

Jeffery A. Aguiar

Analytical Measurements, Materials Science Center
National Renewable Energy Laboratory,
15013 Denver West Parkway
Golden, Colorado-80401

Phone: (303) 384-6485

Cell: (650) 346-1558

E-mail: Jeffery.Aguiar@nrel.gov

Alternate email:

Jeffery.Aguiar@gmail.com

Education and Training

- 2012 Doctorate of Philosophy Degree (Material Science)
University of California Davis, Lawrence Livermore National Laboratory
(LLNL)
Davis, California
Thesis Research: Atomic Scale Characterization of Materials using Scanning
Transmission Electron Microscopy
- 2007 Bachelor of Science Degree (Engineering Physics)
University of the Pacific
School of Engineering and Computer Science
Stockton, California

Research and Professional Experience

- 2014 – Present *Post-doctoral research associate*, Analytical Measurements, National Renewable Energy Laboratory (NREL). Dr. Aguiar primarily is focused on using analytical transmission electron microscopy to study energy harvesting materials, including photovoltaics. He has been instrumental in characterizing various energy materials, performing microscopy using the FEI Tecnai at NREL and user facilities including at Lawrence Berkeley National Laboratory, Oak Ridge National Laboratory, and Arizona State University.
- 2012 – 2014 *Post-doctoral research associate*, Materials Science and Technology, Los Alamos National Laboratory. Dr. Aguiar primarily studied radiation-induced modifications in complex oxide and multiphase ceramic composites using analytical transmission electron microscopy; crystallography of complex oxides using electron beam diffraction. He has been instrumental in characterizing various oxide composites, pre-irradiation samples preparation, performing microscopy using the aberration corrected FEI Titan at LANL and user facilities including at Oak Ridge National Laboratory and Arizona State University.
- 2007-2012 *Graduate Research Fellow*, Materials Science, Lawrence Livermore National Laboratory. Crystallography, and aberration corrected transmission electron microscopy of complex oxide ceramics; including model waste forms; engineering alloys to improve on radiation resistance.

Synergistic Activities

- Member of the Materials Research Society, American Physical Society, American Ceramic Society, Microscopy Society of America

- Peer-reviewed manuscripts for numerous journals and conference proceedings including, *Ultramicroscopy*, *Microscopy and Microanalysis*, *Scripta Materialia*, *Journal of Physics: Condensed Matter*, *Atmospheric Environment*, *Geophysical Research Letters*, *Physical Review Letters*, *Journal of Nuclear Materials*, *Applied Physics Letters*, *Advanced Materials Interface*, *Journal of Applied Physics*, *Journal of Materials Research*, *Journal of Physical Chemistry Chemical Physics*, *ACS Applied Materials & Interfaces*

Honors and Awards

- 2013, Excellence and Service Award, Los Alamos National Laboratory
- 2010, Teaching Assistant of the Year, University of California-Davis
- 2009, Awarded a graduate research fellowship by Lawrence Livermore National Laboratory

Technical work experience:

- Transmission Electron Microscopy (TEM)
- Analytical spectroscopy (Energy dispersive x-ray analysis, electron energy loss spectroscopy, x-ray absorption spectroscopy)
- Diffraction, (x-ray & neutron diffraction analysis)
- First principles and atomistic calculations (Density functional theory, kinetic Monte Carlo)