

Ido Hadar - Curriculum Vitae

Current Position:

2020-Present – Senior Lecturer of Chemistry – Institute of Chemistry, The Center for Nanoscience and Nanotechnology, and Casali Institute for Applied Chemistry, The Hebrew University of Jerusalem, Israel

Research Objectives: Research and development of novel soft-semiconductors for energy conversion, light emission, and X-ray detection

- Research of novel soft-semiconductor materials and development of functional devices based upon them
- Study fundamental processes and basic properties of functional materials – optical and electrical spectroscopy and microscopy
- Development of composite semiconductors and devices based upon them

Education:

- **2016-2020** – Post-doctoral scholar – Prof. Mercouri Kanatzidis Lab, Department of Chemistry, Northwestern University (Evanston, IL, USA)
- **2011-2016** – Ph.D. – Physical Chemistry – "Dimensionality Effects in Semiconductor Nanorods – Optical Study from Single Particles to Ensemble" – under the supervision of Prof. Uri Banin, The Hebrew University of Jerusalem (IL)
- **2010-2011** – M.Sc. (within the direct Ph.D. track) – Exact Science, The Hebrew University of Jerusalem (IL)
- **2006-2009** – B.Sc. – Exact Science (Physics and Chemistry), The Hebrew University of Jerusalem (IL)

Teaching Experience:

- **2020-Present** – The Hebrew University of Jerusalem, Lecturer – General Chemistry, Physical Chemistry, Physical Chemistry Lab
- **2013-2016** – The Hebrew University of Jerusalem, Teaching assistant – Physical Chemistry of Nano Materials – Advanced course for graduate and undergraduate students
- **2013-2015** – The Hebrew University of Jerusalem, Lab instructor and coordinator – Physical Chemistry lab – Managing students and instructors and coordinating lab resources
- **2011-2012** – The Hebrew University of Jerusalem, Teaching assistant – Physical Chemistry for Biology students – Developing and implementing online course tasks

Work Experience:

- **2014-2020** – Apollo Power (formerly Solar Paint) – Israeli solar energy startup – Founder and Scientific advisor
- **2008-2011** – Pangea tools Ltd. (currently owned by Houghton Mifflin Harcourt) – Algorithms developer and Scientific advisor, developing scientific models (physics, chemistry, biology) for computer-based inquiry learning for school students
- **2006-2008** – Lachman group – Teaching preparation course towards the psychometric exam
- **2001-2005** – Mandatory military duty (2005-Present – reserve duty), Armored Corps, Officer (Major)
- **2000-2001** – Pre-military voluntary civil Service year – Working in a boarding school for at-risk youth

Service:

- Chair of organizing committee for The Hebrew University Center for Nanoscience and Nanotechnology annual conference.
- Executive member at the Northwestern University Postdoctoral association
- Mentoring – 3 MSc. Students, 2 Engineering Projects, and 6 undergraduate students
- Journal Refereeing – Nano Letters, ACS Nano, ACS Energy Letters, Journal of Physical Chemistry, Advanced Materials, Advanced Energy Materials, Advanced Functional Materials, Nature Communications, Science Advances

Honors and Awards

- **2020** – Prime Minister's Prize for Global Innovation in Smart Mobility and Alternative Fuels for Researcher Recruitment (\$200K)
- **2016-2018** – Israeli Ministry of Energy Post-doctoral grant - training of academic personnel in energy-related fields at leading international institutions (\$100K)
- **2016** – Prize for Excellent Student, The Center for Nanoscience and Nanotechnology, The Hebrew University of Jerusalem

Research Grants

- **2022** – Israeli Ministry of Energy, Academia Grant. Budget 675,000 NIS (\$195K), 3/2023-3/2026
- **2021** – ZCAI/HUJI Scientific Projects – Collaborators – Dr. Guohua Jia (Curtin University), Prof. Zongyou Yin (Australian National University, Canberra). Budget – 300,000 AUD (\$210K), 3/2022-3/2024.

Research Skills:

- **Device fabrication and characterization**
 - **Device fabrication** – Utilizing various deposition methods such as solution process, physical and chemical depositions of various photovoltaic materials
 - **Device characterization** – electrical and optical spectroscopy of functional devices
- **Microscopy**
 - **Electron microscopy** – Scanning and transmission electron microscopy and electron beam induced deposition
 - **Optical microscopy** – Single particle microscopy, fluorescence – far field and confocal, time-resolved, polarization and localization microscopy
 - **Scanning Probe Microscopy** – topographic and force imaging, correlation between AFM and optical imaging
 - **Apertureless Near-Field Scanning Optical Microscopy** – based on quenching/enhancement interactions between nanometric tip of atomic force microscope and single emitters to achieve sub-wavelength optical resolution (below 20nm)
- **Optical Spectroscopy** – Ensemble and single-molecule fluorescence spectroscopy including photoluminescence, photoluminescence-excitation, and anisotropy in steady state and time-resolved schemes
- **Electron Spectroscopy**
 - **Photoemission Yield Spectroscopy in Air (PYSA)** – Method to study the electronic properties of compounds and devices under ambient conditions
 - **X-ray and UV photoemission spectroscopy (XPS / UPS)** – Study chemical and electronic properties of functional compounds
 - **Kelvin Probe microscopy and spectroscopy** – Electrical characterization of devices with and without illumination
- **Synthesis**
 - **Colloidal nanocrystals** – growth of semiconductor nanorods and QDs (CdS, CdSe, CdTe). Synthesis of colloidal perovskite platelets and QDs
 - **Perovskites** – Growth of 3D and 2D perovskites and additional reduced dimensionality perovskite derivatives
 - **Solid-state synthesis** – All-inorganic perovskites
- **Computer programs** – Utilization of various computer programs for measurement control and data analysis including - LabVIEW, Matlab, C++, FORTRAN, Origin

Additional Experience and Volunteering:

- **2010-2015** – "Etgarim" Tandem cycling team for people with and without disabilities
- **2005-2006** – Volunteer with children in "Spivak center" - sport center for kids with disabilities
- **2001-2005** – Mandatory military duty (2005-2022 – reserve duty), Armored Corps, Officer (Major)
- **2000-2001** – Pre-military voluntary civil Service year – Working with adolescent youth that dropped out of all other educational frameworks

Publications:

- (1) Bai, B.; Zhang, C.; Dou, Y.; Kong, L.; Wang, L.; Wang, S.; Li, J.; Zhou, Y.; Liu, L.; Liu, B.; Zhang, X.; **Hadar, I.**; Bekenstein, Y.; Wang, A.; Yin, Z.; Turyanska, L.; Feldmann, J.; Yang, X.; Jia, G. (2023). Atomically Flat Semiconductor Nanoplatelets for Light-Emitting Applications. *Chem. Soc. Rev.* 52 (1), 318–360. Journal Impact Factor: 60.615 ; Journal Ranking: CHEMISTRY, MULTIDISCIPLINARY - 2 of 179 (Q1) ; Times Cited: 0.
- (2) He, Y.; **Hadar, I.**; Kanatzidis, M. G. (2022). Detecting Ionizing Radiation Using Halide Perovskite Semiconductors Processed through Solution and Alternative Methods. *Nat. Photonics* 16 (1), 14–26. Journal Impact Factor: 39.728 ; Journal Ranking: OPTICS - 1 of 101 (Q1), PHYSICS, APPLIED - 2 of 161 (Q1) ; Times Cited: 27.
- (3) He, Y.; **Hadar, I.**; De Siena, M. C.; Klepov, V. V.; Pan, L.; Chung, D. Y.; Kanatzidis, M. G. (2022). Sensitivity and Detection Limit of Spectroscopic-Grade Perovskite CsPbBr₃ Crystal for Hard X-Ray Detection. *Adv. Funct. Mater.* 2112925. Journal Impact Factor: 19.924 ; Journal Ranking: CHEMISTRY, MULTIDISCIPLINARY - 10 of 179 (Q1), CHEMISTRY, PHYSICAL - 10 of 165 (Q1), MATERIALS SCIENCE, MULTIDISCIPLINARY - 17 of 345 (Q1), NANOSCIENCE & NANOTECHNOLOGY - 8 of 109 (Q1), PHYSICS, APPLIED - 8 of 161 (Q1), PHYSICS, CONDENSED MATTER - 6 of 69 (Q1) ; Times Cited: 5.
- (4) Hoffman, J. M.; **Hadar, I.**; Li, X.; Ke, W.; Vasileiadou, E. S.; Strzalka, J.; Chen, L. X.; Kanatzidis, M. G. (2022). Film Formation Mechanisms in Mixed-Dimensional 2D/3D Halide Perovskite Films Revealed by in Situ Grazing-Incidence Wide-Angle X-Ray Scattering. *Chem* 8 (4), 1067–1082. Journal Impact Factor: 25.832 ; Journal Ranking: CHEMISTRY, MULTIDISCIPLINARY - 6 of 179 (Q1) ; Times Cited: 3.
- (5) He, Y.; Petryk, M.; Liu, Z.; Chica, D. G.; **Hadar, I.**; Leak, C.; Ke, W.; Spanopoulos, I.; Lin, W.; Chung, D. Y.; et al. (2021). CsPbBr₃ Perovskite Detectors with 1.4% Energy Resolution for High-Energy γ -Rays. *Nat. Photonics* 15 (1), 36–42. Journal Impact Factor: 39.728 ; Journal Ranking: OPTICS - 1 of 101 (Q1), PHYSICS, APPLIED - 2 of 161 (Q1) ; Times Cited: 91.
- (6) Spanopoulos, I.; **Hadar, I.**; Ke, W.; Guo, P.; Mozur, E. M.; Morgan, E.; Wang, S.; Zheng, D.; Padgaonkar, S.; Reddy, G. N. M.; et al. (2021). Tunable Broad Light Emission from 3D "Hollow" Bromide Perovskites through Defect Engineering. *J. Am. Chem. Soc.* 143 (18), 7069–7080. Journal Impact Factor: 16.383 ; Journal Ranking: CHEMISTRY, MULTIDISCIPLINARY - 16 of 179 (Q1) ; Times Cited: 20.
- (7) Lin, W.; He, J.; McCall, K. M.; Stoumpos, C. C.; Liu, Z.; **Hadar, I.**; Das, S.; Wang, H.; Wang, B.; Chung, D. Y.; et al. (2021). Inorganic Halide Perovskitoid TIPbI₃ for Ionizing Radiation Detection. *Adv. Funct. Mater.* 2006635. Journal Impact Factor: 19.924 ; Journal Ranking: CHEMISTRY, MULTIDISCIPLINARY - 10 of 179 (Q1), CHEMISTRY, PHYSICAL - 10 of 165 (Q1), MATERIALS SCIENCE, MULTIDISCIPLINARY - 17 of 345 (Q1), NANOSCIENCE & NANOTECHNOLOGY - 8 of 109 (Q1), PHYSICS, APPLIED - 8 of 161 (Q1), PHYSICS, CONDENSED MATTER - 6 of 69 (Q1) ; Times Cited: 9.
- (8) He, Y.; Stoumpos, C. C.; **Hadar, I.**; Luo, Z.; McCall, K. M.; Liu, Z.; Chung, D. Y.; Wessels, B. W.; Kanatzidis, M. G. (2021). Demonstration of Energy-Resolved γ -Ray Detection at Room Temperature by the CsPbCl₃ Perovskite Semiconductor. *J. Am. Chem. Soc.* 143 (4), 2068–2077. Journal Impact Factor: 16.383 ; Journal Ranking: CHEMISTRY, MULTIDISCIPLINARY - 16 of 179 (Q1) ; Times Cited: 24.
- (9) Vasileiadou, E. S.; Wang, B.; Spanopoulos, I.; **Hadar, I.**; Navrotsky, A.; Kanatzidis, M. G. (2021). Insight on the Stability of Thick Layers in 2D Ruddlesden–Popper and Dion–Jacobson Lead Iodide Perovskites. *J. Am. Chem. Soc.* 143 (6), 2523–2536. Journal Impact Factor: 16.383 ; Journal Ranking: CHEMISTRY, MULTIDISCIPLINARY - 16 of 179 (Q1) ; Times Cited: 40.

- (10) Vasileiadou, E. S.; **Hadar, I.**; Kepenekian, M.; Even, J.; Tu, Q.; Malliakas, C. D.; Friedrich, D.; Spanopoulos, I.; Hoffman, J. M.; Dravid, V. P.; et al. (2021). Shedding Light on the Stability and Structure–Property Relationships of Two-Dimensional Hybrid Lead Bromide Perovskites. *Chem. Mater.* **33** (13), 5085–5107. Journal Impact Factor: 10.508 ; Journal Ranking: CHEMISTRY, PHYSICAL - 31 of 165 (Q1), MATERIALS SCIENCE, MULTIDISCIPLINARY - 48 of 345 (Q1) ; Times Cited: 11.
- (11) Sidhik, S.; Wang, Y.; Li, W.; Zhang, H.; Zhong, X.; Agrawal, A.; **Hadar, I.**; Spanopoulos, I.; Mishra, A.; Traoré, B.; et al. (2021). High-Phase Purity Two-Dimensional Perovskites with 17.3% Efficiency Enabled by Interface Engineering of Hole Transport Layer. *Cell Reports Phys. Sci.* 100601. Journal Impact Factor: 7.832 ; Journal Ranking: CHEMISTRY, MULTIDISCIPLINARY - 39 of 179 (Q1), ENERGY & FUELS - 30 of 119 (Q2), MATERIALS SCIENCE, MULTIDISCIPLINARY - 74 of 345 (Q1), PHYSICS, MULTIDISCIPLINARY - 10 of 86 (Q1) ; Times Cited: 6.
- (12) Spanopoulos, I.; **Hadar, I.**; Ke, W.; Guo, P.; Sidhik, S.; Kepenekian, M.; Even, J.; Mohite, A. D.; Schaller, R. D.; Kanatzidis, M. G. (2020). Water Stable 1D Hybrid Tin(II) Iodide Emits Broad Light with 36% Photoluminescence Quantum Efficiency. *J. Am. Chem. Soc.* **142** (19), 9028-9038. Journal Impact Factor: 16.383 ; Journal Ranking: CHEMISTRY, MULTIDISCIPLINARY - 16 of 179 (Q1) ; Times Cited: 37.
- (13) Li, X.; Fu, Y.; Pedesseau, L.; Guo, P.; Cuthriell, S.; **Hadar, I.**; Even, J.; Katan, C.; Stoumpos, C. C.; Schaller, R. D.; et al. (2020). Negative Pressure Engineering with Large Cage Cations in 2D Halide Perovskites Causes Lattice Softening. *J. Am. Chem. Soc.* **142** (26), 11486-11496. Journal Impact Factor: 16.383 ; Journal Ranking: CHEMISTRY, MULTIDISCIPLINARY - 16 of 179 (Q1) ; Times Cited: 54.
- (14) Hoffman, J. M.; Strzalka, J.; Flanders, N. C.; **Hadar, I.**; Cuthriell, S. A.; Zhang, Q.; Schaller, R. D.; Dichtel, W. R.; Chen, L. X.; Kanatzidis, M. G. (2020). In Situ Grazing-Incidence Wide-Angle Scattering Reveals Mechanisms for Phase Distribution and Disorientation in 2D Halide Perovskite Films. *Adv. Mater.* **32** (33), 2002812. Journal Impact Factor: 32.086 ; Journal Ranking: CHEMISTRY, MULTIDISCIPLINARY - 5 of 179 (Q1), CHEMISTRY, PHYSICAL - 4 of 165 (Q1), MATERIALS SCIENCE, MULTIDISCIPLINARY - 8 of 345 (Q1), NANOSCIENCE & NANOTECHNOLOGY - 3 of 109 (Q1), PHYSICS, APPLIED - 5 of 161 (Q1), PHYSICS, CONDENSED MATTER - 2 of 69 (Q1) ; Times Cited: 53.
- (15) Ke, W.; Chen, C.; Spanopoulos, I.; Mao, L.; **Hadar, I.**; Li, X.; Hoffman, J. M.; Song, Z.; Yan, Y.; Kanatzidis, M. G. (2020). Narrow-Bandgap Mixed Lead/Tin-Based 2D Dion-Jacobson Perovskites Boost the Performance of Solar Cells. *J. Am. Chem. Soc.* **142** (35), 15049–15057. Journal Impact Factor: 16.383 ; Journal Ranking: CHEMISTRY, MULTIDISCIPLINARY - 16 of 179 (Q1) ; Times Cited: 65.
- (16) Hoffman, J.; Malliakas, C. D.; Sidhik, S.; **Hadar, I.**; McClain, R.; Mohite, A. D.; Kanatzidis, M. G. (2020). Long Periodic Ripple in a 2D Hybrid Halide Perovskite Structure Using Branched Organic Spacers. *Chem. Sci.* **11** (44), 12139-12148. Journal Impact Factor: 9.969 ; Journal Ranking: CHEMISTRY, MULTIDISCIPLINARY - 25 of 179 (Q1) ; Times Cited: 15.
- (17) Khoury, J. F.; He, J.; Pfluger, J. E.; **Hadar, I.**; Balasubramanian, M.; Stoumpos, C. C.; Zu, R.; Gopalan, V.; Wolverton, C.; Kanatzidis, M. G. (2020). $\text{Ir}_6\text{In}_{32}\text{S}_{21}$, a Polar, Metal-Rich Semiconducting Subchalcogenide. *Chem. Sci.* **11** (3), 870–878. Journal Impact Factor: 9.969 ; Journal Ranking: CHEMISTRY, MULTIDISCIPLINARY - 25 of 179 (Q1) ; Times Cited: 7.
- (18) Cai, S.; Hao, S.; Luo, Z.-Z.; Li, X.; **Hadar, I.**; Bailey, T. P.; Hu, X.; Uher, C.; Hu, Y.-Y.; Wolverton, C.; et al. (2020). Discordant Nature of Cd in PbSe: Off-Centering and Core–Shell Nanoscale CdSe Precipitates Lead to High Thermoelectric Performance. *Energy Environ. Sci.* **13** (1), 200–211. Journal Impact Factor: 39.714 ; Journal Ranking: CHEMISTRY, MULTIDISCIPLINARY - 3 of 179 (Q1), ENERGY & FUELS - 3 of 119 (Q1), ENGINEERING, CHEMICAL - 1 of 143 (Q1), ENVIRONMENTAL SCIENCES - 1 of 279 (Q1) ; Times Cited: 36
- (19) Luo, Y.; Cai, S.; Hao, S.; Pielnhofer, F.; **Hadar, I.**; Luo, Z.-Z.; Xu, J.; Wolverton, C.; Dravid, V. P.; Pfitzner, A.; et al. (2020). High-Performance Thermoelectrics from Cellular Nanostructured $\text{Sb}_2\text{Si}_2\text{Te}_6$. *Joule* **4** (1), 159–175. Journal Impact Factor: 46.048 ; Journal Ranking: CHEMISTRY, PHYSICAL - 2 of 165 (Q1), ENERGY & FUELS - 2 of 119 (Q1), MATERIALS SCIENCE, MULTIDISCIPLINARY - 5 of 345 (Q1) ; Times Cited: 70.

- (20) **Hadar, I.**; Hu, X.; Luo, Z.-Z.; Dravid, V. P.; Kanatzidis, M. G. (2019). Nonlinear Band Gap Tunability in Selenium–Tellurium Alloys and Its Utilization in Solar Cells. *ACS Energy Lett.* **4** (9), 2137–2143. Journal Impact Factor: 23.991 ; Journal Ranking: CHEMISTRY, PHYSICAL - 7 of 165 (Q1), ELECTROCHEMISTRY - 2 of 30 (Q1), MATERIALS SCIENCE, MULTIDISCIPLINARY - 12 of 345 (Q1), NANOSCIENCE & NANOTECHNOLOGY - 4 of 109 (Q1) ; Times Cited: 23.
- (21) **Hadar, I.**; Song, T. Bin; Ke, W.; Kanatzidis, M. G. (2019). Modern Processing and Insights on Selenium Solar Cells: The World's First Photovoltaic Device. *Adv. Energy Mater.* **1802766**. Journal Impact Factor: 29.698 ; Journal Ranking: CHEMISTRY, PHYSICAL - 5 of 165 (Q1), ENERGY & FUELS - 5 of 119 (Q1), MATERIALS SCIENCE, MULTIDISCIPLINARY - 9 of 345 (Q1), PHYSICS, APPLIED - 6 of 161 (Q1), PHYSICS, CONDENSED MATTER - 3 of 69 (Q1) ; Times Cited: 35.
- (22) Williamson, C. B.; Nevers, D. R.; Nelson, A.; **Hadar, I.**; Banin, U.; Hanrath, T.; Robinson, R. D. (2019). Chemically Reversible Isomerization of Inorganic Clusters. *Science (80-.)*. **363** (6428), 731–735. Journal Impact Factor: 63.832 ; Journal Ranking: MULTIDISCIPLINARY SCIENCES - 2 of 74 (Q1) ; Times Cited: 41.
- (23) Spanopoulos, I.; **Hadar, I.**; Ke, W.; Tu, Q.; Chen, M.; Tsai, H.; He, Y.; Shekhawat, G.; Dravid, V. P.; Wasielewski, M. R.; et al. (2019). Uniaxial Expansion of the 2D Ruddlesden-Popper Perovskite Family for Improved Environmental Stability. *J. Am. Chem. Soc.* **141** (13), 5518–5534. Journal Impact Factor: 16.383 ; Journal Ranking: CHEMISTRY, MULTIDISCIPLINARY - 16 of 179 (Q1) ; Times Cited: 134.
- (24) Ke, W.; Spanopoulos, I.; Tu, Q.; **Hadar, I.**; Li, X.; Shekhawat, G. S.; Dravid, V. P.; Kanatzidis, M. G. (2019). Ethylenediammonium-Based “Hollow” Pb/Sn Perovskites with Ideal Band Gap Yield Solar Cells with Higher Efficiency and Stability. *J. Am. Chem. Soc.* **141** (21), 8627–8637. Journal Impact Factor: 16.383 ; Journal Ranking: CHEMISTRY, MULTIDISCIPLINARY - 16 of 179 (Q1) ; Times Cited: 73.
- (25) Li, X.; Guo, P.; Kepenekian, M.; **Hadar, I.**; Katan, C.; Even, J.; Stoumpos, C. C.; Schaller, R. D.; Kanatzidis, M. G. (2019). Small Cyclic Diammonium Cation Templated (110)-Oriented 2D Halide (X = I, Br, Cl) Perovskites with White-Light Emission. *Chem. Mater.* **31** (9), 3582–3590. Journal Impact Factor: 10.508 ; Journal Ranking: CHEMISTRY, PHYSICAL - 31 of 165 (Q1), MATERIALS SCIENCE, MULTIDISCIPLINARY - 48 of 345 (Q1) ; Times Cited: 68.
- (26) Tan, G.; Hao, S.; Cai, S.; Bailey, T. P.; Luo, Z.; **Hadar, I.**; Uher, C.; Dravid, V. P.; Wolverton, C.; Kanatzidis, M. G. (2019). All-Scale Hierarchically Structured p-Type PbSe Alloys with High Thermoelectric Performance Enabled by Improved Band Degeneracy. *J. Am. Chem. Soc.* **141** (10), 4480–4486. Journal Impact Factor: 16.383 ; Journal Ranking: CHEMISTRY, MULTIDISCIPLINARY - 16 of 179 (Q1) ; Times Cited: 62.
- (27) He, Y.; Alexander, G. C. B.; Das, S.; Liu, Z.; **Hadar, I.**; McCall, K. M.; Lin, W.; Xu, Y.; Chung, D. Y.; Wessels, B. W.; et al. (2019). Controlling the Vapor Transport Crystal Growth of Hg₃Se₂I₂ Hard Radiation Detector Using Organic Polymer. *Cryst. Growth Des.* **19** (4), 2074–2080. Journal Impact Factor: 4.01 ; Journal Ranking: CHEMISTRY, MULTIDISCIPLINARY - 76 of 179 (Q2), CRYSTALLOGRAPHY - 5 of 26 (Q1), MATERIALS SCIENCE, MULTIDISCIPLINARY - 155 of 345 (Q2) ; Times Cited: 3.
- (28) Hoffman, J. M.; Che, X.; Sidhik, S.; Li, X.; **Hadar, I.**; Blancon, J.-C.; Yamaguchi, H.; Kepenekian, M.; Katan, C.; Even, J.; et al. (2019). From 2D to 1D Electronic Dimensionality in Halide Perovskites with Stepped and Flat Layers Using Propylammonium as a Spacer. *J. Am. Chem. Soc.* **141** (27), 10661–10676. Journal Impact Factor: 16.383 ; Journal Ranking: CHEMISTRY, MULTIDISCIPLINARY - 16 of 179 (Q1) ; Times Cited: 42.
- (29) Lin, W.; Liu, Z.; Stoumpos, C. C.; Das, S.; He, Y.; **Hadar, I.**; Peters, J. A.; McCall, K. M.; Xu, Y.; Chung, D. Y.; et al. (2019). Purification and Improved Nuclear Radiation Detection of Tl₆Si₄ Semiconductor. *Cryst. Growth Des.* **19** (8), 4738–4744. Journal Impact Factor: 4.01 ; Journal Ranking: CHEMISTRY, MULTIDISCIPLINARY - 76 of 179 (Q2), CRYSTALLOGRAPHY - 5 of 26 (Q1), MATERIALS SCIENCE, MULTIDISCIPLINARY - 155 of 345 (Q2) ; Times Cited: 1.

- (30) Gao, L.; Spanopoulos, I.; Ke, W.; Huang, S.; **Hadar, I.**; Chen, L.; Li, X.; Yang, G.; Kanatzidis, M. G. (2019). Improved Environmental Stability and Solar Cell Efficiency of (MA,FA)PbI₃ Perovskite Using a Wide-Band-Gap 1D Thiazolium Lead Iodide Capping Layer Strategy. *ACS Energy Lett.* 4 (7), 1763–1769. Journal Impact Factor: 23.991 ; Journal Ranking: CHEMISTRY, PHYSICAL - 7 of 165 (Q1), ELECTROCHEMISTRY - 2 of 30 (Q1), MATERIALS SCIENCE, MULTIDISCIPLINARY - 12 of 345 (Q1), NANOSCIENCE & NANOTECHNOLOGY - 4 of 109 (Q1) ; Times Cited: 79.
- (31) Li, X.; Ke, W.; Traoré, B.; Guo, P.; **Hadar, I.**; Kepenekian, M.; Even, J.; Katan, C.; Stoumpos, C. C.; Schaller, R. D.; et al. (2019). Two-Dimensional Dion–Jacobson Hybrid Lead Iodide Perovskites with Aromatic Diammonium Cations. *J. Am. Chem. Soc.* 141 (32), 12880–12890. Journal Impact Factor: 16.383 ; Journal Ranking: CHEMISTRY, MULTIDISCIPLINARY - 16 of 179 (Q1) ; Times Cited: 160.
- (32) Slade, T. J.; Bailey, T. P.; Grovogui, J. A.; Hua, X.; Zhang, X.; Kuo, J. J.; **Hadar, I.**; Snyder, G. J.; Wolverton, C.; Dravid, V. P.; et al. (2019). High Thermoelectric Performance in PbSe–NaSbSe₂ Alloys from Valence Band Convergence and Low Thermal Conductivity. *Adv. Energy Mater.* 1901377. Journal Impact Factor: 29.698 ; Journal Ranking: CHEMISTRY, PHYSICAL - 5 of 165 (Q1), ENERGY & FUELS - 5 of 119 (Q1), MATERIALS SCIENCE, MULTIDISCIPLINARY - 9 of 345 (Q1), PHYSICS, APPLIED - 6 of 161 (Q1), PHYSICS, CONDENSED MATTER - 3 of 69 (Q1) ; Times Cited: 39.
- (33) Xu, Y.; Jiao, B.; Song, T.-B.; Stoumpos, C. C.; He, Y.; **Hadar, I.**; Lin, W.; Jie, W.; Kanatzidis, M. G. (2019). Zero-Dimensional Cs₂Tel₆ Perovskite: Solution-Processed Thick Films with High X-Ray Sensitivity. *ACS Photonics* 6 (1), 196–203. Journal Impact Factor: 7.077 ; Journal Ranking: MATERIALS SCIENCE, MULTIDISCIPLINARY - 83 of 345 (Q1), NANOSCIENCE & NANOTECHNOLOGY - 39 of 109 (Q2), OPTICS - 13 of 101 (Q1), PHYSICS, APPLIED - 30 of 161 (Q1), PHYSICS, CONDENSED MATTER - 16 of 69 (Q1) ; Times Cited: 43.
- (34) Chen, H.; McClain, R.; He, J.; Zhang, C.; Olding, J. N.; dos Reis, R.; Bao, J.-K.; **Hadar, I.**; Spanopoulos, I.; Malliakas, C. D.; et al. (2019). Antiferromagnetic Semiconductor BaFMn_{0.5}Te with Unique Mn Ordering and Red Photoluminescence. *J. Am. Chem. Soc.* 141 (43), 17421–17430. Journal Impact Factor: 16.383 ; Journal Ranking: CHEMISTRY, MULTIDISCIPLINARY - 16 of 179 (Q1) ; Times Cited: 7.
- (35) Wang, R.; Chen, H.; Xiao, Y.; **Hadar, I.**; Bu, K.; Zhang, X.; Pan, J.; Gu, Y.; Guo, Z.; Huang, F.; et al. (2019). K_x[Bi_{4-x}Mn_xSe₆], Design of a Highly Selective Ion Exchange Material and Direct Gap 2D Semiconductor. *J. Am. Chem. Soc.* 141 (42), 16903–16914. Journal Impact Factor: 16.383 ; Journal Ranking: CHEMISTRY, MULTIDISCIPLINARY - 16 of 179 (Q1) ; Times Cited: 18.
- (36) Luo, Z.-Z.; Cai, S.; Hao, S.; Bailey, T. P.; Su, X.; Spanopoulos, I.; **Hadar, I.**; Tan, G.; Luo, Y.; Xu, J.; et al. (2019). High Figure of Merit in Gallium-Doped Nanostructured n-Type PbTe–x GeTe with Midgap States. *J. Am. Chem. Soc.* 141 (40), 16169–16177. Journal Impact Factor: 16.383 ; Journal Ranking: CHEMISTRY, MULTIDISCIPLINARY - 16 of 179 (Q1) ; Times Cited: 51.
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H-index – 32 (Web of Science)

Total number of citations – 2505 (Web of Science)

Presentations at conferences

- (1) Nano Spain 2022 Conference, Madrid, Spain – Keynote Speaker - White Light Emission from Low Dimensionality Halide Perovskites, May **2022**
- (2) EMLEM22 - Emerging Light Emitting Materials (NanoGe), Cyprus – Invited Speaker - White Light Emission from Low Dimensionality Halide Perovskites, at symposium - Aspects of Emergent Light Emitters, October **2022**
- (3) IMEC 2021 - 19th Israel Materials Engineering Conference, Jerusalem Israel – Invited Oral Presentation – Broadband Emission from Metal-Halide Perovskites – Towards Light Emitting Diodes, December **2021**
- (4) 2019 MRS Fall Meeting, Boston, MA, USA – Oral Presentation – Interplay between Broadband and Narrow Photoluminescence in 2D Ruddlesden-Popper Perovskites, December **2019**
- (5) 2019 MRS Fall Meeting, Boston, MA, USA – Poster Presentation – Modern Solar Cells Based on the World's Oldest Photovoltaic Material—Selenium and Selenium-Tellurium Alloys for Thin-Film Photovoltaic, December **2019**
- (6) Contemporary Crystal Engineering and Solid-State Chemistry symposium, Weizmann Institute of Science, Israel – Poster Presentation – Modern Solar Cells Based on the World's Oldest Photovoltaic Material—Selenium and Selenium-Tellurium Alloys for Thin-Film Photovoltaic, November **2019**
- (7) NaNaX 7, Nanoscience with Nanocrystals, Marburg, Germany – Poster Presentation – Size dependent ligand layer dynamics in semiconductor nanocrystals probed by anisotropy measurements, April **2016**
- (8) The Hebrew University of Jerusalem Nano-Center Annual Conference, Israel – Oral Presentation, Prize for Excellent Student – Size Dependent Ligand Layer Dynamics in Semiconductor Nanocrystals, April **2016**
- (9) 251st ACS National meeting, San Diego, CA, USA – Oral Presentation - Dimensionality effects at the single nanocrystal level: FRET between semiconductor nanorods and multiple dye acceptors, March **2016**
- (10) 251st ACS National meeting, San Diego, CA, USA – Oral Presentation –Size dependent ligand layer dynamics in semiconductor nanocrystals probed by anisotropy measurements, March **2016**
- (11) Nano Israel 2016, Tel Aviv, Israel – Poster Presentation – Size Dependent Ligand Layer Dynamics in Semiconductor Nanocrystals Probed by Anisotropy Measurements, February **2016**
- (12) International conference on optics of excitons in confined systems, OECS, Jerusalem, Israel – Oral Presentation - Dimensionality Effects at the Single Nanocrystal Level - FRET Between Semiconductor Nanorods and Multiple Dye Acceptors, October **2015**

- (13) Faraday Discussion "Single-Molecule Microscopy and Spectroscopy", London, UK – Poster Presentation – Dimensionality Effects on Fluorescence Resonance Energy Transfer Between Single Semiconductor Nanocrystals and Multiple Dye Acceptors, September **2015**
- (14) IVS-MRS student meeting, Tel Aviv, Israel – Oral Presentation – Dimensionality Effects on Fluorescence Resonance Energy Transfer Between Single Semiconductor Nanocrystals and Multiple Dye Acceptors, April **2015**
- (15) 80th annual meeting of the Israel Chemical Society, Tel Aviv, Israel – Poster Presentation – Dimensionality Effects on Fluorescence Resonance Energy Transfer Between Single Semiconductor Nanocrystals and Multiple Dye Acceptors, February **2015**
- (16) NaNaX 6, Nanoscience with Nanocrystals, Bad Hofgastein, Austria – Poster Presentation – Dimensionality Effects on Fluorescence Resonance Energy Transfer Between Single Semiconductor Nanocrystals and Multiple Dye Acceptors, May **2014**
- (17) Nano Israel 2014, Tel Aviv, Israel – Poster Presentation - Dimensionality Effects on Fluorescence Resonance Energy Transfer Between Single Semiconductor Nanocrystals and Multiple Dye Acceptors, March **2014**
- (18) WE-Heraeus-Seminar on "Light at the Nanotip: Scanning Near-field Optical Microscopy and Spectroscopy", Bad Honnef, Germany – Polarization Properties of Semiconductor Nanorod Heterostructures: From Single Particles to the Ensemble, August **2013**