Hongtao Zhong

Ph.D. Candidate Advanced Combustion and Propulsion Lab
hongtaoz@princeton.edu

EDUCATION

PRINCETON UNIVERSITY
Ph.D. in Mechanical and Aerospace Engineering
Sept 2017 - Present | Princeton, NJ
Cum. GPA: 3.97 / 4.0

TSINGHUA UNIVERSITY
B.E. in Energy and Power Engineering
Sept 2013 - Jun 2017 | Beijing
Department of Thermal Engineering
B.Ec. in Economics
Sept 2014 - Jun 2017 | Beijing
School of Economics and Management
Cum. GPA: 90 / 100

AWARDS

2018 Sayre Award
2017 King Peh Kwoh Fellowship
2016 Tsinghua Academic Scholarship
2014 Chinese National Scholarship

TEACHING

MAE 340 Independent Work
MAE 221 Thermodynamics
MAE 426 Rocket and Air-Breathing Propulsion Technology

EXPERIENCE

University of Cambridge
Jul 2016 - Aug 2016 | Cambridge, UK
Research Assistant

Lund University
Mar 2016 - Jun 2016 | Lund, Sweden
Exchange Student

ACTIVITIES

Chinese Lunch Event
May 2018 - May 2019 | Princeton
Organized weekly Chinese Lunch Event (1, 600 person-times participation).

Almgren Memorial Mayday Running Race
May, 2019 | Princeton
Participated as a member of Princeton ACSSPU Team (Ranked 4 / 8)

RESEARCH

Thermal-Chemical Instability of Weakly Ionized Plasma
Laser Diagnostics and Kinetic Studies in Fuel Oxidation

PUBLICATIONS

[1] **Zhong, H.**, Shneider, M. N., Mokrov, M. S., & Ju, Y. (2019). "Thermal-Chemical Instability of Weakly Ionized Plasma in a Reactive Flow". *Journal of Physics D: Applied Physics*, *52(48)*, *484001*.

[2] **Zhong, H.**, Teng, C. C., Yan, C., Ma, G., Wysocki, G., & Ju, Y. (2020). "Kinetic Study of Reaction $C_2H_5 + HO_2$ in a Photolysis Reactor with Time-Resolved Faraday Rotation Spectroscopy". *Proceedings of the Combustion Institute*, 2020, accepted for presentation.

[3] **Zhong, H.**, Mao, X., Rousso, A., Patrick, C., Yan, C., ... & Ju, Y. (2020). "Kinetic Study of Plasma-assisted N-dodecane/O_2/N_2 Pyrolysis and Oxidation in a Nanosecond-pulsed Discharge". *Proceedings of the Combustion Institute*, 2020, accepted for presentation.

[4] Teng, C. C., Yan, C., **Zhong, H.**, Rousso, A., ... & Wysocki, G. (2018) "HO_2 Radical Measurements in a Photolysis Reactor using Line-Locked Faraday Rotation Spectroscopy". *In Optics and Photonics for Energy and the Environment (pp. EW3A-6). Optical Society of America*.

[5] Yan, C., Teng, C. C., Chen, T., **Zhong, H.**, Rousso, A., ... & Ju, Y. (2020). "Kinetic Study of Excited Singlet Oxygen Atom O (^{1}D) Reactions with Acetylene.". *Combustion and Flame*, *212*, *135-141*.

[6] Yan, C., Yang, X., Zhao, H., **Zhong, H.**, Ma, G., ... & Ju, Y. (2020). "Controlled Dy-doping to Nickel-rich Cathode Materials in High Temperature Aerosol Synthesis". *Proceedings of the Combustion Institute*, 2020, accepted for presentation.

PRESENTATIONS

[1] "Thermal-Chemical Plasma Instability in a Reacting Flow". Oral. AIAA Scitech 2020 Forum, Orlando, FL (01/2020)

[2] "Dynamic Contraction of the Positive Column of a Self-sustained Glow Discharge in a Reacting Flow". Oral. 72nd Annual Gaseous Electronics Conference, College Station, TX (11/2019)

[3] "An Analysis of a New Thermal-Chemical Mechanism for Plasma Combustion Instability in Plasma Assisted Ignition". Oral. 11th US National Combustion Meeting, Pasadena, CA (03/2019)

[4] "Kinetic Studies of Excited Singlet Oxygen Atoms O (^{1}D) Reactions with Fuels in Plasma Assisted Combustion". Oral. AIAA Scitech 2019 Forum, San Diego, CA (01/2019)

[5] "Direct Measurements of Branching Ratios of O(^{1}D) Reactions with Alcohols". Oral. 15th Internatinal Conference on Fluid Dynamics, Sendai, Japan (11/2018)