

Dr. Ohad Levy - Curriculum Vitae

Personal

- Born: August 5, 1964; Beer-Sheva, Israel.
- Family Status: Married + 3.

Education

- 1991-1995: Ph.D. in Physics, School of Physics and Astronomy, Tel-Aviv University. Thesis: *Electric and Optical Properties of Nonlinear Composite Materials*, Thesis advisor: Prof. David J. Bergman.
- 1986-1990: M.Sc. in Physics, School of Physics and Astronomy, Tel-Aviv University. Thesis: *Thermoelectric Properties of composite Materials*, Thesis advisor: Prof. David J. Bergman.
- 1982-1985: B.Sc. in Physics and Mathematics, The Hebrew University, Jerusalem ("Talpiot" program).

Professional Experience

- 2008-Present: Senior Researcher, Department of Physics, NRCN, Israel.
- 2013-present: Visiting Professor, Duke Center for Autonomous Materials Design, Pratt School of Engineering, Duke University, Durham, NC, USA.
- 2012-2013: Visiting Research Scholar, Department of Mathematics, University of Utah, Salt Lake City, UT, USA.
- 2008-2009: Visiting Research Scholar, Department of Mechanical Engineering and Materials Science, Duke University, Durham, NC, USA.
- 2000-2008: Research Staff Member, Department of Physics, NRCN, Israel.
- August 1995-August 1997 and July 1998-June 1999: Visiting Member at the Courant Institute of Mathematical Sciences, New York University.
- September 1997-June 1998: Research associate at the Levich Institute, City College of CUNY, New York.
- 1991-1995: Teaching and research assistant, School of Physics and Astronomy, Tel-Aviv University (Advanced Electromagnetism, for first and second year graduate students, and Statistical Physics for second year physics undergraduates).
- 1985-1990: Israel Defense Forces, technical project officer.

Awards and Scholarships

- The Paul Wiederman distinction award for PhD students, Tel-Aviv University, 1992.
- The Moshe Gilboa doctoral research award, Wolf Foundation, Israel, 1995.
- Fulbright scholarship for postdoctoral research. Offered in March 1995. (Declined for personal reasons).
- Katzir scholarship, NRCN, 2000-2006.

Review of scientific publications

- Papers reviewed for: Applied Physics Letters, Computational Materials Science, Calphad, Europhysics Letters, Journal of Applied Physics, Journal of Physics: Condensed Matter, Journal of Physics D: Applied Physics, Langmuir, Nature Communications, Nature Materials, New Journal of Physics, Physica B, Physica Status Solidi, Physica Scripta, Physical Review B, Physical Review Letters, Physical Review Materials, Scripta Materialia, SIAM Journal on Applied Mathematics, Solid State Communications.
- Us-Israel Binational Science Foundation, research proposal review, 2008.
- Book review - *Fractal river basins: chance and self-organization*, Physics Today, July 1998.
- Faculty opponent of a doctoral dissertation, Department of Physics, Royal Institute of Technology, Stockholm, Sweden. June 1997.

Publications (Since 2010)

1. O. Levy, R.V. Chepulskii, G.L.W. Hart, and S. Curtarolo, *The new face of rhodium alloys: revealing ordered structures from first principles*, J. Am. Chem. Soc. **132**, 833 (2010).
2. O. Levy, G.L.W. Hart, and S. Curtarolo, *Hafnium binary alloys from experiments and first principles*, Acta Mater. **58**, 2887 (2010).
3. O. Levy, G.L.W. Hart, and S. Curtarolo, *Uncovering compounds by synergy of cluster expansion and high-throughput methods*, J. Am. Chem. Soc. **132**, 4830 (2010).
4. O. Levy, G.L.W. Hart, and S. Curtarolo, *Structure maps for hcp metals from first principles calculations*, Phys. Rev. B **81**, 174106 (2010).
*Selected as an Editor Suggestion.
5. O. Levy, M. Jahnàtek, R.V. Chepulskii, G.L.W. Hart, and S. Curtarolo, *Ordered structures in rhenium binary alloys from first-principles calculations*, J. Am. Chem. Soc. **133**, 158 (2011).
6. M. Jahnàtek, O. Levy, G.L.W. Hart, R.V. Chepulskii, J. Xue and S. Curtarolo, *Ordered phases in ruthenium binary alloys from high-throughput first-principles calculations*, Phys. Rev. B **84**, 214110 (2011).
7. O. Levy, J. Xue, S. Wang, G.L.W. Hart, and S. Curtarolo, *Stable ordered structures of technetium alloys from first-principles*, Phys. Rev. B **85**, 012201 (2012).
8. S. Curtarolo, W. Setyawan, G.L.W. Hart, M. Jahnatek, R.V. Chepulskii, R.H. Taylor, S. Wang, J. Xue, K. Yang, O. Levy, M.J. Mehl, H.T. Stokes, D.O. Demchenko, D. Morgan, *AFLOW: An automatic framework for high-throughput materials discovery*, Computational Materials Science **58**, 218 (2012).
9. S. Curtarolo, W. Setyawan, S. Wang, J. Xue, K. Yang, R.H. Taylor, L.J. Nelson, G.L.W. Hart, S. Sanvito, M. Buongiorno-Nardelli, N. Mingo and O. Levy,

- AFLOWLIB.ORG: A distributed materials properties repository from high-throughput ab initio calculations*. Computational Materials Science **58**, 227 (2012).
10. J. Bloch, O. Levy, B. Pejova, J. Jacob, S. Curtarolo and B. Hjörvarsson, *Prediction and Hydrogen Acceleration of Ordering in Iron-Vanadium Alloys*, Phys. Rev. Lett. **108**, 215503 (2012).
 11. S. Curtarolo, G.L.W. Hart, M.B. Nardelli, N. Mingo, S. Sanvito and O. Levy, *The high-throughput highway to computational materials design*, Nature Mater. **12**, 191–201 (2013).
*Accompanied by an Editorial, *Fuelling discovery by sharing*, Nature Mater. **12**, 173 (2013).
 12. O. Levy and E. Cherkaev, *Effective medium approximations for anisotropic composites with arbitrary component orientation*, J. Appl. Phys. **114**, 164102 (2013).
 13. G.L.W. Hart, S. Curtarolo, T.B. Massalski and O. Levy, *Comprehensive search for new phases and compounds in binary alloy systems based on platinum-group metals, using a computational first-principles approach*, Phys. Rev. X **3**, 041035 (2013).
*Accompanied by a Viewpoint: *Computational materials discovery goes platinum*, Physics **6**, 140 (2013).
+ Highlighted in *Spotlight on Materials*, a collection of materials research published in APS journals over the past decade, Physics, June 19, 2017.
 14. R.H. Taylor, F. Rose, C. Toher, O. Levy, M.B. Nardelli, S. Curtarolo, *A RESTful API for exchanging materials data in the AFLOWLIB.org consortium*, Computational Materials Science **93**, 178 (2014).
 15. C. Toher, J.J. Plata, O. Levy, M. de Jong, M.B. Nardelli, S. Curtarolo, *High-throughput computational screening of thermal conductivity, Debye temperature, and Gruneisen parameter using a quasiharmonic Debye model*, Phys. Rev. B **90**, 174107 (2014).
 16. U. Argaman, E. Eidelstein, O. Levy, G. Makov, *Thermodynamic properties of titanium from ab initio calculations*, Mater. Res. Express **2**, 016505 (2015).
 17. C.E. Calderon, J.J. Plata, C. Toher, C. Oses, O. Levy, M. Fornari, A. Natan, M.J. Mehl, G.L.W. Hart, M. Buongiorno Nardelli, S. Curtarolo, *The AFLOW Standard for High-Throughput Materials Science Calculations*, Computational Materials Science, **108**, 233 (2015).
*Selected as an Editor's Choice.
 18. E. Perim, D. Lee, Y. Liu, C. Toher, P. Gong, Y. Li, W. N. Simmons, O. Levy, J. Vlassak, J. Schroers, and S. Curtarolo, *Spectral descriptors for bulk metallic glasses based on the thermodynamics of competing crystalline phases*, Nature Communications **7**, 12315 (2016).
 19. S. Barzilai, C. Toher, S. Curtarolo, O. Levy, *Evaluation of the Tantalum-Titanium phase diagram from ab-initio calculations*, Acta Mater. **120**, 255 (2016).
 20. U. Argaman, E. Eidelstein, O. Levy, G. Makov, *Ab initio study of the phononic origin of negative thermal expansion*, Phys. Rev. B, **94**, 174305 (2016).
 21. C. Toher, C. Oses, J.J. Plata, D. Hicks, F. Rose, O. Levy, M. de Jong, M. Asta, M. Fornari, M.B. Nardelli and S. Curtarolo, *Combining the AFLOW GIBBS and elastic libraries to efficiently and robustly screen thermomechanical properties of solids*, Phys. Rev. Materials **1**, 015401 (2017).
 22. S. Barzilai, C. Toher, S. Curtarolo, O. Levy, *The molybdenum-titanium phase diagram evaluated from ab initio calculations*, Phys. Rev. Materials, **1**, 023604 (2017).
*Selected as an Editor's Choice.

23. S. Barzilai, C. Toher, S. Curtarolo, O. Levy, *The effect of lattice stability determination on the computational phase diagrams of intermetallic alloys*, *J. Alloys Compounds*, **728**, 314-321 (2017).
24. A. Hever, C. Oses, S. Curtarolo, O. Levy and A. Natan, *The structure and composition statistics of 6A binary and ternary crystalline materials*, *Inorg. Chem.* **57**, 653-667 (2018).
25. D. Hicks, C. Oses, E. Gossett, G. Gomez, R. H. Taylor, C. Toher, M. J. Mehl, O. Levy and S. Curtarolo, *AFLOW-SYM: platform for the complete, automatic and self-consistent symmetry analysis of crystals*, *Acta Cryst. A* **74**, 184–203 (2018).
26. C. Oses, E. Gossett, D. Hicks, F. Rose, M. J. Mehl, E. Perim, I. Takeuchi, S. Sanvito, M. Scheffler, Y. Lederer, O. Levy, C. Toher, S. Curtarolo, *AFLOW-CHULL: Cloud-Oriented Platform for Autonomous Phase Stability Analysis*, *Journal of Chemical Information and Modeling* **58**, 2477-2490 (2018).
27. E. Eidelstein, S. Barzilai, S. Curtarolo, and O. Levy, *First principles investigation of cold curves of metals*, *Isr. J. Chem.* submitted (2019).

Special Volumes

28. M. J. Mehl, D. Hicks, C. Toher, O. Levy, R. M. Hanson, G. Hart, S. Curtarolo, *The AFLOW Library of Crystallographic Prototypes: Part 1*, *Computational Materials Science*, **136**, S1–S828 (2017).
29. D. Hicks, M. J. Mehl, E. Gossett, C. Toher, O. Levy, R. M. Hanson, G. Hart, S. Curtarolo, *The AFLOW Library of Crystallographic Prototypes: Part 2*, *Computational Materials Science*, **161**, S1-S1011 (2019).

Book Chapter

30. Toher C. et al. (2018) *The AFLOW Fleet for Materials Discovery*. In: Andreoni W., Yip S. (eds.) *Handbook of Materials Modeling*. (Springer Nature Switzerland AG, Cham, Switzerland, 2018). http://dx.doi.org/10.1007/978-3-319-42913-7_63-1