, S., Tian, X., Xu, K., Wan, S., Egolfopoulos, F. N.
  2011; 33: 1171-1178
- **Scattering of noble gas molecules and transition metal nanoparticles: A molecular dynamics study** *7th US National Combustion Meeting, Atlanta, GA*
  Koumlis, S., Wang, H.
  2011
- **Molecule/particle beams detection by fast superconducting bolometers** *7th US National Combustion Meeting, Atlanta, GA*
  Gao, S., Phares, D. J., Wang, H.
  2011
- **Theory and kinetic modeling of initiation reactions for cyclohexane and several of its mono-alkylated derivatives** *7th US National Combustion Meeting, Atlanta GA*
  Dames, E., Krylov, A., Wang, H.

2011

- **Formation of soot in laminar premixed n-butanol and isobutanol flames** *7th US National Combustion Meeting, Atlanta, GA*
  Camacho, J., Lieb, S., Wang, H.
  2011
- **Catalytic methane oxidation over palladium nanoparticles** *7th US National Combustion Meeting, Atlanta, GA*
  Shimizu, T., Wang, H., Perez, J. P., Anderson, S. L.
  2011
- **Mesoporous TiO2 thin films prepared by Flame Stabilized on a Rotating Surface (FSRS) method - Application to dye-sensitized solar cells** *Materials Research Society (MRS) Spring Meeting*
  Memarzadeh, S., Walker, J., Phares, D. J., Wang, H.
  2011
- **Overview of research at the CEFRC on chemical kinetics and reaction mechanisms of foundational fuels** *Multi Agency Coordination Committee for Combustion Research (MACCCR), 4th Annual Fuels Research Review*
  Wang, H.
  2011
- **Combustion kinetic modeling using multispecies time-histories in shock-tube oxidation of n-dodecane** *7th US National Combustion Meeting, Atlanta, GA*
  Tangko, R., Sheen, D. A., Wang, H.
  2011
- **Dye sensitized solar cells fabricated by flame stabilized on a rotating surface** *7th US National Combustion Meeting, Atlanta, GA*
  Memarzadeh, S., Phares, D. J., Wang, H.
  2011
- **Dependence of TiO2 crystal phase on flame synthesis conditions** *7th US National Combustion Meeting, Atlanta, GA*
  Memarzadeh, S., Thompson, C., Wang, H.
  2011
- **Experimental and modeling study the oxidation of isobutane and isobutene** *7th US National Combustion Meeting, Atlanta, GA*
  Yang, B., Wang, H., Hansen, N., Skeen, S., Cool, A. A.,
  2011
- **Uncertainty estimation of reduced chemical models** *13th International Conference on Numerical Combustion, Corfu, Greece*
  Lovas, T., Shaw, R. C., Brownbridge, G., Mosbach, S., Kraft, M., Sheen, D. A., Wang, H.
  2011
- **Combustion kinetic modeling using multispecies time-histories in shock-tube oxidation of heptane** *7th US National Combustion Meeting, Atlanta, GA*
  Sheen, D. A., Wang, H.
  2011
- **Modeling the pressure dependence of H2/O2/diluent mass burning rates** *7th US National Combustion Meeting, Atlanta, GA*
  Sheen, D. A., Wang, H.
  2011
- **Theory and kinetic modeling of isomerization reactions between benzylic and methylphenyl type radicals** *7th US National Combustion Meeting, Atlanta, GA*
  Dames, E., Wang, H.
  2011
- **A comparative study of the sooting properties of laminar premixed flames of C6 hydrocarbons** *7th US National Combustion Meeting, Atlanta, GA*
  Camacho, J., Lieb, S., Wang, H.
  2011
- **An experimental and modeling study of the propagation of cyclohexane and mono-alkylated cyclohexane flames** *PROCEEDINGS OF THE COMBUSTION INSTITUTE*
  Ji, C., Dames, E., Sirjean, B., Wang, H., Egolfopoulos, F. N.
  2011; 33: 971-978

- **Properties of nanocrystalline TiO2 synthesized in premixed flames stabilized on a rotating surface** *PROCEEDINGS OF THE COMBUSTION INSTITUTE*
  Memarzadeh, S., Tolmachoff, E. D., Phares, D. J., Wang, H.
  2011; 33: 1917-1924

- **Internal structure, hygroscopic and reactive properties of mixed sodium methanesulfonate-sodium chloride particles** *PHYSICAL CHEMISTRY CHEMICAL PHYSICS*
  Liu, Y., Minofar, B., Desyaterik, Y., Dames, E., Zhu, Z., Cain, J. P., Hopkins, R. J., Gilles, M. K., Wang, H., Jungwirth, P., Laskin, A.
  2011; 13 (25): 11846-11857

- **Evidence of aliphatics in nascent soot particles in premixed ethylene flames** *PROCEEDINGS OF THE COMBUSTION INSTITUTE*
  Cain, J. P., Camacho, J., Phares, D. J., Wang, H., Laskin, A.
  2011; 33: 533-540

- **Temperature-dependent gas-surface chemical kinetic model for methane ignition catalyzed by in situ generated palladium nanoparticles** *PROCEEDINGS OF THE COMBUSTION INSTITUTE*
  Shimizu, T., Wang, H.
  2011; 33: 1859-1866

- **Products of the Benzene + O(P-3) Reaction** *JOURNAL OF PHYSICAL CHEMISTRY A*
  Taatjes, C. A., Osborn, D. L., Selby, T. M., Meloni, G., Trevitt, A. J., Epifanovsky, E., Krylov, A. I., Sirjean, B., Dames, E., Wang, H.
  2010; 114 (9): 3355-3370

- **Methane ignition catalyzed by in situ generated palladium nanoparticles** *COMBUSTION AND FLAME*
  Shimizu, T., ABID, A. D., Poskrebyshev, G., Wang, H., Nabity, J., Engel, J., Yu, J., Wickham, D., Van Devener, B., Anderson, S. L., Williams, S.
  2010; 157 (3): 421-435

- **Propagation and extinction of premixed C-5-C-12 n-alkane flames** *COMBUSTION AND FLAME*
  Ji, C., Dames, E., Wang, Y. L., Wang, H., Egolfopoulos, F. N.
  2010; 157 (2): 277-287

- **Weakly Bound Carbon-Carbon Bonds in Acenaphthene Derivatives and Hexaphenylethane** *JOURNAL OF PHYSICAL CHEMISTRY A*
  Dames, E., Sirjean, B., Wang, H.
  2010; 114 (2): 1161-1168

- **Micro-FTIR study of soot chemical composition-evidence of aliphatic hydrocarbons on nascent soot surfaces** *PHYSICAL CHEMISTRY CHEMICAL PHYSICS*
  Cain, J. P., Gassman, P. L., Wang, H., Laskin, A.
  2010; 12 (20): 5206-5218

- **Kinetic modeling of one-ring aromatic compounds** *Spring Technical Meeting of the Western States Sections of the Combustion Institute, University of Colorado*
  Dames, E., Wang, H.
  2010

- **Nanocatalysts in Propulsion: Mechanisms and Optimization** *2010 DDRE MURI Conference, Arlington, VA*
  Wang, H.
  2010

- **Organic functionalities in aircraft and laboratory generated soot studied by micro-FTIR spectroscopy** *29th AAAR Annual Conference, Portland, OR*
  Cain, J. P., Spicer, C. W., Holdren, M. W., Cowen, K. A., Wang, H., Laskin, A.
  2010

- **A high-temperature chemical kinetic model of n-alkane (up to n-dodecane), cyclohexane, and methyl-, ethyl-, n-propyl and n-butyl-cyclohexane oxidation at high temperatures** *JetSurF version 2.0, (http://melchior.usc.edu/JetSurF/JetSurF2.0).*
  Wang, H., Dames, E., Sirjean, B., Sheen, D., A., Tango, R., Violi, A.
  2010

- **In Situ Generation of Pd/PdO Nanoparticle Methane Combustion Catalyst: Correlation of Particle Surface Chemistry with Ignition** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Van Devener, B., Anderson, S. L., Shimizu, T., Wang, H., Nabity, J., Engel, J., Yu, J., Wickham, D., Williams, S.
  2009; 113 (48): 20632-20639

- **Quantitative measurement of soot particle size distribution in premixed flames - The burner-stabilized stagnation flame approach** *COMBUSTION AND FLAME*
  Abid, A. D., Camacho, J., Sheen, D. A., Wang, H.
  2009; 156 (10): 1862-1870

- **Evolution of Soot Particle Size Distribution Function in Burner-Stabilized Stagnation n-Dodecane-Oxygen-Argon Flames** *ENERGY & FUELS*
  Abid, A. D., Camacho, J., Sheen, D. A., Wang, H.
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