Opening: Postdoctoral associate in silicon heterojunction and silicon-based tandem solar cells

The Holman Research Group at Arizona State University has an opening for an outstanding postdoctoral associate in solar cell research. ASU has been charged by DOE, ARPA-E, and NSF—within the framework of several projects—with the challenge of developing silicon heterojunction solar cells tuned to the infrared spectrum. Success in this endeavor, in conjunction with close collaboration with partners who are designing complementary top cells, will enable silicon-based tandem modules with efficiencies exceeding 30%. Furthermore, the project requires advances in the fundamental materials science of contacts and transparent conductive oxides that may also translate to the existing 200 GW/year silicon single-junction photovoltaic production capacity.

Candidates are sought who will lead infrared-tuned silicon heterojunction cell design, fabrication, and characterization. The researcher will be responsible for developing contacts and electrodes that are free of infrared parasitic absorption, that allow the full chemical potential (implied-voltage) to be extracted as electrical potential (measured voltage) at the maximum power point, and that are compatible with subsequent top-cell processing (in the case of two-terminal tandems). Consequently, previous experience with silicon or other solar cell fabrication, thin film deposition and characterization, and solar cell loss analysis is highly desirable.

Outside of the lab, the postdoctoral associate is expected to “own” his or her projects and take on the primary leadership role. In particular, he or she will be responsible for communicating with partner institutes, leading meetings, writing quarterly reports (in addition to scientific manuscripts), and ensuring that the projects meets their milestones. Technology commercialization is a focus of the group, and the postdoc will also have the opportunity to, e.g., participate in intellectual property creation. All candidates must have the ability to conduct self-directed research, mentor graduate students, and work collaboratively with academic team members in related fields. Candidates should be creative and productive, as evidenced by unique scholarly or other technical contributions to research projects. Excellent writing and presentation skills are a must.

The postdoctoral associate is expected to start in fall 2016, though exceptions may be made for exceptional candidates. He or she will be offered a competitive salary and the opportunity to travel regularly to conferences. The appointment is for up to three years pending satisfactory performance and the continued availability of funds.

Interested applicants should send a cover letter with a summary of previous research experience, along with a curriculum vitae that includes three references, to Prof. Zachary Holman at zachary.holman@asu.edu.