Ping Yang (Chris)

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Education

Xi'an Jiaotong University (Member of C9 League in China) **Xi'an, CHINA**
Master of Engineering (Mechanical Engineering) *2020/09-2023/06*
Key Laboratory of Thermo-Fluid Science and Engineering, Ministry of Education. Advisor: Prof. Min Zeng
Selected Award: **National Scholarship**; **Scholar Star**; Outstanding Graduate
Average: 88.89/100

Xi'an Jiaotong University (Member of C9 League in China) **Xi'an, CHINA**
Bachelor of Engineering (Major) **AND** Finance **(Double degree)** *2016/08-2020/06*
School of Energy and Power Engineering **(Rank 1st in China)**
Selected Award: National Encouragement Scholarship; Outstanding college students
Average: 90.9/100 GPA: 3.90/4.3

Publication

Article

[1] **Ping Yang**, Weihao Ling, Ke Tian, Min Zeng, Qiuwang Wang. *Flow Distribution and Heat Transfer Performance of Two-Phase Flow in Parallel Flow Heat Exchange System*. **Energy**. 2023 [**Published**]

[2] **Ping Yang**, Weihao Ling, Ke Tian, Min Zeng, Qiuwang Wang. *Numerical Investigation on Flow Pattern, Heat Transfer and Pressure Drop Characteristics of Flow Boiling with Discrete Heat Sources*. **Heat transfer engineering**. 2023; 45(7-8). [**Published**]

[3] **Ping Yang**, Bo Wu, Xuan Tong, Min Zeng, Qiuwang Wang, Zhilong Cheng. *Insight into the heat transfer process of graphene aerogel composite phase change material*. **Energy**. 2023 [**Published**]

[4] **Ping Yang**, Xuan Tong, Min Zeng, Qiuwang Wang. *Numerical investigation on temperature control characteristics based on phase change temperature gradient arrangement.* **Journal of Engineering Thermophysics** (in Chinese). 2022; 43(6):1625-30. [**Published**]

[5] **Ping Yang**, Ke Tian, Zicheng Tang, Nianqi Li, Min Zeng, Qiuwang Wang. *Flow Distribution and Heat Transfer Performance of Two-Phase Flow in Parallel Channels with Different Cross Section*. **Chemical Engineering Transactions**. 2022; 94:703-708. [**Published**] DOI:10.3303/CET2294117

[6] Lianjie Zhang, **Ping Yang**, Wei Li, Jiri Jaromir Klemes, Min Zeng, Qiuwang Wang. *A new structure of PCHE with embedded PCM for attenuating temperature fluctuations and its performance analysis*. **Energy**. 2022; 254. [**Published**] DOI:10.1016/j.energy.2022.124462

[7] Xuan Tong, **Ping Yang**, Min Zeng, Qiuwang Wang. *Confinement Effect of Graphene Interface on Phase Transition of n-Eicosane: Molecular Dynamics Simulations*. **Langmuir**. 2020; 36(29):8422-34. [**Published**] DOI: 10.1021/acs.langmuir.0c00811

[8] Ke Tian, **Ping Yang**, Zicheng Tang, Jin Wang, Min Zeng, Qiuwang Wang. *Effect of pyrolytic reaction of supercritical aviation kerosene RP-3 on heat and mass transfer in the near-wall region*. **Applied Thermal Engineering**. 2021; 197. [**Published**] DOI: 10.1016/j.applthermaleng.2021.117401

[9] Ke Tian, **Ping Yang**, Jiří Jaromír Klemeš, Ting Ma, Min Zeng, Qiuwang Wang. *Effect of pressure on regenerative cooling process of endothermic hydrocarbon fuel at severe pyrolysis conditions.* **Aerospace Science and Technology**. 2023 [**Published**] DOI: 10.1016/j.ast.2023.108357

[10] Ke Tian, **Ping Yang**, Zicheng Tang, et al. *Numerical study on regenerative cooling technology with endothermic hydrocarbon fuel: A comprehensive review*. **Journal of Cleaner Production**, 2024: 143247. [**Published**] DOI: https://doi.org/10.1016/j.jclepro.2024.143247

Article

[11] Weihao Ling, **Ping Yang**, Lapmou Tam, Min Zeng and Qiuwang Wang. Numerical investigations on Ledinegg instability in single and parallel channels under localized heat source. **Heat transfer engineering**. 2023. [**Published**] DOI: 10.1080/01457632.2023.2282759

[12] Wei Li, Xinyi Luo, **Ping Yang**, Qiuwang Wang, Min Zeng, Christos N. Markides. *Solar-thermal energy conversion prediction of building envelope using thermochemical sorbent based on established reaction kinetics*. **Energy Conversion and Management**. 2022; 252. [**Published**] DOI: 10.1016/j.enconman.2021.115117

[13] Chunming Hu, Rui Wang, **Ping Yang**, Weihao Ling, Min Zeng, Jiyu Qian, et al. *Numerical Investigation on Two-Phase Flow Heat Transfer Performance and Instability with Discrete Heat Sources in Parallel Channels*. **Energies**. 2021; 14(15). [**Published**] DOI: 10.3390/en14154408

[14] Lianjie Zhang, Jinghan Wang, Wei Li, **Ping Yang**, Ting Ma, Min Zeng, Qiuwang Wang. *Experimental study on the preparation of superalloy Inconel718 heat exchanger channels by electrochemical etching method*. **Thermal Science and Engineering Progress**, 2024, 53: 102719. [**Published**]

[15] **Ping Yang**, Xuan Tong, Zhilong Cheng, Min Zeng, Qiuwang Wang. *Numerical investigation on heat transfer characterization of nano-confined phase change materials*. 2024 [**Submitted**]

Conference

[1] **Ping Yang**, Weihao Ling, Min Zeng, Qiuwang Wang. *A novel modified phase change model for flow boiling based on Lee model*. The 5th South East European Conference on Sustainable Development of Energy, Water and Environment Systems, May 22-26, 2022 in Vlorë. Web

Patent

[1] Wenquan Tao, Minghua Huang, **Ping Yang**, Zixing Wang, Jiaqi Pu. An air purification device based on ultrasonic technology. 2024. Chinese Patent No. ZL 2019 1 0424937.4 [First student author]

[2] Min Zeng, Ke Tian, Zicheng Tang, Ping Yang, Ting Ma, Qiuwang Wang. A simplified method for deep cracking model of hydrocarbon fuels. 2024. Chinese Patent No. ZL 2021 1 1526037.4

Project and Research

1. **Numerical and experimental investigations on two-phase flow (flow boiling)** ***Leader***

- Developed a model that can simulate flow and heat distribution of two-phase flow in complex heat exchange systems by **self-programming**.
- Numerical investigation on flow pattern, heat transfer and pressure drop characteristics of flow boiling in mini-channel.
- Established an experimental platform of flow boiling with high heat flux.

2. **Heat transfer and energy storage characteristics of graphene aerogel composite PCMs** ***Leader***

- Optimization of the graphene aerogel synthesis method.
- Experimental investigations on heat transfer and phase change progress of graphene aerogel composite PCMs.
- Proposed new ideas about CPCMs cascade arrangement for thermal management optimization.

3. **Regenerative cooling technology with supercritical aviation kerosene** ***Core Member***

- Numerical investigations on regenerative cooling process of endothermic hydrocarbon fuel at severe pyrolysis conditions.
- Developed a heat-mass coupling numerical model for supercritical hydrocarbon fuel under severe pyrolysis conditions.
- Proposed a new heat transfer prediction correlation for this study.

Project and Research

4. **Design high efficiency heat exchange systems and develop software** ***Core Member***

- Design of efficient cooling systems based on heat transfer performance investigations.
- Developed heat exchanger design software through C++ (Core solvers).
- Front-end and back-end software development.

5. **Vehicle thermal management based on composite PCMs** ***Core Member***

- Preparation of composite phase change materials with high energy storage density.
- Enhanced heat transfer performance of the composite phase change materials.

Other activity

1. Studying in University of Minnesota *2018/06-2018/08*
Studied three courses: System Dynamics, Heat Transfer and Balloon & Rockets.

2. Internship in LG Corporation of Korea *2019/06-2019/07*
Trained to make CFD analysis and learned knowledge about air conditioning design.

3. **As a session chair** at the 5th South East European Conference on Sustainable Development of Energy, Water and Environment Systems.

4. As an organization member and session chair at the 27th Conference on Process Integration, Modelling and Optimisation for Energy Saving and Pollution Reduction.

Skill

1. Master MATLAB, C++, Python and FORTRAN for programming;

2. Master SOLIDWORKS, COMSOL, FLUENT, ICEM et al. software for numerical simulation.

3. Master the experimental skills related to flow and heat transfer.