

Sebastien Lounis

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Research

Graduate student researcher—The Molecular Foundry

Lawrence Berkeley National Laboratory, 2012–present

- Developing nanomaterials for use in energy-saving smart windows
- Authored two successful proposals for experiments at highly competitive synchrotron facilities
- Expanded group capabilities in materials modeling and simulation using MATLAB

Graduate student researcher—Materials Science Division

Lawrence Berkeley National Laboratory, 2008–2012

- Built interdisciplinary partnership to study iron pyrite for low-cost, earth-abundant solar PV
- Uncovered new optical and electronic properties in graphene films
- Awarded \$100k from the Innovation Seed Fund in Energy and Climate Research at UC Berkeley

Leadership

Editor in chief, editor, and contributing author

Berkeley Science Review, 2010–2013

- Improved work flow and streamlined operations across three production teams
- Doubled membership and increased web traffic five-fold in one year
- Authored successful grant proposal to The Green Initiative Fund for development of sustainable printing practices across UC Berkeley's campus

Co-president, program chair, and volunteer

Berkeley Energy & Resources Collaborative (BERC), 2009–2012

- Led team of 35 VPs and departmental liaisons
- Raised \$65k in institutional funding from the Berkeley Energy and Climate Institute
- Planned and executed Energy Symposium and Innovation Expo for over 600 attendees
- Founded and launched educational outreach program at Berkeley High School
- Reorganized leadership structure into functional teams for a more effective organization
- Led strategic planning retreat to set vision and goals for upcoming year

Energy Projects

Teaching

Photovoltaic Technologies, UC Berkeley, 2011

- Created technical curriculum accessible to engineering, business, law, and policy students
- Recruited 60 students from 12 disciplines to enroll in the course
- Engaged high-profile guest speakers as in-class lecturers on policy and economics
- Managed student projects sponsored and mentored by bay area solar companies
- Planned and executed public lecture by Prof. Dan Kammen for 180 attendees

Economic Analysis

Energy Efficiency in Buildings Course, 2012

- Developed economic model to set price targets for nano smart window coatings
- Adapted MATLAB code to interface with hourly energy use data from Excel database
- Identified regional target markets based on price sensitivity

Consulting

Cleantech to Market Course, Haas School of Business, 2011

- Crafted go-to-market strategy for nano smart-window startup
- Project report is now used as part of annual curriculum for the course

Education

Ph.D. in Applied Science & Technology

University of California, Berkeley, 2008–2014 (exp.)
GRE quant.: 800/800

B.S. in Physics

University of Michigan, Ann Arbor, 2003–2007

B.S. in Philosophy

University of Michigan, Ann Arbor, 2003–2007

Publications and Presentations

J.M. Lucas, **S.D. Lounis**, et. al.
“Ligand-Controlled Colloidal Synthesis and Electronic Structure Characterization of Cubic Iron Pyrite (FeS₂) Nanocrystals,” *Chemistry of Materials* **25**, 9 (2013) 1615–1620

J.H. Engel and **S.D. Lounis**.
“An Approach to Integrated Photovoltaics Education,” Materials Research Society Spring Meeting (2012)

S.D. Lounis, et al. “Resonant Photoluminescent Charging of Epitaxial Graphene,” *Applied Physics Letters* **96**, 151913 (2010)

Languages

Native speaker of English
Proficient speaker of German and French

Expertise

Topic Areas:

Energy Technology
Nanotechnology
Solid State Physics

Data analysis:

IGOR
MATLAB
MS Excel

Design:

Adobe InDesign
Adobe Illustrator
MS PowerPoint