Jonas L. Kaufman

Materials Department
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Education

University of California, Santa Barbara
Ph.D. Materials — 2017–Present
Advisor: Prof. Anton Van der Ven
GPA: 4.0

Harvey Mudd College
B.S. Physics — 2013–2017
Graduate with High Distinction, Departmental Honors in Physics and Humanities
GPA: 3.9

Research Experience

University of California, Santa Barbara — Sep. 2017–Present
Graduate Student Researcher
Studying materials for "beyond-Li-ion" batteries using first-principles statistical mechanics methods

Lawrence Livermore National Laboratory — Jun. 2019–Sep. 2019
Academic Cooperation Participant
Molecular dynamics simulation to probe non-equilibrium properties of hydrogen storage materials

Sandia National Laboratories, Albuquerque — Sep. 2016–May 2017
Harvey Mudd College Physics-Engineering Clinic Team Member
Finite element modeling of ceramic nanoparticles in composites for capacitor applications

UNSW Sydney, Australia — May–Aug. 2015, 2016
Materials Science Research Assistant
Atomistic modeling of mechanical properties to aid development of multicomponent metallic alloys

Awards

Best Oral Presentation Award, Materials Research Society Spring Meeting — 2021

U.S. Department of Energy Computational Science Graduate Fellowship — 2017–Present

Jon A. Wunderlich Prize for Creative Achievement in Physics, Harvey Mudd College — 2017

Barry M. Goldwater Scholarship — 2016–2017

Jude and Eileen Laspa Fellowship in Applied Mechanics, Harvey Mudd College — 2015–2017

National Merit Scholarship — 2013–2017

Publications

8. **J. L. Kaufman** and A. Van der Ven. Antiphase boundary migration as a diffusion mechanism in a $P3$ sodium layered oxide. *Physical Review Materials* 5, 055401 (2021). Editors' Suggestion.
7. E. Hwang, E. Cuddy, J. Lin, **J. L. Kaufman**, A. Shaw, P. L. J. Conway, A. Pribram-Jones, K. J. Laws, and L. Bassman. Predicting ductility in quaternary B2-like alloys. *Physical Review Materials* 5, 033604 (2021).
6. **J. L. Kaufman** and A. Van der Ven. Ordering and structural transformations in layered K_xCrO_2 for K-ion batteries. *Chemistry of Materials* 32, 6392–6400 (2020).
5. **J. L. Kaufman**, J. Vinckevičiūtė, S. K. Kolli, J. G. Goiri, and A. Van der Ven. Understanding intercalation compounds for sodium-ion batteries and beyond. *Philosophical Transactions of the Royal Society A* 377, 20190020 (2019).
4. M. Y. Toriyama, **J. L. Kaufman**, and A. Van der Ven. Potassium ordering and structural phase stability in layered K_xCoO_2. *ACS Applied Energy Materials* 2, 2629–2636 (2019).
3. **J. L. Kaufman** and A. Van der Ven. Na_xCoO_2 phase stability and hierarchical orderings in the $O3/P3$ structure family. *Physical Review Materials* 3, 015402 (2019).
2. **J. L. Kaufman**, S. H. Tan, K. Lau, A. Shah, R. G. Gambee, C. Gage, L. MacIntosh, A. Dato, P. N. Saeta, R. C. Haskell, and T. C. Monson. Permittivity effects of particle agglomeration in ferroelectric ceramic-epoxy composites using finite element modeling. *AIP Advances* 8, 125020 (2018).
1. **J. L. Kaufman**, G. S. Pomrehn, A. Pribram-Jones, R. Mahjoub, M. Ferry, K. J. Laws, and L. Bassman. Stacking fault energies of nondilute binary alloys using special quasirandom structures. *Physical Review B* 95, 094112 (2017).

Presentations

4. **DOE CSGF Program Review**. *First-principles thermodynamics and kinetics of layered intercalation compounds for "beyond Li-ion" batteries"*. Jul. 21, 2021. Virtual.
3. **Materials Research Society Spring Meeting**. *Hierarchical intercalant orderings in layered oxides for Na- and K-ion battery electrodes*. Apr. 21, 2021. Virtual. Best Oral Presentation Award.
2. **Gordon Research Conference: Batteries**. *Modeling structural evolution in layered cathode materials for Na- and K-ion batteries*. Poster. Feb. 17–18, 2020. Ventura, CA.
1. **Materials Research Society Spring Meeting**. *Structural phase transitions and intercalant ordering in layered Na- and K-ion cathode materials*. Apr. 23, 2019. Phoenix, AZ.

Teaching

University of California, Santa Barbara Sep.–Dec. 2018
Materials Teaching Assistant
Teaching assistant for *Introduction to Quantum Mechanics for Materials* (MATRL 289A)

Harvey Mudd College May 2015–May 2017
Physics Academic Excellence Program Facilitator
Lead tutoring workshops for students in Special Relativity, Mechanics and Electromagnetism courses