

Abstract Submitted
for the MAR14 Meeting of
The American Physical Society

High-throughput characterization for solar fuels materials discovery¹ SLOBODAN MITROVIC, NATALIE BECERRA, Joint Center for Artificial Photosynthesis, California Institute of Technology, EARL CORNELL, Engineering Division, Lawrence Berkeley National Laboratory, DAN GUEVARRA, JOEL HABER, Joint Center for Artificial Photosynthesis, California Institute of Technology, JIAN JIN, Engineering Division, Lawrence Berkeley National Laboratory, RYAN JONES, KEVIN KAN, MARTIN MARCIN, PAUL NEWHOUSE, EDWIN SOEDARMADJI, SANTOSH SURAM, CHENGXIANG XIANG, JOHN GREGOIRE, Joint Center for Artificial Photosynthesis, California Institute of Technology, HIGH-THROUGHPUT EXPERIMENTATION TEAM — In this talk I will present the status of the High-Throughput Experimentation (HTE) project of the Joint Center for Artificial Photosynthesis (JCAP). JCAP is an Energy Innovation Hub of the U.S. Department of Energy with a mandate to deliver a solar fuel generator based on an integrated photoelectrochemical cell (PEC). However, efficient and commercially viable catalysts or light absorbers for the PEC do not exist. The mission of HTE is to provide the accelerated discovery through combinatorial synthesis and rapid screening of material properties. The HTE pipeline also features high-throughput material characterization using x-ray diffraction and x-ray photoemission spectroscopy (XPS). In this talk I present the currently operating pipeline and focus on our combinatorial XPS efforts to build the largest free database of spectra from mixed-metal oxides, nitrides, sulfides and alloys.

¹This work was performed at Joint Center for Artificial Photosynthesis, a DOE Energy Innovation Hub, supported through the Office of Science of the U.S. Department of Energy under Award No. DE-SC0004993

Slobodan Mitrovic
California Institute of Technology

Date submitted: 14 Nov 2013

Electronic form version 1.4