Postdoctoral and Graduate Student Research Opportunities in Experimental Plasma Electromagnetics

Department of Mechanical Engineering
Stanford University

The Stanford Plasma Physics Laboratory (https://sppl.stanford.edu/) seeks students who are interested in continuing on to either a Ph.D. program or postdoctoral studies in the broader field of Experimental Plasma Electromagnetics.

Stanford University has been active in the study of the use of gas discharges and laser produced plasmas in applications related to the control of electromagnetic waves. Recently published work addresses the use of non-magnetized as well as magnetized plasmas in photonic crystals and metamaterials to provide a degree of reconfigurability. Our recent award of a Multi-University Research Initiative (commencing 2021) examines an extension of this prior work to exploit the gyrotropic response of magnetized plasmas that when integrated into topological non-trivial and nonreciprocal metastructures provide unique control of surface and bulk electromagnetic wave propagation. We are currently interested in applications such as the demonstration of tunable invisibility cloaks, diffraction-free beamed energy, and optical computing. Motivated and qualified students will also be able to participate in the broader research activities of the laboratory, which include plasma research related to plasma transport, electric propulsion, advanced plasma diagnostics, plasma chemistry, and fusion. Opportunities are also available to students who may qualify for participation in projects collaborating with the DOE Laboratories.

Students with prior experience in electromagnetics or plasmas is highly desirable. Highly motivated students that are independent, self-starters, and also willing to work with students from our MURI collaborating institutions are encouraged to apply.

Interested students should send a CV and a brief statement of research interests, together with the names of at least two references to Professor Mark Cappelli (cap@stanford.edu).