

# Jingying Wang

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## Education & Work Experience

- July. 2015–Present      **Lecturer**  
Institute of Thermal Engineering and Fluid Mechanics, Shandong University  
Research Interests: **Computational Fluid Dynamics (CFD), Hypersonic Thermo-chemical Non-equilibrium Flows, Supersonic Turbulent Combustion, Radiative Transfer, Hemodynamics**
- Sept. 2009-present      **Ph.D.**, Fluid Mechanics  
Institute of Fluid Mechanics, Beihang University  
Dissertation: **Numerical Study on Coupled Chemical Nonequilibrium and Thermal Radiation Effects in High-Speed and High-Temperature Flows**  
Supervisor: Prof. Lee Chun-Hian (Academician of the Chinese Academy of Engineering )
- Sept. 2005-Jun. 2009      **B. E.**, Engineering Mechanics  
School of Advanced Engineering, Beihang University  
Dissertation: **Study of Boundary-Layer Transition by Sublimating Method**

## Professional Profile

- Proficient in **FORTRAN** programming.  
Description: (i) independently developed a massively parallel computing platform for solving high-temperature non-equilibrium flows including complex physical and chemical processes. (ii) independently completed a parallel DOM (discrete ordinates method) code for radiative transfer simulation.
- Other programming languages: **MATLAB**
- Proficient Software skills: **FLUENT, Gridgen, Tecplot, MS Office.**
- English skill: **IELTS 6.5**

## Projects

- Jan. 2016 – Present      **Numerical study on hypersonic thermo-chemical nonequilibrium flows**, Leader supported by Shandong University, China.
- Mar. 2014 – Mar. 2015      **Hemodynamic investigation of the Fetus Aortic Arch by ultrasound technique and CFD**, Participant supported by Capital Medical University, China
- Jan. 2013 – Dec. 2015      **Modeling and analysis of the interaction between turbulence and combustion in supersonic compressible flows**, Participant supported by National Natural Science Foundation of China.
- July 2013 – June 2014      **Engineering/numerical methods for XX aerodynamic heating calculation**, Participant supported by 863 Projects of China.
- Jan. 2011 – Jan. 2014      **Numerical techniques for thermal environment prediction inside XX engines**, Participant supported by National Key Projects of China.

## **Publications**

1. **Jingying Wang**, Jiaao Hao, Min Zhang, et al. Numerical simulation of the hypersonic thermo-chemical nonequilibrium flow. 9th National Hypersonic Science & Technology Conference of China, 12-15th October 2016, Xian, China
2. Jiaao Hao, **Jingying Wang**<sup>#</sup>, Zhenxun Gao, et al. Comparison of transport properties models for numerical simulations of Mars entry vehicles. *Acta Astronautica*. (in press & available online)
3. Jiaao Hao, **Jingying Wang**<sup>#</sup>, Chunhian Lee. Numerical study of hypersonic flows over reentry configurations with different chemical nonequilibrium models. *Acta Astronautica*, 2016, 126: 1-10
4. Jiaao Hao, **Jingying Wang**<sup>#</sup>, Zhenxun Gao, et al. Numerical Investigation of Electronic-Electron Energy Nonequilibrium in High-Speed and High-Temperature Flows, *Acta Aeronautica et Astronautica Sinica*. (in Chinese) (in press & available online)
5. **Jingying Wang**, Zhenxun Gao, Chunhian Lee. An iterative technique for coupled conduction-radiation heat transfer in semitransparent media. *Numerical Heat Transfer A*, 2015, 67(11): 1208-1231
6. **Jingying Wang**, Zhenxun Gao, Chunhian Lee. An decoupled procedure for convection-radiation simulation in scramjets. *Sci. China Tech. Sci.*, 2014, 57(12): 2551-2566
7. Zhenxun Gao, **Jingying Wang**, Chongwen Jiang, Chunhian Lee. Application and theoretical analysis of the flamelet model for supersonic turbulent combustion flows in the scramjet engine. *Combustion Theory and Modelling*, 2014, 18(6): 652-691
8. **Jingying Wang**, Zhenxun Gao, Chunhian Lee. The wall emissivity effects on aerodynamic heating in scramjets. 1st International High Speed Flow Conference, 13-14th May 2014, Beijing, China
9. **Jingying Wang**, Chiping Jiang. Precision study on methods in mechanics of materials applied to analyzing the tapered bar and beam. *Mechanics in Engineering*, 2008, 30(8): 84-86 (in Chinese)
10. Jun Wang, Guangsheng Du, **Jingying Wang**, et al. The experimental and analysis of transitional flow in pipe. *Journal of Hydrodynamics, Ser B*, 2016, 28(2): 313-318

# represents corresponding author

## **Teaching Experience**

Sept. 2015-Present	<b>Engineering Fluid Mechanics</b> , Shandong University, Lecturer
Mar. 2011-Jun. 2014	<b>College Physics</b> , Beihang University, Teaching Assistant
Sept. 2009-Jan. 2011	<b>Mathematical Analysis</b> , Beihang University, Teaching Assistant