



Predictive
Engineering &
Computational Science



Postdoctoral Scholar Positions - Numerical Methods for Boltzmann Eqn.

The Center for Predictive Engineering and Computational Sciences in the Oden Institute for Computational Engineering and Sciences at the University of Texas at Austin is searching for Postdoctoral Scholars to work on the development and implementation of advanced numerical methods for the Boltzmann and radiative transport equations. These techniques are being developed as part of a large, multidisciplinary research project on predictive simulation models of inductively coupled plasma (ICP) torches. High-fidelity simulation of an ICP torch presents challenges in both multi-physics modeling as well as algorithms and programming paradigms for emerging exascale computing platforms. This postdoc will contribute to the development of algorithms for solving the Boltzmann and radiative transfer equations, the implementation of these algorithms in a framework targeting exascale architectures, and the coupling of the resulting tools with solvers for other components of the system, including the compressible Navier-Stokes equations and Maxwell's equations.

Knowledge of finite element and/or spectral methods and prior software experience in large-scale parallel code development is required, including, for example, MPI, C++, multi-threading, and git revision control. Applicants must have a Doctorate in Science, Engineering, Computer Science, Computational Science, Applied Mathematics, or a related technical field. Candidates with experience in simulation of fluid mechanics and/or plasma physics are preferred.

For more information about the project and team, visit pecos.oden.utexas.edu. To apply, please send a cover letter describing your interests, a CV, and a list of three references to pecos_recruit@oden.utexas.edu.