Opening: Postdoctoral associate in (Mg,Zn)CdTe top cells for silicon-based tandem photovoltaic modules

The Holman Research Group at Arizona State University, in close collaboration with the II-VI group at the National Renewable Energy Laboratory, has an opening for an outstanding postdoctoral associate in solar cell research. ASU and NREL have been charged by DOE with the challenge of demonstrating the first polycrystalline MgCdTe or ZnCdTe solar cell with a bandgap of 1.7–1.9 eV and an efficiency exceeding 15%. Success in this project will lay the groundwork for the marriage of II-VI and silicon cells—the most mature commercial photovoltaic technologies—to form tandem modules with efficiencies exceeding 30%. Furthermore, the project requires significant advances in the fundamental materials science of II-VI semiconductors that may also translate to the existing 3 GW/year CdTe photovoltaic production capacity.

Candidates are sought who will pioneer (Mg,Zn)CdTe cell design, fabrication, and characterization. The researcher will be responsible for developing high-quality polycrystalline (Mg,Zn)CdTe absorber layers deposited by close-space sublimation (CSS), interface and grain boundary passivation treatments or layers to mitigate non-radiative recombination, and contacts to selectively extract electrons and holes. Consequently, previous experience with CdTe or other thin-film solar cells, CSS, solar cell device design, and materials and device characterization is highly desirable.

Outside of the lab, the postdoctoral associate is expected to “own” the project and take on the primary leadership role. In particular, he or she will be responsible for communicating with all project members, leading meetings, writing quarterly reports (in addition to scientific manuscripts), and ensuring that the project meets its milestones. Technology commercialization is a focus of DOE projects, 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 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 will be an employee of ASU but will work primarily at NREL under the guidance of Dr. Wyatt Metzger (and thus live in Colorado). He or she will travel to ASU approximately monthly to perform experiments and meet with the rest of the project team. 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 two 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 and Dr. Wyatt Metzger at wyatt.metzger@nrel.gov.