

Ze WANG

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Southern University of Science and Technology (SUSTech), 1088 Xueyuan Avenue, Shenzhen 518055, China

Main Research Field

- Laser Diagnostics for Reactive Flows;
- Ammonia (NH₃) and Hydrogen (H₂) Combustion;
- Plasma assisted NH₃ Reforming

Education

- **Hohhot Electric Power Primary School** 2002.09 - 2005.03
Primary School, Grade 1 to 3 Hohhot, China
- **Hohhot No.6 Railway Primary School** 2005.03 - 2008.07
Primary School, Grade 3 to 6 Hohhot, China
- **Hohhot Xinghe Middle School** 2008.09 - 2011.07
Junior High School Hohhot, China
- **Hohhot No.2 Senior High School** 2011.09 - 2014.07
Senior High School Hohhot, China
- **Northwestern Polytechnical University (NPU)** 2014.09 - 2018.07
B.Eng in Aircraft Design and Engineering Xi'an, China
 - Thesis: Development of a 6-DOF Simulation Framework for Vehicle Dynamic Response Analysis Based on Python
- **Southern University of Science and Technology (SUSTech)** 2018.09 - 2020.07
M.Eng in Aerospace Engineering (Advisor: Bo Zhou) Shenzhen, China
 - Thesis: Numerical Study on the Flow Characteristics of a Central Staged Low-Emission Combustor
 - Joint Master Program with Harbin Institute of Technology (HIT)
 - Outstanding Master Graduate of Department of Mechanics and Aerospace Engineering (MAE) in SUSTech
- **Southern University of Science and Technology (SUSTech)** 2020.09 - 2024.12
Ph.D. in Mechanics (Advisor: Bo Zhou) Shenzhen, China
 - Thesis: Investigation of Turbulent Combustion Characteristics of NH₃/H₂ Flame Based on Multi-Physics Visualization
 - Outstanding Doctoral Graduate of SUSTech

Work Experience

- **Senior Visiting Scholar** 2025.01 - Now
Southern University of Science and Technology
 - Development of high-speed diagnostic method to image flow field and reaction zone of NH₃/H₂ flame
 - Development of laser-based diagnostic method for plasma assisted NH₃ reforming

Publications List

J=JOURNAL, S=IN SUBMISSION, #=CO-FIRST AUTHOR

- [J.1] **Ze Wang**, X. Li, L. Li, Z. Zhao, B. Zhou*, X. Gan. (2022). **Strategy for Simultaneous Multi-scalar Imaging in Turbulent NH₃/H₂ Premixed Flames Using a Single Laser System.** *Combust. Flame*, 241:112185. DOI: 10.1016/j.combustflame.2022.112185
- [J.2] **Ze Wang**, X. Li, T. Li, A. Dreizler, A.N. Lipatnikov, X. Liu, X. Gan, B. Zhou*. (2024). **Experimental Investigation of Internal Structures of NH₃/H₂/O₂/N₂ Premixed Jet Flames Using Multi-scalar Imaging.** *Proc. Combust. Inst.*, 40:105436. DOI: 10.1016/j.proci.2024.105436
- [J.3] **Ze Wang**, X. Li, T. Li, A. Dreizler, S.M. Mousavi, A.N. Lipatnikov, B. Zhou*. (2025). **Experimental Investigation of NH₃-H₂ Jet Flames Adopting Multi-scalar Imaging: Comparison of Turbulent Burning Velocities Obtained Using Different Flame-front Markers.** *Combust. Flame*, 285:114054. DOI: 10.1016/j.combustflame.2025.114054
- [J.4] X. Li#, **Ze Wang**#, T. Li, A. Dreizler, A.N. Lipatnikov, X. Liu, X. Gan, B. Zhou*. (2024). **Investigation of Burning Velocity of Lean and Rich Premixed NH₃/H₂ Turbulent Flames Using Multi-scalar Imaging.** *Proc. Combust. Inst.*, 40:105541. DOI: 10.1016/j.proci.2024.105541
- [J.5] T. Li*, S. Shi, R. Schultheis, **Ze Wang**, D. Geyer, B. Zhou, A. Dreizler. (2025). **Flame and Flow Characteristics of Lean Premixed Turbulent NH₃/H₂/N₂ - Air Flames with Increasing Karlovitz Numbers.** *J. Ammonia Energy*, 37. DOI: 10.18573/jae.37
- [J.6] **Ze Wang**, W. Gu, C. Dong, Y. Liu, X. Liu, B. Zhou*. **High-speed Planar Laser-induced Fluorescence of the NH Radical Using the A³Π - X³Σ⁻ (o-o) Band.** accepted by *Fuel*.

Conference Experience

- **40th International Symposium of Combustion Institute** *Milan, Italy*
1 Oral Presentation about Publication J.2 Jul 2024
- **Laser Diagnostics in Energy and Reacting Flows of Gordon Research Conference** *Les Diablerets, Switzerland*
Poster about Publication J.6 Jun 2025

Skills

- **Programming Languages:** Matlab, C++, Python, LaTeX, HTML...
- **Scientific Software:** Chemkin, Cantera, LIFbase, Fluent...
- **Experimental Skills:** Laser diagnostics, Imaging processing, Flow visualization...

Honors and Awards

- **Excellent Academic Paper Award** 2022
Department of Mechanics and Aerospace Engineering (MAE), SUSTech
- **Best Paper Award** 2025
3rd Symposium on Ammonia Energy & Journal of Ammonia Energy, Shanghai
- **Outstanding Doctoral Graduate** 2025
Southern University of Science and Technology (SUSTech)
- **Humboldt Research Fellowship for Postdocs** 2026
Alexander von Humboldt Foundation, Germany

Supervising Activities

- **Teaching Assistance** 2019
Advanced Topics in Modern Mechanics
 - Taught by Prof. Minping Wan
- **Teaching Assistance** 2020
Combustion Science
 - Taught by Prof. Bo Zhou

Activities and Affiliations

- **Reviewer of Proceeding of Combustion Institute (PCI), Combustion and Flame (CNF), et.al** *since 2026*
- **Member of the International Combustion Institute** *since 2023*

Referees

1. **Prof.Dr.habil. Andreas Dreizler**
Head of Institute of Reactive Flows and Diagnostics (RSM)
TU Darmstadt
Email: dreizler@rsm.tu-darmstadt.de
Relationship: collaborator, host leader
2. **Dr.-Ing Tao Li**
Group leader in RSM
TU Darmstadt
Email: tao.li@rsm.tu-darmstadt.de
Relationship: collaborator, group leader in host
3. **Prof. Bo Zhou**
Associate Professor in SUSTech
Department of Mechanics and Aerospace Engineering, SUSTech
Email: zhoubz@sustech.edu.cn
Relationship: Advisor of Ph.D and master thesis
4. **Prof. Andrei Lipatnikov**
Professor in CTH
Chalmers University of Technology (CTH)
Email: andrei.lipatnikov@chalmers.se
Relationship: collaborator