Ph.D. Positions in Computational Modeling of Hypersonic Flow and Plasma Physics
University of North Dakota

Job Title	Ph.D. Positions in Computational Modeling of Hypersonic Flow and Plasma Physics
Department	Department of Mechanical Engineering
	https://engineering.und.edu/academics/mechanical/
Institution	University of North Dakota
	Grand Forks, North Dakota
Date Posted	Jan. 16, 2024
Application Deadline	Open until filled
Position Start Date	Fall 2024
Job Categories	Graduate Student
Academic Field(s)	Mechanical Engineering
	Material/Metallurgy
	Engineering Physics
	Engineering Mechanics
	Computer Science
	Chemical/Petroleum
	Aerospace/Aeronautical/Astronautics

Apply By Email

Job Description

The Computational Gas Dynamics and Plasma Physics Lab in the Department of Mechanical Engineering (https://engineering.und.edu/academics/mechanical/) at the University of North Dakota (https://und.edu/) is looking for applications for funded Ph.D. positions with a start date of Fall 2024. The successful candidates will carry out computational research on the modeling and simulation of hypersonic flow and plasma physics, using both continuum and kinetic theory methods coupled with high performance computing. They will have the opportunity to participate in existing and be

encouraged to pursue new collaborative research.

Qualifications:

The ideal candidate should have earned a B.S. or M.S. degree in Aerospace Engineering, Mechanical Engineering, Chemical Engineering, Materials Engineering, Applied Mathematics, Computer Science, Chemistry, Physics, or a closely related field.

Preferred qualifications:?

- Strong background in fluid dynamics, computational fluid dynamics, mathematics, and numerical methods and analysis.
- Strong programming ability in C++, Python, or other object-oriented programming languages.
- Experience developing numerical methods and computation code.
- Experience with high performance computing.

About the professor:

Chonglin Zhang is an Assistant Professor of Mechanical Engineering at the University of North Dakota. He earned his PhD in Aerospace Engineering and Mechanics at the University of Minnesota in 2013. His research focuses on the kinetic theory based particle simulation methods, including the direct simulation Monte Carlo (DSMC) method and the particle-in-cell (PIC) method, with applications in hypersonic flow, rarefied gas dynamics, and plasma physics. He uses high performance computing (HPC) in his research. Prior to joining UND, he was a Research Scientist at Rensselaer Polytechnic Institute in Troy, NY, where he worked on developing simulation code to model plasma physics in tokamak device, a promising device for controlled fusion. Previously, he also spent several years as a Project Engineer in the automotive industry, where he worked with engineers and researchers from Ford, Toyota, and GM to help them design new products using Computational Fluid Dynamics (CFD).

To Apply:

Please email Dr. Chonglin Zhang at chonglin.zhang@und.edu with the subject line "Ph.D. Application", including a brief cover letter, your CV, and unofficial transcripts "in a single PDF file". Please only use the above subject line in your email. Otherwise I will not be able to locate your email and review your application as I receive large number of applications. The review process will commence immediately and will continue until the positions are filled.

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EEO/AA Policy

The University of North Dakota is an Affirmative Action/Equal Opportunity Employer. All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, disability or other protected characteristic. Women, minorities, veterans, individuals with disabilities, and members of other underrepresented groups are especially encouraged to apply. Applicants are invited to provide information regarding their gender, race and/or ethnicity, veteran's status and disability status as part of the application process. This information will remain confidential and separate from your application.

Contact Information

Please reference Academickeys in your cover letter when applying for or inquiring about this job announcement.

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