

Peng Jiang

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[Google Scholar](#)

Address: Kunming City, Yunnan Province, China

EDUCATION

Wuhan University of Technology | Wuhan, China

M.S. Power Engineering & Engineering Thermal Physics GPA: 3.50/4.0 Thesis: 91.80/100.0 2019/09 - 2022/07

Core Modules: Advanced Fluid Mechanics 90, Advanced Heat Transfer 91, Computational Chemistry & New Energy Engineering Applications 91, Modern Measuring Technology for Power Machinery 92

Academic Award: Outstanding Postgraduate of Wuhan University of Technology 2022/07

Kunming University of Science and Technology | Kunming, China

B.S. Vehicle Engineering GPA: 3.16/4.0 Thesis: 84.80/100.0 2015/09 - 2019/07

Core Modules: Fluid Mechanics and Aerodynamics 84, Engineering Thermodynamics 91, General Chemistry 75, Heat Transfer 84, Engine Emissions and Control 90

Academic Award: Outstanding Graduate of Yunnan Province 2019/07

WORK EXPERIENCE

Dept of Bldg. Env. & Energy Eng, Hong Kong Polytechnic University | Hong Kong SAR, China

Research Assistant in Indoor Environmental Quality Laboratory 2022/08 - 2024/02

PUBLICATIONS

Jiang, P., Xu, L., Wang, Q., Wang, Z., Chung, S. H., and Wang, Y.: Experimental and kinetic study on aromatic formation in counterflow diffusion flames of methane and methane/ethylene mixtures, *Fuel*, 354, 129304, 2023.

Zhang, J., Yan, F., Jiang, P., Zhou, M., and Wang, Y.: Chemical and Sooting Structures of Counterflow Diffusion Flames of Butanol Isomers: An Experimental and Modeling Study, *Combustion Science and Technology*, 195, 2165-2190, 2023.

Zhou, M., Yan, F., Ma, L., Jiang, P., Wang, Y., and Chung, S. H.: Chemical speciation and soot measurements in laminar counterflow diffusion flames of ethylene and ammonia mixtures, *Fuel*, 308, 122003, 2022.

Jiang, P., Zhou, M., Wen, D., and Wang, Y.: An experimental multiparameter investigation on the thermochemical structures of benchmark ethylene and propane counterflow diffusion flames and implications to their numerical modeling, *Combustion and Flame*, 234, 111622, 2021.

RESERCH EXPERIENCES

Project 5: Experimental study on mitigating the transmission of airborne pollutants in commercial aircraft using personalized ventilation and gasper system. Supervisor: Dr. Ruoyu You

Independent Research | Indoor Environmental Quality Laboratory of PolyU 2022/08 - 2024/02

- Independently constructed and tested a full-scale, three-row Boeing 737 aircraft cabin facility, including a personalized displacement ventilation system and two manikins, to study the transmission of air pollutants in commercial airliners.
- Evaluated a new measuring system based on quartz-enhanced photoacoustic spectroscopy (QEPAS) technique for fast response, specifically designed to study the transport and distribution of air pollutants in indoor environments using sulphur hexafluoride (SF₆) tracer gas.

Project 4: Experimental and kinetic study on aromatic formation in counterflow diffusion flames of methane and methane/ethylene mixtures. Supervisor: Prof. Yu Wang

Independent Research | Combustion and Laser Sensing Laboratory of WUT 2021/08 - 2022/06

- Independently developed a method for measuring polycyclic aromatic hydrocarbons (PAHs) using gas chromatography-mass spectrometry (GC-MS) to qualify and quantify PAHs with up to three rings in counterflow diffusion flames (CDFs).
- Conducted an experimental study of C₁-C₆ intermediates and PAHs in methane and methane/ethylene flames using GC-MS to clarify reaction pathways and provide a novel dataset for gas-phase speciation and soot formation in methane CDFs.
- Performed simulations using the OPPDIF module of the ANSYS Chemkin package to conduct kinetic pathway analysis.

Project 3: Chemical and Sooting Structures of Counterflow Diffusion Flames of Butanol Isomers: An Experimental and Modeling Study. Supervisor: Prof. Yu Wang

Key Member | Combustion and Laser Sensing Laboratory of WUT 2021/05 - 2021/07

- Conducted an experimental study of C₁-C₆ intermediates in butanol isomer flames using GC analysis to understand the effects of isomeric structures on sooting tendencies.
- Contributed to simulations using the OPPDIF module of the ANSYS Chemkin package to conduct kinetic pathway analysis.

Project 2: Chemical speciation and soot measurements in laminar counterflow diffusion flames of ethylene and ammonia mixtures. Supervisor: Prof. Yu Wang

Key Member | Combustion and Laser Sensing Laboratory of WUT 2021/01 - 2021/04

- Conducted an experimental study of C₁-C₆ intermediates in ethylene/ammonia flames using GC analysis to provide a comprehensive dataset on sooting characteristics and intermediate species for model validation, providing chemical kinetics insights into ammonia's effect on soot formation in CDFs.
- Contributed to simulations using the OPPDIF module of the ANSYS Chemkin package to conduct kinetic pathway analysis.

Project 1: An experimental multiparameter investigation on the thermochemical structures of benchmark ethylene and propane counterflow diffusion flames and implications to their numerical modeling. Supervisor: Prof. Yu Wang

Independent Research | Combustion and Laser Sensing Laboratory of WUT 2020/01 - 2020/12

- Independently developed a microprobe sampling system based on gas chromatography (GC) to achieve C₁-C₆ intermediate species measurement in counterflow diffusion flames (CDFs).
- Conducted an experimental study of C₁-C₆ intermediates in ethylene and propane benchmark flames using GC analysis to provide a comprehensive dataset for validating future high-fidelity gas-phase and soot models.
- Performed simulations using the OPPDIF module of the ANSYS Chemkin package to conduct kinetic pathway analysis.

RESEARCH INTERESTS

Atmospheric chemistry Air quality Aerosols

TEACHING EXPERIENCES

Lab supervision for undergraduates at The Hong Kong Polytechnic University 2023/05 - 2024/02

SKILLS

Laboratory Skills: Solid hands-on experience in mass spectrometry (GC-MS) and data processing; extensive knowledge and experience related to the physicochemical processes of soot particle formation; experience in air quality measurements; robust knowledge of hydrocarbon fuel chemistry and combustion; and experience in experimental optics, e.g., Quartz-enhanced photoacoustic spectroscopy (QEPAS) and INNOVA 1312 Photoacoustic Multi-gas Monitor.

Computer Skills: Microsoft Office; ORIGINPRO; SOLIDWORKS; MATLAB; ANSYS.

Language: Chinese - Mandarin (Native language); English (IELTS: Overall/L/R/W/S 6.5/7.0/7.0/6.5/5.5).