2015 R&D 100 Awards - Berkeley Lab Finalists
Award Winners will be announced in November 2015

Computing Sciences / Life Sciences - Nomination Managers: Jon Bashor, Linda Vu
OpenMSI: High performance, advanced data management, model building analysis,
and visualization resources for mass spectrometry imaging via the web (PIs: Ben Bowen, Oliver Reubel)

Earth Sciences - Nomination Manager: Maryann Villavert
CASSM: Continuous Active Seismic Source Monitoring (PI: Tom Daley)

Energy Technologies - Nomination Manager: Alecia Ward

High Performance Silicon Monoxide (SiO) Electrode for Next Generation Li-ion Batteries: Represents a
20% improvement over the limited energy density of conventional graphite anode-based Li-ion batteries
(PIs: G. Liu, Z. Wang, H. Zhao)

V2G Sim: Simulation platform to address real-world effects of plug-in electric vehicles (PEVs) on the power
distribution grid and quantify battery degradation in PEVs (PI: S. Saxena)

Materials Sciences - Nomination Managers: Rachel Berkowitz, Branden Brough

Boron Nitride Nanotube technologies: Nanotechnologies for use in high temperature or harsh chemical
environments (PI: Alex Zettl)

Axial and Arbitrary Plane Optical Microscope: Fast, high-contrast 2D and 3D imaging of structures beneath
the surface of large biological samples (PIs: Xiang Zhang, Jeongmin Kim, Sadao Ota, Tongcang Li, Yuan
Wang)

Highly Efficient, Durable Nanoframes for Electrocatalysts with Optimized Precious Metal Content: Highly
active and durable electrocatalyst requiring less precious metal than other technologies. (PIs:
Peidong Yang w/ PIs from Argonne National Lab) This would be a co-nomination with Argonne National
Lab.

Physical Biosciences - Nomination Manager: Ingrid Peterson
Biomimetic Colorimetric Sensor: For quick, accurate detection and analysis of materials / substances
capable of detecting multiple substances as an array and capable of *in situ* analysis (PI: Seung-Wuk Lee)

**Advanced Light Source co-nomination with Argonne National Laboratory, Brookhaven National
Laboratory, and aBeam Technologies, Inc**. - Nomination Manager: Ray Conley, ANL
Testing Metrological Equipment for Nanoscale Accuracy: Fabrication of a pseudo-random test pattern to
characterize nanometrological systems over their entire dynamic range, for use in the semiconductor
industry (Berkeley Lab PI: Valeriy Yashchuk)