

# Ze WANG, Ph.D.

Born 03, Jun. 1995 in Nei Mongol, China

✉ wangz2020@mail.sustech.edu.cn

🌐 <https://blog.combustion.work>

☎ +86-156-8624-9686

🏠 1088 Xueyuan Blvd, 518055, Shenzhen



## Main Research Fields

- 📌 Turbulent and Chemically Reactive Flows.
- 📌 Advanced Laser Diagnostics.
- 📌 Ammonia and Hydrogen Combustion.

## Education

- 2020.9 – 2024.12    📌 **Ph.D., Southern University of Science and Technology(SUSTech)** in Mechanics.  
Thesis title: *Investigation of Turbulent Combustion Characteristics of NH<sub>3</sub>/H<sub>2</sub> Flame Based on Multi-Physics Visualization.*
- 2018.6 – 2020.6    📌 **M.Eng. Southern University of Science and Technology(SUSTech)**, in Aerospace Engineering(Joint Program with Harbin Institute of Technology, HIT) .  
Thesis title: *Study of the Flow Field Characteristics of a Central Staged Combustor.*
- 2014.9 – 2018.6    📌 **B.Eng. Northwestern Polytechnical University(NPU)** in Aircraft Design and Engineering.  
Thesis title: *Study of Flight Quality based on Flight Simulation.*

## Research Publications

### Journal Articles



- 1    **Z. Wang**, X. Li, L. Li, Z. Zhao, B. Zhou, and X. Gan, "Strategy for simultaneous multi-scalar imaging in turbulent NH<sub>3</sub>/H<sub>2</sub> premixed flames using a single laser system," *Combustion and Flame*, vol. 242, p. 112 185, 2022.
- 2    **Z. Wang**, X. Li, T. Li, A. Dreizler, A. N. Lipatnikov, X. Liu, X. Gan, and B. Zhou, "Experimental investigation of internal structures of NH<sub>3</sub>/H<sub>2</sub>/O<sub>2</sub>/N<sub>2</sub> premixed jet flames using multi-scalar imaging," *Proceedings of the Combustion Institute*, vol. 40, no. 1-4, p. 105 436, 2024.
- 3    X. Li, **Z. Wang**, T. Li, A. Dreizler, A. N. Lipatnikov, X. Liu, X. Gan, and B. Zhou, "Investigation of burning velocity of lean and rich premixed NH<sub>3</sub>/H<sub>2</sub> turbulent flames using multi-scalar imaging," *Proceedings of the Combustion Institute*, vol. 40, no. 1-4, p. 105 541, 2024, (co-first author).
- 4    L. Li, X. Li, **Z. Wang**, B. Wang, H. Lin, W. Hu, F. Chang, and B. Zhou, "Experimental investigation of the flow-spray field in a realistic concentric staged high-temperature-rise combustor," *Fuel*, vol. 318, p. 123 606, Jun. 2022.
- 5    Z. Zhao, **Z. Wang**, M. Sun, H. Chen, D. Yang, and B. Zhou, "Flame describing function of conical laminar premixed flames subjected to parasite-velocity decoupled equivalence ratio oscillation," *Combustion and Flame*, vol. 275, p. 114 078, May 2025, ISSN: 00102180. DOI: 10.1016/j.combustflame.2025.114078.
- 6    **Z. Wang**, X. Li, T. Li, A. Dreizler, S. M. Mousavi, A. N. Lipatnikov, and B. Zhou, "Experimental investigation of NH<sub>3</sub>-H<sub>2</sub> jet flames adopting multi-scalar imaging: Comparison of turbulent burning velocities obtained using different flame-front markers," *Combustion and Flame*, vol. 275, p. 114 054, May 2025, ISSN: 00102180.

- 7 T. Li, S. Shi, R. Schultheis, **Z. Wang**, D. Geyer, B. Zhou, and A. Dreizler, "Flame and flow characteristics of lean premixed turbulent NH<sub>3</sub>/H<sub>2</sub>/N<sub>2</sub> - air flames with increasing Karlovitz numbers," *Journal of Ammonia Energy*, vol. 3, no. 1, Apr. 2025, ISSN: 2752-7735.
- 8 **Z. Wang**, W. Gu, C. Dong, X. Liu, and B. Zhou, "High-speed planar laser-induced fluorescence of the nh radical using the  $A^3\Pi - X^3\Sigma^-$  (o-o) band," *submitted to Combustion and Flame*, 2025.
- 9 M. Chen, Z. Zhao, X. Wang, **Z. Wang**, F. Li, J. Zhu, M. Sun, and B. Zhou, "Wavelet optical flow velocimetry of a scramjet combustor using high-speed frame-straddling focusing schlieren images," *Combustion and Flame*, vol. 269, p. 113 705, Nov. 2024, ISSN: 0010-2180.
- 10 Z. Zhao, X. Wang, M. Chen, **Z. Wang**, F. Li, M. Sun, J. Zhu, and B. Zhou, "High spatiotemporal frame-straddling focusing schlieren imaging in a scramjet engine," *Measurement Science and Technology*, vol. 35, no. 11, p. 117 004, Nov. 2024, ISSN: 0957-0233, 1361-6501.





## Conference Proceedings

- 1 **Z. Wang**, X. Li, Y. Hou, X. Gan, and B. Zhou, "Investigation of internal structure of NH<sub>3</sub>/H<sub>2</sub>/air turbulent premixed flame," in *Annual Conference on Combustion Science of the Chinese Society of Engineering Thermophysics*, Best Paper Reward, 2023.
- 2 **Z. Wang**, X. Li, T. Li, A. Dreizler, A. N. Lipatnikov, X. Liu, X. Gan, and B. Zhou, "Experimental investigation of internal structures of NH<sub>3</sub>/H<sub>2</sub>/O<sub>2</sub>/N<sub>2</sub> premixed jet flames using multi-scalar imaging," in *Combustion Institute's 40th International Symposium*, 2024.
- 3 **Z. Wang** and B. Zhou, "High-speed planar laser-induced fluorescence of the nh radical using the  $A^3\Pi - X^3\Sigma^-$  (o-o) band," in *The Laser Diagnostics in Energy and Reacting Flows of Gordon Research Conference*, 2025.

## Awards and Achievements

- 2022.6  **Excellent Academic Paper Scholarship**, Department of Mechanics and Aerospace Engineering, SUSTech.
- 2023.10  **Best Paper Award**, Annual Conference on Combustion Science of the Chinese Society of Engineering Thermophysics.

## Skills

- |                   |                                                                                                                                                                   |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Languages         |  Chinese, English, German(Learning).                                           |
| Coding            |  Matlab, C++, Python, L <sup>A</sup> T <sub>E</sub> X...                       |
| Software          |  Chemkin, Cantera, Fluent, UG, AutoCAD ...                                     |
| Experiment Skills |  Laser-based combustion diagnostics, Focused Schlieren, Imaging Processing ... |

## Referees

### Prof. Bo Zhou

Associate Professor  
Southern University of Science and Technology,  
Xueyuan Blvd 1088,518055,Shenzhen  
zhoub3@sustech.edu.cn

### Prof. Xiaohua Gan

Professor  
Southern University of Science and Technology,  
Xueyuan Blvd 1088,518055,Shenzhen  
ganxh@sustech.edu.cn