Post Doc in Modeling and Simulation of Thermal Protection Systems for High-Speed Vehicles
University of Texas at Austin

Job Title Post Doc in Modeling and Simulation of Thermal Protection Systems for High-Speed Vehicles

Department Aerospace Engineering & Engineering Mechanics
https://sites.utexas.edu/flow/join-us/

Institution University of Texas at Austin
Austin, Texas

Date Posted Apr. 11, 2025

Application Deadline Open until filled

Position Start Date Available Immediately

Job Categories Post-Doc

Academic Field(s) Aerospace/Aeronautical/Astronautics
Mechanical Engineering
Engineering Mechanics

Job Website https://sites.utexas.edu/flow/files/2024/09/2024.09.06.Postdoc_UT_Austin_CMC.pdf

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Job Description

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The research groups of Prof. Chad Landis and Prof. Fabrizio Bisetti at the University of Texas at Austin are engaged in funded research on modeling and simulation of the response of Ceramic Matrix Composite (CMC) materials to high-speed flows.

A postdoctoral fellow position on this topic is available starting immediately. The appointment is yearly and renewable for up to 3 years based on performance and availability of funding. The salary is between $65,000 and $75,000 per year, depending on qualifications and experience. Benefits include health, dental, and vision insurance, and relocation allowance.

The postdoctoral fellow will be responsible for *(i)* formulating a mathematical model for the external heat and mass transport in the boundary layer, radiative heat transfer at the surface of the CMC, and thermal conduction in the anisotropic material, *(ii)*formulating mathematical models for the structural response and failure of the CMC, *(iii)* assist with the implementation of the models in a Finite Element Method (FEM) solver, likely based on the FEM library deal.II, *(iv)*simulate material response under inductively coupled plasma torch (ICPT) testing conducted at UT Austin. The postdoctoral fellow will be advised jointly by Profs. Landis and Bisetti.

Collaborations with the U.S. Army Research Laboratory (ARL), colleagues at UT Austin responsible for experiments, and scientists at the Texas Advanced Computing Center (TACC) responsible for software development are an integral part of the research activities.

The postdoctoral fellow will present at conferences and disseminate research in the form of peer reviewed articles in high-impact journals. The postdoc will help the PIs with graduate student supervision and acquire experience in managing a large-scoped funded program, including assisting the PIs with reporting and communication with the funding agency. The postdoctoral fellow will work collaboratively with computational scientists at TACC in the implementation of the research software.

Applicants must be U.S. Citizens. Strong background in one or more of high-speed flow, continuum and fracture mechanics, thermal protection systems for high-speed flows and hypersonics, fluid mechanics, parallel software development, and large-scale computing are desirable.

Interested candidates should contact the PIs at **landis@utexas.edu** and **fbisetti@utexas.edu**, submitting CV, two sample publications or manuscripts, and a brief cover letter with career and research highlights. Include the keyword *[Army HTMR]* in the subject line. Qualified candidates will be invited to participate in a remote seminar and interview.

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Contact Information

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

Contact Fabrizio Bisetti
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