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Personal webpage: https://www.rgcombustion.org/leader
Google Scholar: https://scholar.google.com/citations?user=i-pdhjoAAAAJ&hl=en&oi=sra
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Education

2010	Ph.D. in Mechanical and Aerospace Engineering Princeton University Supervisor: Prof. Chung K. Law
2003	M.S. in Aerospace Engineering Institute of Mechanics, Chinese Academy of Sciences Supervisor: Late Prof. Gong Yu
2000	B.S. in Mechanical Engineering University of Science and Technology of China Supervisor: Prof. Shengli Xu

Employment

2022-Present	Associate Professor Department of Mechanical Engineering City University of Hong Kong
2012-2022	Associate Head (Teaching) (2021-2022) Associate Professor (2017-2022) Assistant Professor (2012-2017) Department of Mechanical Engineering The Hong Kong Polytechnic University
2010-2012	Combustion Energy Research Fellow Combustion Energy Frontier Research Center of the U.S. Department of Energy Princeton University

2010 Postdoctoral Research Associate
Department of Mechanical and Aerospace Engineering
Princeton University

2003-2004 Research Staff
Institute of Mechanics, Chinese Academy of Sciences

Research Interests

Droplet and spray dynamics; Theoretical chemical kinetics; Flame dynamics; Vortex dynamics; AI for Science

Honors and Awards

2025 Kan Tong Po Fellowship
The Royal Society

2025 Second Prize for Outstanding Scientific and Technological Research Achievements
Chinese Society of Engineering Thermophysics

2025 First Prize for Outstanding Scientific and Technological Research Achievements of Shaanxi Higher Education Institutions
Shaanxi Provincial Department of Education

2025 IAS Visiting Fellow
Institute of Advanced Studies, Loughborough University

2024 Best Paper Award
The First National Conference on AI for Fluid Mechanics

2024 2024 UAiTED Faculty Exchange Scholarship
Sayling Wen Cultural & Educational Foundation

2022 Best Paper Award
2022 China National Symposium on Combustion, Shanghai

2021 Best Paper Award
2021 China National Symposium on Combustion, Dalian

2020 Best Paper Award
2020 ILASS (Institute for Liquid Atomization and Spray Systems)-Asia Conference, Zhenjiang, China

2019 Guest Professor
School of Energy and Power Engineering, Xi'an Jiao Tong University

2019 The ASPACC Young Investigator Award (a best paper award)
The 12th Asia-Pacific Conference on Combustion, Fukuoka, Japan

2017 The ASPACC Young Investigator Award (a best paper award)
The 11th Asia-Pacific Conference on Combustion, Sydney, Australia

2017 Best Poster Award
2017 China National Symposium on Combustion

2017 Guest Professor
State Key Laboratory of High-temperature Gas Dynamics, Chinese Academy of Sciences

2017 PKU Engineering Globex Faculty Fellow
College of Engineering, Peking University

2016 Research Grant Achievement Award
Faculty of Engineering, The Hong Kong Polytechnic University

2014 The Appreciation of Research Achievement
Committee of Science and Technology of Innovation of Shenzhen

2010 Combustion Energy Research Fellowship
Princeton University

2008 Wu Prize for Excellence
Princeton University

2004 Yongling Liu Fellowship
Chinese Academy of Sciences

2002 Yung-Huai Kuo Fellowship
Institute of Mechanics, Chinese Academy of Sciences

2000 Best Senior Thesis Prize
University of Science and Technology of China

Ph.D. Supervision

Tao Yang (2024)

Theoretical and Computational Investigations of Flame-Vortex and Droplet-Surface Dynamics.

Yicheng Chi (2022)

Ab Initio Chemical Kinetics and Flickering Flame Dynamics of N-Alkane Combustion.

Chengming He (2019)

Bouncing and Coalescence of Binary Droplets Undergoing Off-Center Collisions.

Dawei Zhang (2018)

Experimental Study of Hypergolic Ignition by Droplet Collisions.

Dehai Yu (2017)

Dynamics of Circulation-controlled Firewhirls and Periodically Forced Jets.

Xuren Zhu (2017)

Flame Stabilization in Gas-fueled Inverse Diffusion Flames and Liquid-fueled Swirling Combustion.

Teaching

At the Hong Kong Polytechnic University

AP10005	Physics I	(2013-2014, Fall Semester)
ME3403	Advanced Engineering Science in Products	(2012-2015, Fall & Spring Semesters)
ME3407	Fluid Mechanics	(2012-2014, Fall & Spring Semesters)
ME34003	Thermofluid Mechanics	(2018-2019, Spring Semester)
ME34004	Fluid Mechanics	(2014-2015, Spring Semester)
ME4409	Engine Technology	(2013-2015, Fall & Spring Semesters)
ME44003	Combustion and Pollution Control	(2017-2018, Spring Semester)
ME47007	Aircraft and Spacecraft Propulsion	(2018-2019, Fall Semester)
ME556	Advanced Combustion Systems	(2014-2022, Fall & Spring Semester)
ME576	Turbulent Flow and Aerodynamics	(2014-2021, Spring Semester)
ME6401	Combustion Science	(2014-2022, Fall Semester)
ME6603	Advanced Math. of Phys. and Modern Eng.	(2019-2022, Spring Semester)

At the City University of Hong Kong

MNE8108	Engineering Methods	(2022-2024, Semester B)
MNE3120	Measurement and Instrumentation	(2023-2024, Semester A)
MNE4010	Dynamics and Vibrations	(2023-2024, Semester A)
MNE3205	Flight Mechanics	(2024-2026, Semester A)
MNE4201	Aerodynamics	(2024-2026, Semester B)

Other Teaching Activities

Theoretical Chemical Kinetics of Unimolecular Reactions	(2015, Invited Summer Short Course, 1 credit, 16 Hours, Tsinghua University)
Combustion Science and Engineering	(2017, Invited Summer Full Course, 3 credits, 45 Hours, Peking University)

MSE2104 Mechanical Behavior of Materials (2025-2016, Semester A, 3 credits, 39 Hours, City University of Hong Kong - Dongguan)

Professional Society Membership

Committee Member, Combustion Division, Chinese Society of Engineering Thermophysics
Member, The Combustion Institute
Senior Member, AIAA
Member, American Physical Society
Member, Chinese Chemistry Society

Academic Services

Conference Committee Membership/Chairmanship

1. The 26th Annual Conference on Liquid Atomization and Spray Systems-Aisa, Hong Kong, 2028, Local Organizing Committee Chairman, International Organizing Committee Member
2. The 4th Asia Aerospace and Astronautics Conference, Hong Kong, 2026, Local Organizing Committee Chairman, International Organizing Committee Member
3. The 15th Asia-Pacific Conference on Combustion (ASPACC 2025), Singapore, 2025, Program Committee Member
4. The 1st International Symposium on Nonequilibrium Transport Phenomena, Beijing, 2025, International Scientific Advisory Committee Member
5. The 16th International Conference on Combustion and Energy Utilization, Hong Kong, 2025 Local Organizing Committee Chairman, International Organizing Committee Member
6. ILASS (The Institute for Liquid Atomization and Spray Systems)-Hong Kong (a part of ILASS-Asia and ILASS-International), Hong Kong, 2024-Present Founding Committee Chairman
7. The 16th International Conference for Liquid Atomization and Spray Systems, Shanghai, China, 2024 Member of the Committee of Experts
8. The 15th International Conference on Combustion and Energy Utilization, Beijing, China, 2023 International Organizing Committee Member
9. 2020 China National Symposium on Combustion Chairman of Spray and Droplet Combustion Colloquium

10. 2019 China National Symposium on Combustion
    Co-Chairman of Spray and Droplet Combustion Colloquium
11. 2018 China National Symposium on Combustion
    Co-Chairman of Spray and Droplet Combustion Colloquium

Conference Session Chair

12. International Symposium on AI for Fluid Mechanics, Hong Kong, 2025
13. The 15th Asia-Pacific Conference on Combustion (ASPACC 2025), Singapore, 2025
14. The 1st International Symposium on Nonequilibrium Transport Phenomena, Beijing, April 07-10, 2025
15. 2024 Silk Road International Symposium on The Cooperation and Integration of Industry, Education, Research and Application of Energy and Chemicals (SRISEC 2024) , Xi'an, China, November 30, 2024.
16. The 16th International Conference for Liquid Atomization and Spray Systems, Shanghai, China, 2024
17. The 15th International Conference on Combustion and Energy Utilization, Beijing, China, 2023
18. The 12th International Conference on Chemical Kinetics, Hefei, China, 2023
19. The 15th International Conference on Liquid Atomization and Spray Systems, Edinburgh, Scotland, 2021
20. The 38th International Symposium on Combustion, Adelaide, Australia, 2021
21. The 21st Annual Conference on Liquid Atomization and Spray Systems – Asia, China, 2020
22. The 12th Asia-Pacific Conference on Combustion, Fukuoka, Japan, 2019
23. 2020 China National Symposium on Combustion
24. 2019 China National Symposium on Combustion
25. 2018 China National Symposium on Combustion
26. The 8th East Asia Mechanical and Aerospace Engineering Workshop, the Hong Kong Polytechnic University, 2018.
27. The 13th International Conference on Combustion & Energy Utilization, Taipei, 2016
28. The 10th Asia-Pacific Conference on Combustion, Beijing, 2015

29. The 4th East Asia Mechanical and Aerospace Engineering Workshop, the Hong Kong Polytechnic University, 2014.
30. Fall Technical Meeting Eastern States Section of the Combustion Institute, University of Connecticut, 2011

Editorship and Editorial Board Membership

- Propulsion and Energy, Member of Youth Editorial Board
- Atomization and Sprays, Guest Editor

Reviewer for Journals, Conferences, and Funding Agencies

- Journals in Physics: Journal of Fluid Mechanics, Physical Review Fluids, Physics of Fluids, AIP Advances, Scientific Reports, Journal of Colloid and Interface Science, SCIENTIA SINICA, Scientia Iranica, PLOS ONE
- Journals in Chemistry: Journal of the American Chemical Society, Journal of Physical Chemistry A, Langmuir, International Journal of Chemical Kinetics, ACS Omega, AlChE Journal, Analytical Chemistry, Chemical Engineering Journal, Colloids and Surfaces A, Thermochimica Acta, Asia-Pacific Journal of Chemical Engineering
- Journals in Mechanical Engineering: Combustion and Flame, Proceedings of Combustion Institute, Combustion Science and Technology, International Journal of Heat and Mass Transfer, International Journal of Multiphase Flow, Atomization and Sprays, Fire Technology, Internal Journal of Hydrogen Energy, International Journal of Green Energy, Energy Conversion and Management, European Journal of Mechanics -B/Fluids, Energy Reports, Energy and Fuel, Fuel, Journal of Thermal Analysis and Calorimetry, Advances in Mechanical Engineering, Acta Mechanica, Nuclear Engineering and Design
- Journals in Aerospace Engineering: AIAA Journal, Journal of Propulsion and Power, Journal of Aerospace Engineering, Shock Waves, Aerospace Science and Technology, Advances in Aerodynamics, Chinese Journal of Aeronautics
- Conferences: AIAA, ASME, ASPACC, ICLASS, ISAAC-NL, Chinese National Combustion Meeting
- Competitions: International Space Science and Scientific Payload Competition (ISSSP 2025)
- Funding Agencies: National Science Foundation of China (NSFC), The Israel Science Foundation, Research Council of Norway, U.S. Department of Energy (BES Early Career Postal Review), National Science Centre Poland

Funded Research Projects (in the capacity of principal investigator) *

(* original and sole PI)

By the Hong Kong Research Grants Council (HKRGC)

1. General Research Fund (GRF), Jan. 2022 – Dec. 2024(approved in Jul. 2021), HKD 816.601K
   A Theoretical, Experimental, and Computational Framework for Droplet Collision Modelling in Lagrangian-Eulerian Simulation of Sprays
2. General Research Fund (GRF), Jan. 2021 – Dec. 2023(approved in Jul. 2020), HKD 873.995K
   Towards Quantitatively Predictive Modelling of Droplet Collision in Spray Simulation: Head-on Collision of Equal-size Droplets
3. General Research Fund (GRF), Jan. 2017 – Dec. 2019(approved in Jul. 2016), HKD 675.647K
   Experimental and Numerical Investigation on the Collision of Binary Droplets of Shear-thinning Fluids in Atmospheric Air
4. General Research Fund (GRF), Jan. 2015 – Dec. 2017(approved in Jul. 2014), HKD 500K
   Dynamics of Binary Droplet Collision under Elevated Pressures
5. Early Career Scheme (ECS), Jan. 2014 – Dec. 2016(approved in Jul. 2013), HKD 789K
   Ab initio Chemical Kinetics for Key Reactions in Biodiesel Combustion
6. SRFDP&RGC ERG Joint Research Scheme, Jan. 2014 – Dec. 2016(approved in Aug. 2013), HKD 400K
   Theoretical Chemical Kinetics for Pyrolysis and Oxidation of Large Biodiesel Molecules

By the National Science Foundation of China (NSFC)

1. NSFC, General Program, 2022-2025(approved in Aug. 2021, approved for transfer to CityU in 2023), RMB 580K
   Theoretical and Modelling Study on Droplet Collision in Lagrangian-Eulerian Simulation of Sprays
2. NSFC-Major Research Plan on Turbulent Combustion, General Program, 2017-2019(approved in Aug. 2016), RMB 600K
   High-level Ab Initio Chemical Kinetics of Combustion of Large Molecule Straight-Chain Alkanes

By Industries

1. Shanghai Astropulsion Technology Engineering Co. Limited, (End User: Shanghai Institute of Space Propulsion; Intermediate: PolyU Technology and Consultancy Co. Limited) 2023-2028(approved in 2023), HKD 1,950K
   Influence of Propellant Temperature on the Performance of Space Propulsion Engine

By Other External Funding Agencies/Institutions

1. Institute of Mechanics, Chinese Academy of Sciences, 2023 – 2024(approved in 2023), RMB 210K
   Chemical Kinetics Analysis of Fuel Combustion under Shock Wave Compression
2. State Key Laboratory of Engines, Tianjin University, 2018 – 2019(approved in 2017), RMB 100K
   Modeling Droplet Collisions in High-pressure Sprays
3. State Key Laboratory of High-temperature Gas Dynamics, Chinese Academy of Sciences, 2017 – 2018(approved in 2016), RMB 200K
   Detailed Chemical Reaction Mechanism of C0-C3 Mixtures for Supersonic Combustion
4. Institute of Mechanics, Chinese Academy of Sciences, 2013 – 2014(approved in 2013), RMB 150K
   Reduced Chemical Reaction Mechanism for the Pyrolysis of Kerosene Surrogates
5. Committee of Science and Technology of Innovation of Shenzhen, 2013 – 2014(approved in 2013), RMB 340K
   First-Principle Calculation for Chemical Kinetics of Biodiesel Combustion

By City University of Hong Kong

1. Institute of Digital Medicine, 2025-2026 (approved in Sept. 2024), HKD100K
   Deep Learning in Digital Medicine: An Automatic Assessment System for Identifying and Managing Challenging Patients
2. APRC – CityU New Research Initiatives/Infrastructure Support from Central, 2022-2025(approved in Jul. 2022), HKD 2,646K
   Fundamental Combustion and Propulsion Laboratory
3. ARG – CityU Applied Research Grant, 2023-2025(approved in 2023), HKD 295.720K
   3D-printed Slotted Swirlers for Gas-turbine Engine Combustors Fueled with Natural Gas /Ammonia Gas Mixtures

By the Hong Kong Polytechnic University

1. Postdoc Matching Fund Scheme, 2022-2024, HKD 366.912K
   Airborne Transmission by Respiratory Droplets
2. Postdoc Matching Fund Scheme, 2021-2023, HKD 360.360K
   Dynamic Wetting of Newtonian and Non-Newtonian Fluids on Complex Structure Surfaces
3. Central Research Grants, 2020 – 2022, HKD 148.780K
   Unified Theory and Predictive Modelling for Droplet Coalescence

4. Matching Grant for China Projects, 2017 – 2019, HKD 142.284K
   High-level Ab Initio Chemical Kinetics of Combustion of Large Molecule Straight-chain Alkanes
5. Joint Supervision Scheme with the Chinese Mainland, Taiwan, and Macao Universities 2018/19, 2019-2020, HKD180K
   Spray Impingement Modelling and Simulation based on Accurate Description of Droplet Impact Dynamics
6. Central Research Grants, 2017 – 2019, HKD 158K
   Hypergolic Ignition Induced by Propellant Droplet Collision
7. Central Research Grants, 2015 – 2018, HKD 189K
   Experimental Study and Large Eddy Simulation of Slotted Swirler Combustor Fueled with Natural Gas/Synthesis Gas Mixtures
8. Areas of Excellence Committee, 2015 – 2016, HKD 3,945K (Project Coordinator)
   Advanced Multi-Parameter Optical/Laser Diagnostic System for Thermal-fluids
9. Central Research Grants, 2014 – 2018, HKD 200K
   Computational Study on Slotted Swirl Combustor for Application in Gas Turbine Engines
10. Central Research Grants, 2013 – 2016, HKD 100K
    Hypergolic Ignition Mechanism of a Novel "Green" Propellant for Aerospace Propulsion: A Density Functional Theory Study of DMAZ/HNO_3 System
11. Central Research Grants, 2012 – 2016, HKD 450K
    Dynamics of Unequal-size Droplet Collision

Funded Research Projects (in the capacity of co-principal investigator)

By the Hong Kong Research Grants Council (HKRGC)

1. Hong Kong RGC CRF, 2015 – 2018(approved in 2024), HKD 4,500K
   A Unique Multipurpose Transonic-to-Hypersonic Ludwig Tube Facility for Study of the High-Speed Aerodynamics

By the National Science Foundation of China (NSFC)

1. NSFC-General Program, 2014 – 2017(approved in Aug. 2013), RMB 900K
   Fragmentation, vaporization, and combustion of liquid fuels in high-speed flows

By Industries

1. Federation of Hong Kong Industries (FHKI), 2022-2022(approved in 2022), HKD 73.50K
   Soaring into Space: Exploring the Industrial Opportunities of the New Space Economy for Hong Kong (an industry consulting project)
2. China Space Foundation, 2023-2024(approved in 2023), RMB 150K
   Simulation and Assessment of Liquid-fueled Ramjet Ignition

By the Hong Kong Polytechnic University

1. Central Research Grant, 2015-2017, HKD 189K
   Thermal, Explosion, Burning, and Emission Characteristics of Premixed Flame Jets Array Burning Liquefied Petroleum Gas Enriched with Hydrogen
2. Central Research Grant, 2014-2016, HKD 150K
   Thermal, Explosion, Burning, and Emission Characteristics of an Array of Premixed Flame Jets Burning Liquefied Petroleum Gas Enriched with Hydrogen
3. Central Research Grant, 2014-2016, HKD 155K
   Biomimetic Study on the Reaction Chambers of Bombardier Beetles for Aeronautical Applications: Thermal Resistance and Pulsed Jet Propulsion

Journal Publications (under Review or to be submitted; Corresponding Author *)

1. F. Wang, N. Wang, J. Wang, H. Hu*, and **P. Zhang*,** *Unlikely Storyteller: Leveraging Narrative-Based Communication in LLM-Generated Medical Advice*, Nature Medicine (to be submitted).
2. F. Wang, N. Wang, J. Wang, H. Hu*, and **P. Zhang***, *Beyond Aesthetics: Navigating Communication in China's Cosmetic Oculoplastics*, Patient Education and Counseling (under review).
3. T. Yang and **P. Zhang***, *A Unified Model of Droplet Splashing on a Smooth Solid Surface under Variable Ambient Pressures*, Physical Review Fluids (to be submitted).
4. H. Wang, T. Yang, Z. Yang* and **P. Zhang***, *Symmetry Breaking Dynamics and Sturt-Laudau Modeling of Triplet Flame Oscillators*, Combustion and Flame (to be submitted).
5. X. Xia and **P. Zhang***, *Aerodynamic Breakup of a Flying Droplet in Crossflows*, Physical Review Fluids (to be submitted).
6. W. Xu, T. Yang, and **P. Zhang***, *Data-driven Learning of Probabilistic Model of Binary Droplet Collision for Spray Simulation*, Atomization and Sprays (under review).
7. W. Wang, Z. Hu*, and **P. Zhang***, *Transverse-jet-controlled Liquid-fueled Oblique Detonation Wave Engines*, Proceedings of Combustion Institute(under review).
8. W. Wang, Z. Hu*, and **P. Zhang***, *Pulsating Detonation Induced by Flash Boiling of Liquid Ammonia*, Proceedings of Combustion Institute(under review).
9. M. A. Abdel-Rahman, X. Zhang, **P. Zhang**, and Hao Zhao*, *Kinetic Studies of H (2S) + O_2 = OH + O Under the Supercritical Phase*, Proceedings of Combustion Institute(under review).
10. H. Wang, T. Yang, Y. Chi, Z. Zhang*, and **P. Zhang**, *Unveiling Hysteresis of Dynamical Modes in Triple-flame Systems*, Proceedings of Combustion Institute(under review).
11. C. Zhang, Z. Zhang*, **P. Zhang***, J. Zhou, and C. Zhao, *Dynamic Mechanism of Pre-combustion Collision of Fuel Droplets Under High Ambient Pressures*, Proceedings of Combustion Institute(under review).
12. J. Bai, D. Liu, L. Zhang, L. Zhou, and **P. Zhang***, *The Role of Ab Initio Chemical Kinetics of N_2H_2/NNH with NO_2 and OH in Modeling Hypergolic Ignition of Monomethylhydrazine/Hydrazine and Nitrogen Dioxide*, Proceedings of Combustion Institute(under review).
13. J. Bai*, **P. Zhang**, and L. Zhou, *Toward a Predictive Model for Iron Combustion: A First Theoretical Kinetics Study of Key Gas-phase Pathways from Fe to Fe_3O_4*, Proceedings of Combustion Institute(under review).

14. J. Bai*, **P. Zhang**, and L. Zhou, Refining Biofuel Combustion Models: A High-level Theoretical and Kinetic Modeling Study of Guaiacol, Proceedings of Combustion Institute(under review).
15. Z. Hu, H. Liu*, and **P. Zhang***, *Pursuit Race Between Burning Droplet and Flame Front in Ti Microwire Combustion*, Proceedings of Combustion Institute(under review).
16. H. Liu, Z. Hu, and **P. Zhang***, *Droplet Dynamics of Burning Twisted Ti/Fe Microwires*, Proceedings of Combustion Institute(under review).
17. W. Xu, T. Yang, L. Xu*, F. Qi, and **P. Zhang***, *Temporal Super-resolution in Latent-Manifold Space for Turbulent Swirl-Stabilized Flames Using Probabilistic Transformers*, Proceedings of Combustion Institute(under review).
18. C. Zhang, Z. Zhang*, **P. Zhang***, J. Zhou, and C. Zhao, *Dual Roles of Liquid Viscosity in Influencing Bouncing and Coalescence of Two Identical Droplet*s, Chemical Engineering Science (under review).
19. J. Wang, K. Sun*, T. Wang, and **P. Zhang***, *Rapid Rebound of Spinning Droplet from a Solid Surface*, Journal of Colloid and Interface Science (under review).

Journal Publications (Published or accepted; Corresponding Author *; Citation Source from Scopus)

2026

1. W. Xu, T. Yang, and **P. Zhang***, *Time-series Deep Learning for Dynamical Mode Identification in Complex Flow Systems: Application to Combustor-Inspired Circular Flame Arrays*, Nonlinear Dynamics (under review).

(IF: 6.0, Ranking: 28/665 = 5% in APPLIED MATHEMATICS, **A+** Journal, Non-self citation: 0)

2. W. Wang, Z. Hu*, and **P. Zhang***, *Liquid-fueled oblique detonation waves induced by a transverse liquid jet: computational realization and mechanism interpretation*, Aerospace Science and Technology 168 (2026) 111293.

(IF: 5.8, Ranking: 6/55 = 10.9% in ENGINEERING, AEROSPACE, **A** Journal, Non-self citation: 4)

3. Z. Hu, H. Liu*, and **P. Zhang***, *"Jumping Flame Propagation": Almost-periodic Combustion Dynamics of Iron Microwires*, Combustion and Flame 284 (2026) 114628.

(IF: 6.2, Ranking: 11/175 = 6.2% in ENGINEERING, MULTIDISCIPLINARY, **A+** Journal, Non-self citation: 0)

4. W. Xu, T. Yang, C. Liu, K. Wu*, and **P. Zhang***, *Transient Identification of Supersonic Combustion Mode by Dynamic-VAE and Markov Probabilistic Modeling*, Combustion and Flame 284 (2026) 114609.

(IF: 6.2, Ranking: 11/175 = 6.2% in ENGINEERING, MULTIDISCIPLINARY, **A+** Journal, Non-self citation: 0)

5. M. Wang, Y. Li*, S. Ruan, Z. Yang, and **P. Zhang***, *Impact of Nitrogen Substitution on Polycyclic Aromatic Hydrocarbon Growth in Ammonia-Hydrocarbon Blended Fuel Combustion*, Combustion and Flame 283 (2026) 114590.

(IF: 6.2, Ranking: 11/175 = 6.2% in ENGINEERING, MULTIDISCIPLINARY, **A+** Journal, Non-self citation: 0)

6. N. Wu, Z. Zhang*, **P. Zhang***, and C. Zhao, *Direct Numerical Simulation of Colliding Droplets with Intervening Nonequilibrium Gas Film*, Acta Mechanica Sinica, Vol. 42, 325492 (2026).

(IF: 3.9, Ranking: 12/91 = 13.2% in COMPUTATIONAL MECHANICS, **A** Journal, Non-self citation: 0)

7. C. Zhang, Z. Zhang*, **P. Zhang***, J. Zhou, and C. Zhao, *Flattening-off of droplet bouncing trend under high ambient gas pressures*, International Journal of Multiphase Flows 194 (2026) 105468.

(IF: 3.8, Ranking: 36/171 = 21.0% in MECHANICS, **A** Journal, Non-self citation: 0)

2025

8. J. He, T. Yang, Y. Chi*, **P. Zhang**, *Impacts of Tires on Aerodynamic Performance of a Formula Student Electric Vehicle: A High-resolution Three-dimensional Reynolds-Averaged-Navier-Stokes Study*, AIP Advances 15, 125012 (2025).

(IF: 1.4, Ranking: 126/246 = 51.2% PHYSICS AND ASTRONOMY, **B** Journal, Non-self citation: 0)

9. W. Xu, T. Yang, C. Liu, K. Wu*, and **P. Zhang***, *Stabilization Analysis and Mode Recognition of Kerosene Supersonic Combustion: A Deep Learning Approach Based on Res-CNN-β-VAE*, Proceedings of the Combustion Institute 41 (2025) 105976.

(IF: 5.2, Ranking: 27/182 = 14.8% in ENGINEERING, MECHANICAL, **A** Journal, Non-self citation: 0)

10. T. Yang, J. Niu, X. Zhu*, Y. Wei, G. Issayev, and **P. Zhang**, *Reconstruction of Heat Release Rate in One-dimensional Counterflow Flames*, Applications in Energy and Combustion Science 24 (2025) 100427.

(IF: 6.0, Ranking: 17/182 = 9.3% in ENGINEERING, MECHANICAL, **A+** Journal, Non-self citation: 0)

11. X. Xia*, J. Deng, T. Yang, L. Xu, A. Mardani, **P. Zhang**, and D. Zhao, *Single-snapshot-based Dynamical Mode Prediction of a Flickering Flame via a Fourier-neural-operator Network*, Applications in Energy and Combustion Science 24 (2025) 100380.

(IF: 6.0, Ranking: 17/182 = 9.3% in ENGINEERING, MECHANICAL, **A+** Journal, Non-self citation: 0)

12. C. He, **P. Zhang**, and C. K. Law*, *Dynamics of Binary Droplet Collisions*, Progress in Energy and Combustion Science 111 (2025) 101252.

(IF: 37.0, Ranking: 1/182 = 0.5% in ENGINEERING, MECHANICAL, **A+** Journal, Non-self citation: 0)

13. Y. Wang, S. Guo, Y. Guo, **P. Zhang**, G. Ma*, D. Xia*, H. Zhao*, *Operando Observing Hydrogen Evolution in Commercial Lithium-ion Batteries*, Energy and Environmental Science 2025, 18, 8756.

(IF: 30.8, Ranking: 2/374 = 0.5% in ENVIRONMENTAL SCIENCES, **A+** Journal, Non-self citation: 0)

14. W. Xu, and **P. Zhang***, *Steam turbine anomaly detection: an unsupervised learning approach using enhanced long short-term memory variational autoencoder*, Applied Thermal Engineering (2025):127138.

(IF: 6.9, Ranking: 9/182 = 4.9% in ENGINEERING, MECHANICAL, **A+** Journal, Non-self citation: 0)

15. Z. Hu, J. He, D. Xie, Y. Miao, **P. Zhang***, and C. Xu*, *Precise Intradermal Drug Delivery Mediated By Elastic Membrane In the Needle-free Injection*, ACS Applied Bio Materials, 2025, 8, 6, 5313-5320.

(IF: 4.7, Ranking: 22/55 = 40.0% in MATERIALS SCIENCE, BIOMATERIALS, **B+** Journal, Non-self citation: 0)

16. D. Liu, L. Zhang, and **P. Zhang***, *Ab Initio Chemical Kinetics Modeling of Liquid-phase Reactions of Monomethylhydrazine and Nitrogen Tetroxide*, Journal of Physical Chemistry A 129.18 (2025): 4148-4161.

(IF: 2.8, Ranking: 15/39 = 38.4% in PHYSICS, ATOMIC, MOLECULAR & CHEMICAL, **B+** Journal, Non-self citation: 0)

17. X. Xia, Y. Chi, and **P. Zhang***, *Scaling Law in the Inviscid Coalescence of Unequal-size Droplets,* Journal of Fluid Mechanics Rapids 1010 (2025): 353.

(IF: 3.9, Ranking: 5/41 = 12.1% in PHYSICS, FLUIDS & PLASMAS, **A** Journal, Non-self citation: 0)

18. N. Wang, Z. Zhang*, **P. Zhang***, and C. Zhao, *Towards Quantitative Prediction of Droplet Collision Outcomes: a dual-VOF approach with rarefied gas effect and augmented van der Waals force*, International Journal of Multiphase Flows 188 (2025): 105207.

(IF: 3.8, Ranking: 36/171 = 21.0% in MECHANICS, **A** Journal, Non-self citation: 0)

19. J. Wang, K. Sun*, T. Wang, and **P. Zhang***, *Computational Realization of Popping Impinging Sprays of Hypergolic Bipropellants by a Spray-equation Approach*, Energy 317 (2025): 134725.

(IF: 9.4, Ranking: 3/79 = 3.7% in THERMODYNAMICS, **A+** Journal, Non-self citation: 0)

20. T. Yang, Y. Ma, and **P. Zhang***, *Computational identification and Stuart-Landau modeling of collectivedynamical behaviors of octuple laminar diffusion flame oscillators*, Combustion and Flame 275 (2025): 114090.

(IF: 6.2, Ranking: 11/175 = 6.2% in ENGINEERING, MULTIDISCIPLINARY, **A+** Journal, Non-self citation: 0)

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(IF: 2.8, Ranking: 15/39 = 38.4% in PHYSICS, ATOMIC, MOLECULAR & CHEMICAL, **B+** Journal, Non-self citation: 12)

96. D. Zhang, C. He, **P. Zhang*** and C. Tang, *Mass Interminglement and Hypergolic Ignition of TMEDA and WFNA Droplets by Off-center Collision*, Combustion and Flame 197 (2018) 276-289.

(IF: 6.2, Ranking: 11/175 = 6.2% in ENGINEERING, MULTIDISCIPLINARY, **A+** Journal, Non-self citation: 4)

97. Q. Meng, X. Zhao, L. Zhang*, **P. Zhang***, and L. Sheng, *A theoretical kinetics study on low-temperature reactions of methyl acetate radicals with molecular oxygen.* Combustion and Flame, 196 (2018) 66-75.

(IF: 6.2, Ranking: 11/175 = 6.2% in ENGINEERING, MULTIDISCIPLINARY, **A+** Journal, Non-self citation: 11)

98. X. Zhu, X. Xia, and **P. Zhang***, *Near-field Flow Stability of Buoyant Methane/Air Inverse Diffusion Flames*. Combustion and Flame, 191 (2018) 66-75.

(IF: 6.2, Ranking: 11/175 = 6.2% in ENGINEERING, MULTIDISCIPLINARY, **A+** Journal, Non-self citation: 8)

99. D. Yu and **P. Zhang***, *Circulation-controlled firewhirl with differential diffusion.* Combustion and Flame, 189 (2018) 288–299.

(IF: 6.2, Ranking: 11/175 = 6.2% in ENGINEERING, MULTIDISCIPLINARY, **A+** Journal, Non-self citation: 3)

100. L. Yue*, Y. Jia, X. Xu, X. Zhang, and **P. Zhang**, *Effect of cowl shock on restart characteristics of simple ramp-type hypersonic inlets with thin boundary layers.* Aerospace Science and Technology, 74 (2018) 72-80.

(IF: 5.8, Ranking: 6/55 = 10.9% in ENGINEERING, AEROSPACE, **A** Journal, Non-self citation: 45)

101. K. Sun*, **P. Zhang**, Z. Che, and T. Wang, *Marangoni-flow-induced partial coalescence of a droplet on a liquid/air interface.* Physical Review Fluids 3, 023602 (2018).

(IF: 2.8, Ranking: 11/41 = 26.8% in PHYSICS, FLUIDS & PLASMAS, **B+** Journal, Non-self citation: 16)

102. K. Sun, **P. Zhang***, M. Jia, and T. Wang, *Collision-induced jet-like mixing for droplets of unequal sizes.* International Journal of Heat and Mass Transfer, 120 (2018) 218-227.

(IF: 5.8, Ranking: 14/171 = 8.1% in MECHANICS, **A+** Journal, Non-self citation: 13)

2017

103. X. Xia, C. He, J. Zhao, D. Yu, and **P. Zhang***, *Vortex-Ring-Induced Internal Mixing Upon the Coalescence of Initially Stationary Droplets.* Physical Review Fluids, 2, 113607 (2017).

(IF: 2.8, Ranking: 11/41 = 26.8% in PHYSICS, FLUIDS & PLASMAS, **B+** Journal, Non-self citation: 10)

104. Z. Zhang and **P. Zhang***, *Kinetic Energy Recovery and Interface Hysteresis of Bouncing Droplets after Inelastic Head-on Collision*, Physics of Fluids, 29, 103306 (2017).

(IF: 4.3, Ranking: 3/41 = 7.3% in PHYSICS, FLUIDS & PLASMAS, **A+** Journal, Non-self citation: 21)

105. K. Wu, **P. Zhang***, W. Yao, and X. Fan, *Numerical Investigation on Flame Stabilization in DLR Hydrogen Supersonic Combustor with Strut Injection.* Combustion Science and Technology, 2017. 189(12): p. 2154-2179.

(IF: 1.5, Ranking: 85/175 = 48.5% in ENGINEERING, MULTIDISCIPLINARY, **B** Journal, Non-self citation: 44)

106. Z. Zhang, **P. Zhang***, and Z. Zhao, *Spray Impingement and Combustion in a Model Opposed-Piston Compression Ignition Engine.* Combustion Science and Technology, 2017. 189(11): p.1943-1965.

(IF: 1.5, Ranking: 85/175 = 48.5% in ENGINEERING, MULTIDISCIPLINARY, **B** Journal, Non-self citation: 12)

107. C. Tang*, M. Qin, M. Weng, X. Zhang, **P. Zhang**, J. Li, and Z. Huang, *Dynamics of droplet impact on solid surface with different roughness*. International Journal of Multiphase Flows, 2017. 96: p. 56–69.

(IF: 3.8, Ranking: 36/171 = 21.0% in MECHANICS, **A** Journal, Non-self citation: 229)

108. D. Yu and **P. Zhang***, *On the flame height of circulation-controlled firewhirl with variable density and in power-law vortices: a mass-diffusivity-ratio model correction.* Combustion and Flame, 2017. 182: p. 36–47.

(IF: 6.2, Ranking: 11/175 = 6.2% in ENGINEERING, MULTIDISCIPLINARY, **A+** Journal, Non-self citation: 3)

109. D. Yu and **P. Zhang***, *On the flame height of circulation-controlled firewhirls with variable density.* Proceedings of the Combustion Institute, 2017. 36(2): p. 3097-3104.

(IF: 5.2, Ranking: 27/182 = 14.8% in ENGINEERING, MECHANICAL, **A** Journal, Non-self citation: 6)

110. Y. Yuan, T. Zhang, W. Yao, X. Fan*, and **P. Zhang**, *Characterization of flame stabilization modes in an ethylene-fueled supersonic combustor using time-resolved CH* chemiluminescence.* Proceedings of the Combustion Institute, 2017. **36**(2): p. 2919-2925.

(IF: 5.2, Ranking: 27/182 = 14.8% in ENGINEERING, MECHANICAL, **A** Journal, Non-self citation: 57)

111. L. Shi, H. Shen, **P. Zhang**, D. Zhang, and C. Wen*, *Assessment of vibrational non-equilibrium effect on detonation cell size.* Combustion Science and Technology, 2017. 189(5): p. 841-853.

(IF: 1.5, Ranking: 85/175 = 48.5% in ENGINEERING, MULTIDISCIPLINARY, **B** Journal, Non-self citation: 49)

2016

112. C.L. Tang, J.Q. Zhao, **P. Zhang***, C.K. Law*, and Z.H. Huang, *Dynamics of internal jets in the merging of two droplets of unequal sizes.* Journal of Fluid Mechanics, 2016. 795: p. 671-689.

(IF: 3.9, Ranking: 5/41 = 12.1% in PHYSICS, FLUIDS & PLASMAS, **A** Journal, Non-self citation: 21)

113. Z. Zhang, Y. Chi, L. Shang, **P. Zhang***, and Z. Zhao, *On the role of droplet bouncing in modeling impinging sprays under elevated pressures.* International Journal of Heat and Mass Transfer, 2016. 102: p. 657-668.

(IF: 5.8, Ranking: 14/171 = 8.1% in MECHANICS, **A+** Journal, Non-self citation: 26)

114. D. Zhang, **P. Zhang***, Y. Yuan, and T. Zhang, *Hypergolic Ignition by Head-on Collision of N,N,N',N'-tetramethylethylenediamine and White Fuming Nitric Acid Droplets.* Combustion and Flame, 2016. 173: p. 276-287.

(IF: 6.2, Ranking: 11/175 = 6.2% in ENGINEERING, MULTIDISCIPLINARY, **A+** Journal, Non-self citation: 27)

2015

115. K. Sun, **P. Zhang***, C.K. Law*, and T.Y. Wang, *Collision Dynamics and Internal Mixing of Droplets of Non-Newtonian Liquids.* Physical Review Applied, 2015. 4(5).

(IF: 4.4, Ranking: 56/187 = 29.9% in PHYSICS, APPLIED, **B+** Journal, Non-self citation: 28)

116. K. Sun, T.Y. Wang, **P. Zhang***, and C.K. Law, *Non-Newtonian flow effects on the coalescence and mixing of initially stationary droplets of shear-thinning fluids.* Physical Review E, 2015. 91(2).

(IF: 2.4, Ranking: 13/61 = 21.3% in PHYSICS, MATHEMATICAL, **A** Journal, Non-self citation: 11)

117. **P. Zhang***, L.D. Zhang, and C.K. Law, *Density functional theory study of the reactions of 2-azido-N,N-dimethylethanamine with nitric acid and nitrogen dioxide.* Combustion and Flame, 2015. 162(1): p. 237-248.

(IF: 6.2, Ranking: 11/175 = 6.2% in ENGINEERING, MULTIDISCIPLINARY, **A+** Journal, Non-self citation: 11)

118. X.R. Zhu, R.F. Li*, D.G. Li*, **P. Zhang***, and R.Z. Qian, *Experimental study and RANS calculation on velocity and temperature of a kerosene-fueled swirl laboratory combustor with and without centerbody air injection.* International Journal of Heat and Mass Transfer, 2015. 89: p. 964-976.

(IF: 5.8, Ranking: 14/171 = 8.1% in MECHANICS, **A+** Journal, Non-self citation: 19)

119. Y.C. Li, R.F. Li*, D.G. Li*, J.Y. Bao, and **P. Zhang***, *Combustion characteristics of a slotted swirl combustor: An experimental test and numerical validation.* International Communications in Heat and Mass Transfer, 2015. 66: p. 140-147.

(IF: 6.4, Ranking: 11/171 = 6.4% in MECHANICS, **A+** Journal, Non-self citation: 29)

120. L.D. Zhang and **P. Zhang***, *Towards high-level theoretical studies of large biodiesel molecules: an ONIOM [QCISD(T)/CBS:DFT] study of hydrogen abstraction reactions of $C_nH_{2n+1}COOC_mH_{2m+1}$ + H.* Physical Chemistry Chemical Physics, 2015. 17(1): p. 200-208.

(IF: 2.9, Ranking: 13/39 = 33.3% in PHYSICS, ATOMIC, MOLECULAR & CHEMICAL, **B+** Journal, Non-self citation: 15)

121. L.D. Zhang, Q.X. Chen, and **P. Zhang***, *A theoretical kinetics study of the reactions of methylbutanoate with hydrogen and hydroxyl radicals.* Proceedings of the Combustion Institute, 2015. 35: p. 481-489.

(IF: 5.2, Ranking: 27/182 = 14.8% in ENGINEERING, MECHANICAL, **A** Journal, Non-self citation: 39)

2014

122. **P. Zhang***, S.J. Klippenstein*, L.B. Harding, H.Y. Sun, and C.K. Law, *Secondary channels in the thermal decomposition of monomethylhydrazine (CH_3NHNH_2).* RSC Advances, 2014. 4(108): p. 62951-62964.

(IF: 4.6, Ranking: 75/239 = 31.3% in CHEMISTRY, MULTIDISCIPLINARY, **B+** Journal, Non-self citation: 5)

123. T.C. Zhang, J. Wang, X.J. Fan*, and **P. Zhang**, *Combustion of Vaporized Kerosene in Supersonic Model Combustors with Dislocated Dual Cavities.* Journal of Propulsion and Power, 2014. 30(5): p. 1152-1160.

(IF: 2.4, Ranking: 15/55 = 27.2% in ENGINEERING, AEROSPACE, **B+** Journal, Non-self citation: 16)

124. T.C. Zhang, J. Wang, L. Qi, X. Fan*, and **P. Zhang**, *Blowout Limits of Cavity-Stabilized Flame of Supercritical Kerosene in Supersonic Combustors.* Journal of Propulsion and Power, 2014. 30(5): p. 1161-1166.

(IF: 2.4, Ranking: 15/55 = 27.2% in ENGINEERING, AEROSPACE, **B+** Journal, Non-self citation: 27)

2013

125. **P. Zhang**, S.J. Klippenstein*, and C.K. Law, *Ab Initio Kinetics for the Decomposition of Hydroxybutyl and Butoxy Radicals of n-Butanol.* Journal of Physical Chemistry A, 2013. 117(9): p. 1890-1906.

(IF: 2.8, Ranking: 15/39 = 38.4% in PHYSICS, ATOMIC, MOLECULAR & CHEMICAL, **B+** Journal, Non-self citation: 63)

126. D. Liu, **P. Zhang***, C.K. Law, and Y.C. Guo, *Collision dynamics and mixing of unequal-size droplets.* International Journal of Heat and Mass Transfer, 2013. 57(1): p. 421-428.

(IF: 5.8, Ranking: 14/171 = 8.1% in MECHANICS, **A+** Journal, Non-self citation: 31)

Before 2013

127. H.Y. Sun, **P. Zhang**, and C.K. Law*, *Ab Initio Kinetics for Thermal Decomposition of $CH_3N{\cdot}NH_2$, cis-$CH_3NHN{\cdot}H$, trans-$CH_3NHN{\cdot}H$, and $C{\cdot}H_2NNH_2$ Radicals.* Journal of Physical Chemistry A, 2012. 116(33): p. 8419-8430.

(IF: 2.8, Ranking: 15/39 = 38.4% in PHYSICS, ATOMIC, MOLECULAR & CHEMICAL, **B+** Journal, Non-self citation: 10)

128. H.Y. Sun, **P. Zhang**, and C.K. Law*, *Gas-Phase Kinetics Study of Reaction of OH Radical with CH_3NHNH_2 by Second-Order Multireference Perturbation Theory.* Journal of Physical Chemistry A, 2012. 116(21): p. 5045-5056.

(IF: 2.8, Ranking: 15/39 = 38.4% in PHYSICS, ATOMIC, MOLECULAR & CHEMICAL, **B+** Journal, Non-self citation: 9)

129. S.W. Yoo, S. Chaudhuri, K.R. Sacksteder, **P. Zhang**, D.L. Zhu, and C.K. Law*, *Response of spherical diffusion flames subjected to rotation: Microgravity experimentation and computational simulation.* Combustion and Flame, 2012. 15**9**(2): p. 665-672.

(IF: 6.2, Ranking: 11/175 = 6.2% in ENGINEERING, MULTIDISCIPLINARY, **A+** Journal, Non-self citation: 0)

130. C. Tang, **P. Zhang**, and C.K. Law*, *Bouncing, coalescence, and separation in head-on collision of unequal-size droplets.* Physics of Fluids, 2012. 24(2).

(IF: 4.3, Ranking: 3/41 = 7.3% in PHYSICS, FLUIDS & PLASMAS, **A+** Journal, Non-self citation: 118)

131. **P. Zhang** and C.K. Law*, *An analysis of head-on droplet collision with large deformation in gaseous medium.* Physics of Fluids, 2011. 23(4).

(IF: 4.3, Ranking: 3/41 = 7.3% in PHYSICS, FLUIDS & PLASMAS, **A+** Journal, Non-self citation: 75)

132. **P. Zhang** and C.K. Law*, *A Fitting Formula for the Falloff Curves of Unimolecular Reactions, II: Tunneling Effects.* International Journal of Chemical Kinetics, 2011. 43(1): p. 31-42.

(IF: 1.6, Ranking: 163/185 = 88.1% in CHEMISTRY, PHYSICAL, **D** Journal, Non-self citation: 6)

133. **P. Zhang**, S.J. Klippenstein, H.Y. Sun, and C.K. Law*, *Ab initio kinetics for the decomposition of monomethylhydrazine (CH_3NHNH_2).* Proceedings of the Combustion Institute, 2011. 33: p. 425-432.

(IF: 5.2, Ranking: 27/182 = 14.8% in ENGINEERING, MECHANICAL, **A** Journal, Non-self citation: 22)

134. **P. Zhang** and C.K. Law*, *Rarefied flow effects on stabilization and extinction of rotating-disk flame at low pressures.* International Journal of Heat and Mass Transfer, 2010. 53(1-3): p. 475-481.

(IF: 5.8, Ranking: 14/171 = 8.1% in MECHANICS, **A+** Journal, Non-self citation: 0)

135. T.C. Zhang, **P. Zhang**, C.K. Law*, and F. Qi, *CVD in Weakly Rarefied Rotating Disk Flows.* Chemical Vapor Deposition, 2009. 15(10-12): p. 274-280.

(IF: N.A., , Non-self citation: 3)

136. **P. Zhang** and C.K. Law*, *A Fitting Formula for the Falloff Curves of Unimolecular Reactions.* International Journal of Chemical Kinetics, 2009. 41(11): p. 727-734.

(IF: 1.6, Ranking: 163/185 = 88.1% in CHEMISTRY, PHYSICAL, **D** Journal, Non-self citation: 9)

137. **P. Zhang** and C.K. Law*, *Role of the Knudsen layer in determining surface reaction rates based on sticking coefficients.* Journal of Fluid Mechanics, 2009. 634: p. 113-135.

(IF: 3.9, Ranking: 5/41 = 12.1% in PHYSICS, FLUIDS & PLASMAS, **A** Journal, Non-self citation: 2)

Journal Publications (in Chinese, Corresponding Author *)

137. R. Shan, J. Niu, Y. Zhang, and **P. Zhang***, *Hydrazine-based Fuels and Nitrogen Tetroxide Propellant Combustion Reaction Kinetics Mechanism Research Progress*, Propulsion Technology (in press).

138. N. Wang, Z. Zhang*, and **P. Zhang**, *Numerical Method for Predicting Binary Droplet Collision Outcomes with Rarefied Gas Effects and van der Waals Forces*, Journal of Engineering Thermophysics (in press).

139. Z. Zhang, C. Zhang*, and **P. Zhang**, *Numerical Simulation of Droplet Impacting on Free Slip Wall under Small Weber Number*, Journal of Engineering Thermophysics, Vol. 42, No. 12, 2021, p. 3296-3303.

140. Q. Wu, Y. Li*, N. Kang, and **P. Zhang**, *Secondary Breakup Analysis of Spherical Oil Droplets Under Time-Dependent Inertial Force*, Neiranji Xuebao/Transactions of CSICE, 2019, 37(6).

141. Y. Chi and **P. Zhang***, *High-level Theoretical Thermochemistry Study Review on Large Gaseous Fuel Molecules*. Physics of Gases, 2019, 4(5):32-42. (**invited review paper**).

142. C. He and **P. Zhang***, *Binary Droplet Collision in Gaseous Environment.* SCIENCE CHINA Physics, Mechanics & Astronomy, 2017. 47(7): 070013. (**invited review paper**).

143. **P. Zhang*** and G. Yu, *Rayleigh-Taylor instability of a liquid drop at high Bond numbers.* Chinese Journal of Theoretical and Applied Mechanics, 2006. 38(3): p. 1-7.

144. **P. Zhang** and G. Yu, *Study of one-dimensional flow analysis model of the combustor in supersonic combustion experiments.* Experiments and Measurements in Fluid Mechanics 2003. 17(1): p. 88-92.

145. Y. Zhang, M. Zhang, S. Xu*, and **P. Zhang**, *Numerical investigation on blast wave propagation and dynamic response of an explosion vessel.* Explosion and Shock Waves, 2003. 23(4): p. 331-336.

146. P. Yue, S. Xu*, and **P. Zhang**, *Numerical study on a moving shock diffracted over the cylinder/square column in hydrogen-air mixture.* Chinese Journal of Computational Physics, 2001. 18(1): p. 10-16.

Patent (in China)

1. R. Li, **P. Zhang**, R. Qian, J. Bao, X. Zhu, L. Ma, and B. Li, *An Axial Swirler with Center Flow Injectors*. Chinese Patent number: ZL 2013 2 0727294.9, 2013: P. R. China.

Invited Departmental/School Seminars

1. *Dimension Reduction and Pattern Recognition of Complex Combustion Systems*, Beijing Institute of Technology (Zhuhai), November 21, 2025.
2. *Dynamics of Droplet-Droplet Collision - Advancing Predictive Spray Combustion Models for a Net-Zero Future*, Institute of Advanced Studies at Loughborough University, June 27, 2025.
3. *AI for Combustion: From Candle Flames to Scramjet Engines*, University of Michigan–Shanghai Jiao Tong University Joint Institute, June 13, 2025.
4. *Deep Learning in Digital Medicine: An Automatic Assessment System for Identifying and Managing Challenging Patients*, Institute of Digital Medicine at CityUHK, February 20, 2025.
5. *Dimension Reduction and Mode Recognition for Time-series Data of Complex Combustion Systems*, Harbin Institute of Technology, Shenzhen, December 11, 2024.
6. *Deep Learning for Time-series Data of Complex Systems: Dimension Reduction, Mode Recognition, and Anomaly Detection*, Department of Mechanical Engineering, National University of Singapore, Singapore, July 02, 2024.
7. *Eulerian-Lagrangian Simulation of Spray Combustion in Detonation and Rocket Engine*, School of Mechanical Engineering, Shanghai Jiao Tong University, Shanghai, China, April 24, 2024.
8. *Towards Quantitatively Predictive Two-phase Combustion Simulation*, Shanghai Institute of Space Propulsion, Shanghai, China, April 23, 2024.
9. *Towards Quantitatively Predictive Multiphase Combustion Simulation*, Foshan Xianhu Laboratory, Guangdong, China, April 10, 2024.
10. *Collective Behaviors of Flickering Buoyant Diffusion Flames*, Applied Physics and Computational Mathematics, Beijing, China, November 9, 2023.
11. *Reduced-order Modelling of Complex Nonlinear Dynamical Systems*, Applied Physics and Computational Mathematics, Beijing, China, November 9, 2023.
12. *Eulerian-Lagrangian Simulation of Dual-Fuel Spray Impingement and Combustion*, School of Mechanical Engineering, Applied Physics and Computational Mathematics, Beijing, China, November 7, 2023.
13. *Eulerian-Lagrangian Simulation of Dual-Fuel Spray Impingement and Combustion*, School of Mechanical Engineering, Beijing Institute of Technology, Beijing, China, August 21, 2023.
14. *Problems in Calculating Partition Functions by MS-T Methods*, School of Energy and Power Engineering, Xi'an Jiao Tong University, Xi'an, China, July 26, 2023.

15. *Droplet Collision of Hypergolic Propellants*, AIAA TN Section Monthly Seminar, Department of Mechanical, Aerospace and Biomedical Engineering, UTSI, November 30, 2022 (online).
16. *Flickering Buoyant Diffusion Flames in Weakly Rotatory Flows*, Institute for Energy Research, Jiangsu University, Zhenjiang, China, November 10, 2022 (online).
17. *Vortex Dynamics of Flickering Buoyant Diffusion Flames*, School of Energy and Power Engineering, Xi'an Jiao Tong University, Xi'an, China, December 23, 2021 (online).
18. *Non-axisymmetric flow characteristics in Head-on Collision of Spinning Droplets*, State Key Laboratory of Engines, Tianjin University, Tianjin, China, October 31, 2020 (online).
19. *Vortex Dynamics in Droplet Coalescence and Mixing*, Institute of Applied Physics & Computational Mathematics, Beijing, China, August 19, 2019.
20. *Multi-scale and Multi-physics Simulation and Modelling of Binary Droplet Collision in Gaseous Environment*, Institute of Applied Physics & Computational Mathematics, Beijing, China, August 19, 2019.
21. *Towards Quantitatively Predictive Multiphase Combustion Simulation: Studies on Droplet Dynamics and Chemical Kinetics*, Xi'an Aerospace Propulsion Institute, Xi'an, China, September 25, 2019.
22. *Vortex Dynamics in Droplet Coalescence and Mixing*, Xi'an Jiao Tong University, Xi'an, China, December 26, 2019.
23. *Towards Quantitatively Predictive Multiphase Combustion Simulation: Studies on Droplet Dynamics and Chemical Kinetics*, Xi'an Jiao Tong University, Xi'an, China, November 29, 2019.
24. *On the Roles of Liquid Viscosity in Droplet Spreading on a Smooth Solid Surface*, Shanghai Jiao Tong University, Shanghai, China, 19 December 2019.
25. *Collision Dynamics of Binary Liquid Droplets in Gaseous Environment*, School of Energy and Power Engineering, Dalian University of Technology, Dalian, China, May 19, 2017.
26. *Theory of Circulation-controlled Firewhirl*, Center for Combustion Energy, Tsinghua University, Beijing, China, April 20, 2017.
27. *Binary Droplet Collision in Gaseous Environment: Theory, Simulation and Applications*, Physical Science and Engineering Division, King Abdullah University of Science and Technology, Saudi Arabia, 5 December 2016.
28. *Quantum Chemistry and Chemical Kinetics for Hydrogen Abstraction Reactions of Large Straight-Chain Alkanes in Aviation Kerosene*, Institute of Mechanics, Chinese Academy of Sciences, Beijing, China, August 10, 2016.

29. *Problems on Droplet Collision and Chemical Kinetics for Application in Gelled Hypergolic Propellants*, Chinese Academy of Engineering Physics, Beijing, China, July 6, 2015.
30. *Collision Dynamics and Internal Mixing of Droplets of Non-Newtonian Fluids*, College of Engineering, Peking University, Beijing, China, July 2, 2015.
31. *Dynamics of Binary Droplet Collision: Multiscale and Multiphysics Modeling*, Department of Mathematics, City University of Hong Kong, Hong Kong, April 30, 2014.
32. *Studies on Fluid Mechanics and Chemical Kinetics for Application in Gelled Hypergolic Propellants*, Department of Aerospace Engineering, Huazhong University of Science and Technology, Wuhan, China, April 28, 2013.
33. *Studies on Fluid Mechanics and Chemical Kinetics for Application in Gelled Hypergolic Propellants*, Laboratory of Explosion Science and Technology, Beijing Institute of Technology, Beijing, China, January 25, 2013.
34. *Studies on Fluid Mechanics and Chemical Kinetics for Application in Gelled Hypergolic Propellants*, Institute of Mechanics, Chinese Academy of Sciences, Beijing, China, January 24, 2013.
35. *Studies on Fluid Mechanics and Chemical Kinetics for Application in Gelled Hypergolic Propellants*, School of Jet Propulsion, Beihang University, Beijing, China, March 10, 2012.
36. *Bouncing, coalescence, and separation in head-on collision of unequal-size droplets*, Cornell Fluid Dynamics Seminars, Sibley School of Mechanical and Aerospace Engineering, Cornell University, Ithaca, NY, USA, February 14, 2012.
37. *Weakly Rarefied Flows with Surface Reactions*, Center for Combustion Energy, Tsinghua University, Beijing, China, December 22, 2011.
38. *Dynamics of Binary Droplet Collision*, INM 2011 Annual Meeting, Institute of Mechanics, Chinese Academy of Sciences, Beijing, China, December 17, 2011.
39. *Studies on Fluid Mechanics and Chemical Kinetics for Application in Gelled Hypergolic Propellants*, Department of Thermal Engineering, Tsinghua University, Beijing, China, December 2, 2011.
40. *Studies on fluid mechanics and chemical kinetics for application in biofuel combustion*, Department of Mechanical Engineering, the Hong Kong Polytechnic University, Hong Kong, November 23, 2011.
41. Studies on fluid mechanics and chemical kinetics for application in gelled hypergolic propellants, Department of Aerospace Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, USA, April 14, 2011.

42. *Problems in droplet collision and rarefied flows*, Cornell Fluid Dynamics Seminars, Sibley School of Mechanical and Aerospace Engineering, Cornell University, Ithaca, NY, USA, October 26, 2010.

43. *Theory of head-on droplet collision: bouncing, coalescence and interface evolution*, Fluid Dynamics Seminar, Department of Mathematical Sciences, New Jersey Institute of Technology, Newark, NJ, USA, February 11, 2008.

Invited Conference Plenary Talks

1. *Reduced Order Modeling and Dynamical Mode Recognition of Complex Combustion Systems*, International Symposium on AI for Fluid Mechanics, Hong Kong, December 1, 2025.
2. *Multiscale Modelling of Droplet Breakup in Eulerian-Lagrangian Spray Combustion Simulations*, The 25th Annual Conference on Atomization and Spray System-Asia, Tainan, Taiwan, October 28, 2025.
3. *Deep Learning for Time-series Data of Complex Combustion System*s, The 11th International Conference on Mechanical Engineering and Aerospace Engineering (MEAE 2025), Beijing, China, October 19, 2025.
4. *Deep Learning for Time-series Data of Complex Combustion System*s, The 1st International Symposium on Non-equilibrium Transport Phenomena, Beijing, China, April 9, 2025.
5. *Mode Recognition for Time-series Data of Complex Combustion Systems*, The 13th Engine Researchers Forum, Guilin, China, January 11, 2025.
6. *Deep Learning for Time-Series Data of Complex Systems: Dimension Reduction, Mode Recognition, and Anomaly Detection*, 2024 Silk Road International Symposium on The Cooperation and Integration of Industry, Education, Research and Application of Energy and Chemicals (SRISEC 2024), Xi'an, China, November 30, 2024.
7. *Droplet-droplet collision of hypergolic propellants*, The 4th Conference on Micro Flow and Interfacial Phenomena (μFIP), Hong Kong, China, June 20, 2024.
8. *Torsional PES Reconstruction and Metric-Based Assessment for Calculating Partition Functions by the MS-T Methods*, 12th International Conference on Chemical Kinetics, Hefei, China, June 29, 2023.
9. *Collective Behaviours of Flickering Buoyant Diffusion Flames*, OpenFOAM & Combustion Simulation Webinar, April 20, 2023.
10. *Thermochemistry and Chemical Kinetics of "Green" Fuel*, 2022 Silk Road International Symposium on The Cooperation and Integration of Industry, Education, Research and Application of Energy Chemicals, Xi'an, China, November 5, 2022.
11. *Vortex Dynamics of Multiple Flickering Buoyant Diffusion Flames*, TUM-PolyU Joint Virtual Workshop, Hong Kong, November 8, 2021.
12. *Multi-scale Physics of Binary Droplet Collision in Gaseous Environment*, 2019 China National Symposium on Combustion, Tianjin, China, October 26, 2019.

13. *Towards Quantitatively Predictive Reaction Mechanisms of Hypergolic Propellants*, Hypergolic Liquid Rocket Engine and Spray Combustion Workshop, Northwestern Polytechnic University, Xi'an, China, January 18-21, 2018.
14. *Hypergolic Ignition by Droplet Collision of N,N,N',N'-tetramethylethylenediamine and White Fuming Nitric Acid Droplets*, State Key Laboratory of High-temperature Gas Dynamics Summer Workshop, Chinese Academy of Sciences, Beijing, China, August 17, 2017.
15. *Towards High-level Theoretical Chemical Kinetics of Large-molecule Fuel Combustion*, The Chinese Congress of Theoretical and Applied Mechanics (CCTAM 2017), Beijing, China, August 13-16, 2017.
16. *Collision Dynamics of Binary Liquid Droplets in Gaseous Environment*, Workshop on Vehicular Power System and Control, Beijing Institute of Technology, Beijing, China, December 11-13, 2016.
17. *On Pressure-dependent Unimolecular Reaction Rate Constants: Time-dependent Multiple-Well Master Equation and Its Solutions*, the 2nd National Young Scholar Meeting on Combustion Research, Hefei, China, April 09-10, 2016.
18. *Hypergolic Ignition by Head-on Collision of N,N,N',N'-tetramethylethylenediamine and White Fuming Nitric Acid Droplets*, the 6th East Asia Mechanical and Aerospace Engineering Workshop, Taiwan, June 2-4, 2016.
19. *Multi-scale and multi-physics modeling of binary droplet collision*, 2014 National Multiscale Mechanics Workshop, Zhejiang University, Hangzhou, China, April 18, 2014.
20. *Ab initio kinetics for the decomposition of hydroxybutyl and butoxy radicals of n-butanol*, The International Workshop on Frontiers of Combustion Chemistry, Yellow Mountain, Anhui, China, September 27, 2013.
21. *Ab initio kinetics for the decomposition of α-hydroxybutyl radical of n-butanol*, The 13th National Conference on Chemical Kinetics and Reaction Dynamics. Wuhu, Anhui, China, 2013.

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1. T. Yang, W. Xu, L. Xu, and **P. Zhang***. Time-series Learning-based Identification of Dynamical Flames Modes in Turbulent Annular Swirl Combustor, the 15th Asia-Pacific Conference on Combustion, Singapore, May 18- 22, 2025.
2. Wang, Z. Hu, and **P.Zhang***. Liquid-fueled oblique detonation waves induced by a transverse liquid jet: computational realization and mechanism interpretation, the 15th Asia-Pacific Conference on Combustion, Singapore, May 18- 22, 2025.
3. W. Xu, T. Yang, C. Liu, K.Wu, and **P. Zhang***. Stabilization analysis and mode recognition of kerosene supersonic combustion: a deep learning approach based on Res-CNN-β-VAE, the 15th Asia-Pacific Conference on Combustion, Singapore, May 18-22, 2025.
4. W. Wang, Z. Hu, and **P. Zhang***. Effects of Droplet Breakup and On-wedge Trips on the Stability of Liquid-Fueled Oblique Detonation Wave, the 12th Asian Joint Conference on Propulsion and Power, Xian, China, March 19-21, 2025.
5. W. Xu, T. Yang, C. Liu, K.Wu, and **P. Zhang***. Deep Learning-Driven Flame Mode Recognition in Supersonic Combustion: A Novel ResNet-CNN- β -VAE Framework, the 12th Asian Joint Conference on Propulsion and Power, Xian, China, March 19-21, 2025.
6. T. Yang, W. Xu, L. Xu, and **P. Zhang***. Time-series Learning-based Identification of Dynamical Flames Modes in Turbulent Annular Swirl Combustor, the 12th Asian Joint Conference on Propulsion and Power, Xian, China, March 19-21, 2025.
7. J. Wang, H. Ding, K. Sun, T. Wang, and **P. Zhang***. Computational Revelation of Popping Phenomena in Hypergolic Bipropellant Impingement Combustion by a Eulerian-Lagrangian Approach, the 12th Asian Joint Conference on Propulsion and Power, Xian, China, March 19-21, 2025.
8. J. Bai, D. Liu, S. Ruan, and **P. Zhang***. Gas-Phase and Liquid-Phase Kinetic Modeling of MMH/NTO Hypergolic Combustion: Phase-Specific Mechanism Construction via Quantum Chemical Computations, the 12th Asian Joint Conference on Propulsion and Power, Xian, China, March 19-21, 2025.
9. W. Xu, T. Yang, C. Liu, K. Wu, and **P. Zhang***. Stabilization Analysis and Mode Recognition of Kerosene Supersonic Combustion: A Deep Learning Approach Based on Res-CNN-β-VAE, the 16th International Conference on Combustion and Energy Utilization, Hong Kong, February 09-13, 2025.

10. W. Wang, Z. Hu, and **P. Zhang***. Computational investigation of jet-induced liquid-fueled oblique detonation waves, the 16th International Conference on Combustion and Energy Utilization, Hong Kong, February 09-13, 2025.
11. D. Liu, L. Zhang, and **P. Zhang***. Exploring the initial hypergolic reaction mechanism for liquid monomethylhydrazine/nitrogen tetroxide mixtures, the 16th International Conference on Combustion and Energy Utilization, Hong Kong, February 09-13, 2025.
12. T. Yang, W. Xu, L. Xu, and **P. Zhang***. Dynamical Mode Recognition of Turbulent Flames in a Swirl-stabilized Annular Combustor by a Time-series Learning Approach, the 16th International Conference on Combustion and Energy Utilization, Hong Kong, February 09-13, 2025.
13. T. Yang and **P. Zhang***. Collective Dynamics of Laminar Diffusion Flames in Circular Arrays: Computational Identification and Stuart-Landau Modeling, the 16th International Conference on Combustion and Energy Utilization, Hong Kong, February 09-13, 2025.
14. W. Wang, M. Yang, Z. Hu, and **P. Zhang***, An extended KH-RT relaxation-breakup model for Eulerian-Lagrangian simulation of two-phase detonation, the 16th International Conference on Liquid Atomization and Spray Systems, Shanghai, China, June 23-27, 2024.
15. W. Wang, Z. Hu and **P. Zhang***, Eulerian-Lagrangian Simulation of Liquid-fueled Oblique Detonation on OpenFoam, the 16th International Conference on Liquid Atomization and Spray Systems, Shanghai, China, June 23-27, 2024.
16. J. Wang, K. Sun, T. Wang, and **P. Zhang***, *Computational Realization of Popping Impinging Sprays of Hypergolic Bipropellants by a Spray-equation Approach*, the 16th International Conference on Liquid Atomization and Spray Systems, Shanghai, China, June 23-27, 2024.
17. T. Yang and **P. Zhang***, *A New Scaling Law of Splashing Threshold for Droplets Impacting on a Smooth Solid Surface*, the 16th International Conference on Liquid Atomization and Spray Systems, Shanghai, China, June 23-27, 2024.
18. T. Yang, Y. Ma, and **P. Zhang***, *Numerical Investigation on the Dynamical Behaviours of Flickering Buoyant Diffusion Flames in Externally Rotating Flows*, the Global Power and Propulsion Technical Conference, Hong Kong, 17-19 October 2023.
19. T. Yang, Y. Ma, and **P. Zhang***, *Dynamical Behaviors of Small-scale Flickering Buoyant Diffusion Flames in Externally Swirling Flows*, the 15th International Conference on Combustion and Energy Utilization, Beijing, China, 17-20 August 2023.
20. Y. Chi, T. Yang, and **P. Zhang***, *Regime Nomogram of Dynamic Modes in Triple Flickering Flames*, the 15th International Conference on Combustion and Energy Utilization, Beijing, China, 8-12 August 2023.

21. C. He, W. Luo, **P. Zhang**, Z. He, and L. Yue, *Spray Combustion of Gas-liquid Pintel Injector with Variable Swirl Conditions*, the 17th Asican Congress of Fluid Mechanics (ACFM), Beijing, China, 17-20 August 2023.
22. T. Yang and **P. Zhang***, *Flickering buoyant diffusion flames in rotatory flows*, the 14th Asia-Pacific Conference on Combustion, Kaohsiung, China, 14-18 May 2023.
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25. C. He, Y. Chi, and **P. Zhang***, *Approximate Reconstruction of Torsional Potential Energy Surface based on Voronoi Tessellation*, the 38th International Symposium on Combustion, Adelaide, Australia, Jan. 2021.
26. C. He and **P. Zhang***, *A Computational Study of Spinning Effects on Bouncing and Coalescence of Head on Colliding Droplets*, ILASS (Institute for Liquid Atomization and Spray Systems)-Asia, Zhengjiang, China, Oct. 2020. **Best Paper Award.**
27. Z. Zhang, C. Zhang and **P. Zhang***, *Numerical simulation of droplet spreading at small Weber numbers*, ILASS (Institute for Liquid Atomization and Spray Systems)-Asia, Zhenjiang, China, Oct. 2020.
28. K. Wu, **P. Zhang**, and X. Fan*, *Modeling Analysis on Cavity-based Flame Stabilization in Scramjet Combustor*, 12th Asia-Pacific Conference on Combustion 2019, Fukuoka, Japan, 1-5 July.
29. T. Yang, X. Xia, and **P. Zhang***, Flickering Mode Transition of Dual Pool Flames, 12th Asia-Pacific Conference on Combustion 2019, Fukuoka, Japan, 1-5 July. **The ASPCC Young Investigator Award.**
30. C. He and **P. Zhang***, *Revised Multi-structural Approximations Including Torsional Anharmonicity for Partition Function Estimation*, 12th Asia-Pacific Conference on Combustion 2019, Fukuoka, Japan, 1-5 July.
31. Q. Meng, Y. Chi, L. Zhang*, **P. Zhang***, and L. Sheng, *A Theoretical Study on the Isomerization and Dissociation Kinetics of Methyl Decanoate Radicals*, 12th Asia-Pacific Conference on Combustion 2019, Fukuoka, Japan, 1-5 July.
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33. Y. Chi, Q. Meng, L. Zhang, and **P. Zhang***, *High-level Thermochemistry Study of Hydrogen Abstraction Reactions of Large Straight-chain Alkanes Molecules by Hydrogen, Hydroxyl and Hydroperoxyl Radicals*, 12th Asia-Pacific Conference on Combustion 2019, Fukuoka, Japan, 1-5 July.

34. X. Xia and **P. Zhang***, *Vortex Sheet Formation of Flickering Buoyant Diffusion Flames*, The 8th East Asia Mechanical and Aerospace Engineering Workshop, Hong Kong, 2018.

35. Z. Zhang and **P. Zhang***, *A Practical Pressure-dependent Droplet Collision Model for Lagrangian Simulation of Impinging Sprays under High Ambient Pressures*, The 8th East Asia Mechanical and Aerospace Engineering Workshop, Hong Kong, 2018.

36. C. He, X. Xia and **P. Zhang***, *Viscous Dissipation of Bouncing of Bouncing Droplets Undergoing Off-center Collision*, The 8th East Asia Mechanical and Aerospace Engineering Workshop, Hong Kong, 2018.

37. Y. Chi, Y. Zhu, Q. Meng, L. Zhang, and **P. Zhang***, *Towards High-level Theoretical Studies of Aviation Kerosene Molecules: An ONIOM[QCISD(T)/CBS:DFT] Study on Hydrogen Abstraction Reaction of Large Straight-chain Alkanes Molecules CnH2n+2 + (H,OH,HO2) Radicals*. The 8th East Asia Mechanical and Aerospace Engineering Workshop, Hong Kong, 2018.

38. D. Yu and **P. Zhang***, *Lewis number effect on the flame height of circulation-controlled firewhirls*, The 11th Asia-Pacific Conference on Combustion, NSW Australia, 10-14 December 2017.

39. D. Zhang and **P. Zhang***, *Hypergolic Ignition Induced by Binary Collision of TMEDA and WFNA Droplets: Non-monotonic Effects of Impact Parameter*, The 11th Asia-Pacific Conference on Combustion, NSW Australia, 10-14 December 2017. **The ASPCC Young Investigator Award.**

40. X. Zhu, X. Xia, and **P. Zhang***, *Flow and Flame Dynamics of Confined Buoyant Inverse Diffusion Flames*, The 11th Asia-Pacific Conference on Combustion, NSW Australia, 10-14 December 2017.

41. C. He, J. Zhao, D. Yu, and **P. Zhang***, *Unequal-size Droplet Collison and Internal Mixing*, The 8th European Combustion Meeting, Dubrovnik, Croatia, 18-21 April 2017.

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45. Z. Zhang, Y. Chi, and **P. Zhang***, *On the role of droplet bouncing in modeling impinging sprays under elevated pressures*, in *The 13th International Conference on Combustion & Energy Utilization*. 2016: Taipei, Taiwan.

46. C. Tang, J. Zhao, **P. Zhang***, C.K. Law, and Z. Huang, *Dynamics of Internal Jets in the Merging of Two Droplets of Unequal Sizes*, in *The 8th Across Strait Symposium on Shock Waves/Complex Flows*. 2016: Hong Kong University of Science and Technology, Hong Kong.

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54. **P. Zhang***, S.J. Klippenstein, and C.K. Law, *Ab initio kinetics for the decomposition of α-hydroxybutyl radical of n-butanol*, in *The International Workshop on Frontiers of Combustion Chemistry*. 2013: Yellow Mountain, Anhui.

55. S.W. Yoo, S.W. Chaudhuri, **P. Zhang**, D.L. Zhu, and C.K. Law*, *Response of Spherical Diffusion Flames Subjected to Rotation: Microgravity Experimentation and Computational Simulation*, in *The 7th U.S. National Combustion Meeting*. 2011: Atlanta, GA.

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Conference Publications (in Chinese)

69. T. Yang, Y. Chi, and **P. Zhang***, *Dynamica*l Behaviors of Circular Flickering Flames: Computational Identification and Stuart-Landau Modeling, China National Symposium on Combustion, Hangzhou, China, 17-20 October, 2024.
70. Y. Chi, Z. Hu, T. Yang, and **P. Zhang***, Synchronization Modes of Triple Flickering Buoyant Diffusion Flames Experimental Identification and Model Interpretation, China National Symposium on Combustion, Hangzhou, China, 17-20 October, 2024.
71. W. Xu, T. Yang, and **P. Zhang***, *Supervised and Unsupervised Identification of Dynamic Patterns in Complex Flame Systems*, 1st National Conference on Intelligent Fluid Mechanics, Xian, China, 9-11-13 October, 2024. **Best Paper Award**
72. T. Yang, W. Xu, and **P. Zhang***, *Circular Flame Systems Using Deep Learning Approach: Dimensionality Reduction and Dynamical Mode Recognition*, 1st National Conference on Intelligent Fluid Mechanics, Xian, China, 11-13 October, 2024.
73. T. Yang, and **P. Zhang***, Flickering Buoyant Diffusion Flames in Rotatory Flows, 2022 National Symposium on Combustion, Shanghai, China, 9-11 December 2022. **Best Paper Award**
74. T. Yang and **P. Zhang***, Flickering Buoyant Diffusion Flames in Rotatory Flows, 2022 National Symposium on Combustion, Shanghai, China, 9-11 December 2022.
75. C. He, L. Yue, and **P. Zhang***, A Computational Study of Spinning Effects on Separation of Colliding Droplets, 2021 National Symposium on Combustion, Dalian, China, 14-16 January, 2022. **Best Paper Award**
76. Z. Zhang, C. Zhang and **P. Zhang***, Numerical simulation of droplet spreading at small Weber numbers, 2020 National Symposium on Combustion, Xiamen, China, Nov. 2020.
77. Y. Chi, Q. Meng, L. Zhang, and **P. Zhang***, *High-level Theoretical Thermochemistry Study on Hydrogen Abstraction Reactions of Large Straight-chain Alkanes Molecules C_nH_{2n+2} + (H, OH, HO_2) Radicals*, China National Symposium on Combustion 2018.
78. Q. Wu, Y. Li*, N. Kang, and **P. Zhang**, Impact Analysis of Gas Compressibility to High-speed Oil Droplet in Secondary Breakup, China National Symposium on Combustion 2018.
79. Y. Chi, Y. Zhu, Q. Meng, L. Zhang, and **P. Zhang***, *An ONIOM-method-based High-level Theoretical Study on Hydrogen Abstraction Reactions of Large Straight-chain Alkanes Molecules by Hydrogen Radical*, 2017 China National Symposium on Combustion, Nanjing, October 12-16, 2017. **Best Poster Award**
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88. **P. Zhang***, X. Fan, and G. Yu, *On Droplet Breakup in Supersonic Flows*, in *The 6th National Conference on Hypersonic Science and Technology*. 2013: Tengchong, Yunnan.

89. S. Xu*, **P. Zhang**, Y. Zhang, and X. Zhang, *Preliminary numerical investigation of the shockwave-shell interaction in an explosion vessel*, in *The 1st National Numerical Explosion Mechanics Meeting*. 2000: Lushan, Jiangxi.

90. Y. Zhang, P. Yue, S. Xu*, and **P. Zhang**, *Preliminary numerical study of the dynamic response of a vessel shell to impact load*, in *The 7th National Aeroelasticity Meeting*. 2000: Huzhou, Zhejiang.