

Hannah-Noa Barad



Birth date and citizenships: 1.2.87, Israeli, American

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Marital status: married

Education

- 2013-2017** Ph.D. Department of Chemistry, Bar Ilan University, Israel. Research topic: "Combinatorial materials science of metal oxides for renewable energy devices". Supervisor: Prof. Arie Zaban. Graduated Cum Laude, with an overall grade of 95.75.
- 2011-2013** M.Sc. Department of Chemistry, Bar Ilan University, Israel. Research topic: "Combinatorial materials science for all-oxide photovoltaics". Supervisor: Prof. Arie Zaban. Graduated Cum Laude, with an overall grade of 95.4.
- 2008-2011** B.Sc. Department of Chemistry, Bar Ilan University, Israel. Graduated Cum Laude, with an overall grade of 90.25.

Research experience

- 2022** Appointed senior lecturer (assistant professor) at the Department of Chemistry, Bar Ilan University, Israel. Heading the Multinary Materials Systems for Energy and Sustainability Lab.
- 2019-2022** Post-doctoral fellow at the Max Planck Institute for Intelligent Systems, Stuttgart, Germany.
- 2017-2018** Post-doctoral fellow and team leader at the lab of Prof. David Cahen at Bar Ilan University.

Overseas scientific collaboration experience

- Feb. 2019** Research on combinatorial methods for electrochemical measurements. Worked with Prof. Alexander Kuhn and Dr. Gerardo Salinas-Sanchez, NanoSystems for Analytics group (NsysA), Institute of Molecular Sciences, University of Bordeaux, Bordeaux, France.
- Oct. 2013** Research on the use of pulsed laser deposition for metal oxide based solar cells. Worked with Prof. Mark Huijben, Inorganic Materials Science Group (IMS), University of Twente, Enschede, the Netherlands.

Awards and distinctions

- 2020** Israel Council for Higher Education (VATAT) Scholarship for women postdoctoral researchers abroad (awarded for 2 years).
- 2019** Bar Ilan University Rector's Scholarship for women postdoctoral researchers abroad.
- 2019** Minerva Stiftung Fellowship for postdoctoral studies (awarded for two years).
- 2017** Acceptance and attendance of the 67th Lindau Nobel Laureate Meeting, Lindau, Germany.

- 2016** The BIU Institute of Nanotechnology & Advanced Materials' award for first author publication, Bar Ilan University (**received also in 2014**).
- 2015** Rieger Foundation-Marshall Tulin Fellowship for Environmental Studies (**received also in 2014**).
- 2015** Bar Ilan University Rector's award for excellence for Ph.D. chemistry studies.
- 2014** Ministry of Science 3-year scholarship for Women in Science and Engineering in memory of Shulamit Aloni (2014-2017).
- 2014** The BIU Institute of Nanotechnology & Advanced Materials' scholarship for excellence, Bar Ilan University (**received also in 2011 and 2013**).
- 2013** Four-year President's scholarship for excellent Ph.D. students, Bar Ilan University (2013-2016).
- 2012** Bar Ilan University Rector's award for excellence for M.Sc. chemistry studies.
- 2010** Yhuda Siman Tov Foundation scholarship for excellent undergraduates at Bar Ilan University.
- 2009** Bar Ilan Foundation fellowship for B.Sc. students.
- 2008** Jacob's excellence award for undergraduate students of the chemistry department, Bar Ilan University.

Publications

H-index: 16

Total number of citations: 1101

(Legend: #equal contribution)

Refereed papers in professional journals (chronological order)

1. Menny Shalom, Zion Tachan, Yaniv Bouhadana, **Hannah-Noa Barad**, and Arie Zaban; Illumination intensity-dependent electronic properties in quantum dot sensitized solar cells dot sensitized solar cells, *The Journal of Physical Chemistry Letters*, 2, 1998-2003, 2011.
2. Shay Yahav, Sven Rühle, Shlomit Greenwald, **Hannah-Noa Barad**, Menny Shalom, and Arie Zaban; Strong efficiency enhancement of dye-sensitized solar cells using a La modified TiCl_4 treatment of mesoporous TiO_2 electrodes, *The Journal of Physical Chemistry C*, 115, 21481-21486, 2011.
3. Sven Rühle, Assaf Y. Anderson, **Hannah-Noa Barad**, Benjamin Kupfer, Yaniv Bouhadana, Eli Rosh-Hodesh, and Arie Zaban; All-oxide photovoltaics, *The Journal of Physical Chemistry Letters*, 3, 3755-3764, 2012.
4. Ronen Gottesman, Shay Tirosh, **Hannah-Noa Barad**, and Arie Zaban; Direct imaging of the recombination/reduction sites in porous TiO_2 electrodes, *The Journal of Physical Chemistry Letters*, 4, 2822-2828, 2013.
5. Sven Rühle[#], **Hannah-Noa Barad**[#], Yaniv Bouhadana, David A. Keller, Adam Ginsburg, Klimenty Shimanovich, Koushik Majhi, Robert Lovrincic, Assaf Y. Anderson, and Arie Zaban; Combinatorial solar cell libraries for the investigation of different metal back contacts for TiO_2 - Cu_2O heterojunction solar cells, *Physical Chemistry Chemical Physics*, 16, 7066-7073, 2014.
6. Assaf Y. Anderson, Yaniv Bouhadana, **Hannah-Noa Barad**, Benjamin Kupfer, Eli Rosh-Hodesh, Hagit Aviv, Yaakov R. Tischler, Sven Rühle, and Arie Zaban; Quantum efficiency and bandgap analysis for

- combinatorial photovoltaics: Sorting activity of Cu-O compounds in all-oxide device libraries, ACS Combinatorial Science, 16, 53-65, 2014.
7. Michele Pavan, Sven Rühle, Adam Ginsburg, David A. Keller, **Hannah-Noa Barad**, Paolo M. Sberna, Daniela Nunes, Rodrigo Martins, Assaf Y. Anderson, Arie Zaban, and Elvira Fortunato; TiO₂/Cu₂O All-oxide heterojunction solar cells produced by spray pyrolysis, Solar Energy Materials and Solar Cells, 132, 549-556, 2015.
 8. Benjamin Kupfer, Koushik Majhi, David A. Keller, Yaniv Bouhadana, Sven Rühle, **Hannah-Noa Barad**, Assaf Y. Anderson, and Arie Zaban; Thin film Co₃O₄/TiO₂ heterojunction solar cell, Advanced Energy Materials, 5, 1, 2015.
 9. David A. Keller, Adam Ginsburg, **Hannah-Noa Barad**, Klimentiy Shimanovich, Yaniv Bouhadana, Eli Rosh-Hodesh, Ichiro Takeuchi, Hagit Aviv, Yaakov R. Tischler, Assaf Y. Anderson, and Arie Zaban; Utilizing pulsed laser deposition lateral inhomogeneity as a tool in combinatorial material science, ACS Combinatorial Science, 17 (4), 209-16, 2015.
 10. Abraham Yosipof, Oren E. Nahum, Assaf Y. Anderson, **Hannah-Noa Barad**, Arie Zaban, and Hanoch Senderowitz; Data mining and machine learning tools for combinatorial material science of all-oxide photovoltaic cells, Molecular Informatics, 34, 367-379, 2015.
 11. Monica Kosa[#], **Hannah-Noa Barad**[#], Vijay Singh, David A. Keller, Klimentiy Shimanovich, Sven Rühle, Assaf Y. Anderson, Arie Zaban, and Dan Thomas Major; A combined computational and experimental investigation of Mg doped α -Fe₂O₃, Physical Chemistry Chemical Physics, 18, 781-791, 2016.
 12. **Hannah-Noa Barad**, Adam Ginsburg, Hagai Cohen, Kevin J. Rietwyk, David A. Keller, Shay Tirosh, Yaniv Bouhadana, Assaf Y. Anderson, and Arie Zaban; Hot electron-based solid state TiO₂|Ag solar cells, Advanced Materials Interfaces, 3, 7, 1500789, 2016.
 13. Koushik Majhi, Luca Bertoluzzi, David A. Keller, **Hannah-Noa Barad**, Adam Ginsburg, Assaf Y. Anderson, Rosario Vidal, Pilar Lopez-Varo, Iván Mora-Sero, Juan Bisquert, and Arie Zaban; Co₃O₄ based all-oxide PV: A numerical simulation analyzed combinatorial material science study, The Journal of Physical Chemistry C, 17, 120, 9053-9060, 2016.
 14. Zhi Yan, David A. Keller, Kevin J. Rietwyk, **Hannah-Noa Barad**, Koushik Majhi, Adam Ginsburg, Assaf Y. Anderson, and Arie Zaban; Effect of spinel inversion on (Co_xFe_{1-x})₃O₄ all-oxide solar cell performance, Energy Technology, 4, 809-815, 2016.
 15. Adam Ginsburg, David A. Keller, **Hannah-Noa Barad**, Kevin J. Rietwyk, Yaniv Bouhadana, Assaf Y. Anderson, and Arie Zaban; One-step synthesis of crystalline Mn₂O₃ thin film by ultrasonic spray pyrolysis, Thin Solid Films, 615, 261-264, 2016.
 16. Koushik Majhi[#], Vijay Singh[#], Kevin J. Rietwyk, David A. Keller, **Hannah-Noa Barad**, Adam Ginsburg, Zhi Yan, Assaf Y. Anderson, Arie Zaban, and Dan Thomas Major; Electron-hybridization induced enhancement of photo activity in indium-doped Co₃O₄, The Journal of Physical Chemistry C, 120, 51, 28983, 2016.

17. Kevin J. Rietwyk, David A. Keller, Koushik Majhi, Adam Ginsburg, Maayan Priel, **Hannah-Noa Barad**, Assaf Y. Anderson, and Arie Zaban; High-throughput electrical potential depth-profiling in air, *Advanced Materials Interfaces*, 4, 1700136 (1-7), 2017.
18. Elana Borvick, Assaf Y. Anderson, **Hannah-Noa Barad**, Maayan Priel, David A. Keller, Adam Ginsburg, Kevin J. Rietwyk, Simcha Meir, and Arie Zaban; Process-function data mining for the discovery of solid-state iron-oxide PV, *ACS Combinatorial Science*, 19 (12), 755-762, 2017.
19. David A. Keller, **Hannah-Noa Barad**, Kevin J. Rietwyk, Adam Ginsburg, Elana Borvick, Maayan Priel, Assaf Y. Anderson, Simcha Meir, and Arie Zaban; Oxygen concentration as a combinatorial parameter: the effect of continuous oxygen vacancy on SnO₂ layer conductivity, *Materials Chemistry and Physics*, 208, 289-293, 2018.
20. Adam Ginsburg, Maayan Priel, **Hannah-Noa Barad**, David A. Keller, Elana Borvick, Kevin J. Rietwyk, Adi Kama, Simcha Meir, Assaf Y. Anderson, and Arie Zaban; Solid state ITO|Au-NPs|TiO₂ plasmonic based solar cells, *Solar Energy Materials and Solar Cells*, 179, 254-259, 2017.
21. **Hannah-Noa Barad**, David A. Keller, Kevin J. Rietwyk, Adam Ginsburg, Shay Tirosh, Simcha Meir, Assaf Y. Anderson, and Arie Zaban; How transparent oxides gain some color: discovery of a CeNiO₃ reduced bandgap phase as an absorber for photovoltaics, *ACS Combinatorial Science*, 20, 6, 366-376, 2018.
22. David A. Keller, **Hannah-Noa Barad**, Eli Rosh-Hodesh, Arie Zaban, and David Cahen; Can FTO be more like ITO? Reducing F:SnO₂ surface roughness by introducing additional SnO₂ coating, *MRS communications*, 8, 3, 1358-1362, 2018.
23. Kevin. J. Rietwyk, David A. Keller, Adam Ginsburg, **Hannah-Noa Barad**, Maayan Priel, Koushik Majhi, Zhi Yan, Shay Tirosh, Assaf Y. Anderson, Lothar Ley, and Arie Zaban; Universal work function of metal oxides exposed to air, *Advanced Materials Interfaces*, 6, 121, 1802058, 2019.
24. Itai Henn, Ayelet Atkins, Amos Markus, Gal Shpun, **Hannah-Noa Barad**, Nairouz Farah, and Yossi Mandel; SEM/FIB Imaging for studying neural interfaces, *Developmental Neurobiology*, 1-11, 2020.
25. Vincent Mauricio Kadiri, Jan-Philipp Günther, Sai Nikhilesh Kottapalli, Rahul Goyal, Florian Peter, Mariana Alarcón-Correa, Kwanghyo Son, **Hannah-Noa Barad**, Michael Börsch, and Peer Fischer; Light- and magnetically actuated FePt microswimmers, *The European Physical Journal E*, 44, 6, 1-11, 2021.
26. **Hannah-Noa Barad**[#], Hyunah Kwon[#], Mariana Alarcón-Correa[#], and Peer Fischer; Large area patterning of nanoparticles and nanostructures: current status and future prospects, *ACS Nano*, 15, 4, 5861–5875, 2021.
27. **Hannah-Noa Barad**, Mariana Alarcón-Correa, Gerardo Salinas, Eran Oren, Florian Peter, Alexander Kuhn, and Peer Fischer; Combinatorial growth of multinary nanostructured thin functional films, *Materials Today*, 50, 89-99, 2021.
28. Hyunah Kwon, **Hannah-Noa Barad**, Alex Ricardo Silva Olaya, Mariana Alarcon-Correa, Kersten Hahn, Gunther Richter, Gunther Wittstock, Peer Fischer; Dry synthesis of pure and ultra-thin nanoporous metallic films, *ACS Applied Materials & Interfaces*, 2022, accepted.

Proceedings

1. Assaf Y. Anderson, **Hannah-Noa Barad**, Maayan Priel[^], David A. Keller, Elana Rothstein[^], Adam Ginsburg, Zhi Yan, Kevin J. Rietwyk, Koushik Majhi, and Arie Zaban; Plasmonic hot electrons photovoltaics via spontaneous templating, Asia Communications and Photonics Conference, 2016.

Lecture Presentations

- **H.N. Barad**, "Rational design and investigation of catalysts for sustainable resources", **Invited talk at the MRS spring meeting**, Apr. 2023, San Francisco, USA.
- **H.N. Barad**, "High-throughput electrocatalyst design for the oxygen evolution reaction", **Invited talk at the American Chemical Society (ACS) Spring 2023**, Mar. 2023, Indianapolis, USA.
- **H.N. Barad**, "Renewable and sustainable energy resources: the dawn of multinary materials", **Invited talk at the Bar Ilan Institute of Nanotechnology & Advanced Materials annual conference**, Feb. 2023, Kfar Blum, Israel.
- **H.N. Barad**, "Design of multinary materials for energy conversion applications", **Invited talk at the workshop on perspectives for research on solar energy conversion from the viewpoints of Israeli and Berlin/Brandenburg scientists (HI-SCORE meeting)**, Feb. 2023, Rehovot, Israel.
- H.N. Barad, "Design of multinary nanostructures as sustainable fuel catalysts", **CATRIN-BINA workshop**, Oct. 2022, Olomouc, Czech Republic.
- **H.N. Barad**, "Direct synthesis of combinatorial nanostructured catalysts by glancing angle deposition (GLAD)", **Invited talk at the 11th International Workshop on Combinatorial Materials Science and Technology**, Sep. 2022, Colorado, USA, hybrid conference.
- **H.N. Barad**, H. Kwon, A.R. Silva Olaya, M. Alárcon-Correa, G. Wittstock, and P. Fischer, "A facile dry synthesis of catalytic ultrathin and highly porous metal mesh films", **E-MRS fall meeting**, Sep. 2022, Warsaw, Poland.
- **H.N. Barad**, "Multinary materials for energy and sustainability", **Invited talk at the Israel-Italy Workshop on Advanced Materials**, June 2022, Ramat Gan, Israel.
- **H.N. Barad**, "Composition and nanostructure parameter spaces in high-throughput catalyst design", **Invited talk at the Symposium on Data Science Powered High-throughput Experimentation: Towards Autonomous Discovery of New Materials for Catalysis and Energy**, TUM catalysis research center, May 2022, Munich, Germany, online symposium.
- **H.N. Barad**, "Glancing angle deposition: an innovative method for nanostructured catalysts", **Invited seminar at Helmholtz-Zentrum Berlin (HZB) for Materials and Energy**, May 2022, Berlin, Germany.
- **H.N. Barad**, "Functional nanomaterials by glancing angle deposition", **Invited talk at TNT meeting, Max Planck Institute for Intelligent Systems**, March 2022, Stuttgart, Germany.
- **H.N. Barad**, "Nanostructured materials as electrocatalysts for water splitting", **Invited seminar at the Department of Materials Science and Engineering, University of Maryland**, Dec. 2021, Maryland, USA.
- **H.N. Barad**, B. Miksch, and P. Fischer. "Simultaneous electrochemical analysis of material libraries with real combinatorial high-throughput characterization", **MRS fall meeting**, Nov.-Dec. 2021, Boston, USA, hybrid conference.
- **H.N. Barad**. "Advanced high-throughput synthetic methods and characterization tools for multinary materials", **Invited keynote speaker at the 5th Forum of Materials Genome Engineering (5-ForMGE)**, Nov. 2021, China, hybrid conference.

- **H.N. Barad**, G. Salinas, E. Oren, M. Alarcón-Correa, F. Peter, A. Kuhn, and P. Fischer. “Combinatorial investigation of metal-based-compounds as electrolyzers for oxygen evolution reaction”, MRS Spring meeting 2021, Apr. 2021, online conference.
- **H.N. Barad**, G. Salinas, M. Alarcón-Correa, F. Peter, E. Oren, A. Kuhn, and P. Fischer. “Composition and nanostructure variation in a multinary materials library: effect on electrocatalytic properties of oxygen evolution”, IVS-IPSTA 2020, Dec. 2020, online conference.
- **H.N. Barad**, M. Alarcón-Correa, E. Oren, F. Peter, and P. Fischer. “Combinatorial materials science with glancing angle deposition for photovoltaics”, EMRS 2020 spring meeting, May 2020, Strasbourg, France. *Cancelled due to COVID-19 worldwide pandemic.*
- **H.N. Barad**, E. Oren, M. Alarcón-Correa, and P. Fischer. “Exploring glancing angle deposition for nanostructured combinatorial materials science”, Future Materials conference, Feb. 2020, Lisbon, Portugal.
- **H.N. Barad**, A. Kama, A. Izhak, A. Ginsburg, A. Zaban, and D. Cahen. “Improving contacts to halide perovskite based solar cells using combinatorial materials science”, Israel Vacuum Society (IVS) conference, Sep. 2018, Ramat Gan, Israel.
- **H.N. Barad**. “Combinatorial materials science for photovoltaics- outlook for halide perovskites”, Invited seminar at Max Plank Institute for Intelligent Systems, Apr. 2018, Stuttgart, Germany.
- **H.N. Barad**, S. Meir, D. Cahen, and A. Zaban. “Combinatorial materials science for improving contacts to halide perovskites in solar cells”. SEPV 2018, Feb. 2018, Barcelona, Spain.
- **H.N. Barad**. “Combinatorial materials science for photovoltaics”. HESTPV meeting, Feb. 2018, Valencia, Spain.
- **H.N. Barad**, D.A. Keller, K.J. Rietwyk, A. Ginsburg, M. Priel, I. Grinberg, A.Y. Anderson, and A. Zaban. “How transparent metal oxides gain some color: Utilizing combinatorial materials science to discover new perovskite oxides”. Invited talk at the Israeli National Chemistry Student Symposium, Dec. 2016, BGU, Beer Sheva, Israel.
- **H.N. Barad**, M. Priel, A. Ginsburg, D.A. Keller, K.J. Rietwyk, I. Grinberg, A.Y. Anderson, and A. Zaban. “Fabrication of CeNiO₃ as a new absorber for photovoltaics using combinatorial materials science”. Israel Vacuum Society (IVS) conference, Sep. 2016, BGU, Beer Sheva, Israel.
- **H.N. Barad**, A. Ginsburg, K.J. Rietwyk, H. Cohen, D.A. Keller, A.Y. Anderson, and A. Zaban. “Direct formation of hot electron injecting nanostructures for photovoltaics”. MRS Fall Meeting, Dec. 2015, Boston, USA. Also in Bar Ilan Institute of Nanotechnology & Advanced Materials annual conference, Jan. 2016, Hispin, Israel.
- **H.N. Barad**, M. Kosa, D.A. Keller, K. Shimanovich, A.Y. Anderson, A. Zaban, and D.T. Major. “Mg doped α -Fe₂O₃: combined experimental and computational study”. Solar Energy Student conference, Dec. 2013, WIS, Rehovot, Israel.
- **H.N. Barad**, S. Rühle, A.Y. Anderson, Y. Bouhadana, and A. Zaban. “TiO₂/Cu₂O all-oxide solar cells: a combinatorial device study.” Israel Vacuum Society (IVS) conference, Oct. 2013, Herzliya, Israel.

Poster Presentations

- J. George Mathew, **H.N. Barad**, and P. Fischer. "Combinatorial fabrication of nanostructured $\text{La}_x\text{Ca}_{1-x}\text{Fe}_y\text{Ni}_{1-y}\text{O}_z$ perovskites as sustainable electrocatalysts for oxygen evolution reaction". NanoGe fall meeting, Oct. 2021, online conference, **where it won best e-poster award from ACS Energy & Fuels**.
- **H.N. Barad**, D.A. Keller, K.J. Rietwyk, A. Ginsburg, S. Tirosh, S. Meir, A.Y. Anderson, and A. Zaban. "Discovery of a CeNiO_3 reduced bandgap phase as an absorber for photovoltaics". Presented in two different conferences: in the 21st Sde Boker Symposium for Solar Electricity Production, Mar. 2018, Sde Boker, Israel; in the Hi-Score meeting-HZB, Apr. 2018, Berlin, Germany.
- **H.N. Barad**, D.A. Keller, K.J. Rietwyk, A. Ginsburg, M. Priel, I. Grinberg, A.Y. Anderson, and A. Zaban. "Utilizing combinatorial materials science to discover new metal oxides". Israeli Ministry of Science Conference, June 2017, Tel Aviv, Israel.
- **H.N. Barad**, A. Ginsburg, H. Cohen, K.J. Rietwyk, D.A. Keller, A.Y. Anderson, and A. Zaban. "Direct formation of hot electron based solid state $\text{TiO}_2|\text{Ag}$ solar cells". Israel Materials Engineering Conference (IMEC), Feb. 2016, BIU, Ramat Gan, Israel.
- **H.N. Barad**, A. Ginsburg, K.J. Rietwyk, H. Cohen, D.A. Keller, A.Y. Anderson, and A. Zaban. "Direct formation of hot electron injecting nanostructures for photovoltaics". Presented in three different conferences: in Israel Vacuum Society (IVS) conference, Sep. 2015, WIS, Rehovot, Israel; in Israel Chemical Society (ICS) conference, Feb. 2016, Tel Aviv, Israel; in Nano Israel conference, Feb. 2016, TAU, Tel Aviv, Israel.
- **H.N. Barad**, A.Y. Anderson, A. Ginsburg, D.A. Keller, K. Majhi, and A. Zaban. "Combinatorial doping of SrTiO_3 as an absorber for all-oxide photovoltaics". Presented in two different conferences: in All-Oxide Photovoltaics, Feb. 2015, Jerusalem, Israel; in IVS-MRS student meeting, Apr. 2015, TAU, Tel Aviv, Israel, **where it won the first place best poster award**.
- **H.N. Barad**, S. Rühle, A.Y. Anderson, Y. Bouhadana, and A. Zaban. "Combinatorial photovoltaic device libraries: A powerful method for the investigation of $\text{TiO}_2/\text{Cu}_2\text{O}$ heterojunction solar cells". Presented in three different conferences: in Nano Israel, March. 2014, Tel Aviv, Israel; in Israel Materials Engineering Conference (IMEC), Feb. 2014, Technion, Haifa, Israel; in Bar Ilan Institute of Nanotechnology & Advanced Materials annual conference, Jan. 2014, Acco, Israel, **where it won the best poster award**.
- **H.N. Barad**, M. Kosa, D.A. Keller, S. Rühle, A. Zaban, and D.T. Major. "Designing energy efficient materials in silico: The case of $\alpha\text{-Fe}_2\text{O}_3\text{-MgO}$ a computational and experimental study". Presented in two different conferences: in Israel Vacuum Society (IVS) conference, Sep. 2014, Herzliya, Israel (updated version of poster including many more results); in All-Oxide Photovoltaics, Dec. 2013, Jerusalem, Israel.
- **H.N. Barad**, S. Rühle, B. Kuppfer, Y. Bouhadana, A.Y. Anderson, and A. Zaban. " $\text{TiO}_2/\text{Cu}_2\text{O}$ All-oxide heterojunction solar cells". Russell Berrie Nanotechnology Institute (RBNI) conference, Feb. 2012, Kibbutz Hagoshrim, Israel.

Professional work experience

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| 2013-2018 | High-resolution scanning electron microscope (HRSEM) and focused ion beam (FIB) operator, at the Institute of Nanotechnology & Advanced Materials, Bar Ilan University. |
| 2015-2017 | Lab director in the course "Nanotechnology Labs" for graduate students at Bar Ilan University. Instructing graduate students in a specific project they choose related to nanotechnology and materials for photovoltaics. |
| 2012-2016 | Professor's teaching assistant, course coordinator, and lab director in the course "Materials Labs" for third year undergraduate students at Bar Ilan University. Besides teaching third year |

undergraduate students the lab course, I was also in charge of coordinating the whole course (exams, lab book, safety training, etc.), including five other labs.

- 2011-2016** Supervising coordinator and instructor of the nanotechnology course for children in the Youth Science Activity Center (YSA) at Bar Ilan University. Where children from all over Israel come to learn about nanotechnology and experience science. The work included frontal lectures, science experiments, coordinating all other nanotechnology instructors, purchasing chemicals and equipment, as well as planning and executing the annual 2 week long summer science camp.
- 2009** English teacher at an after-school study center at the junior high school "Ha'Pardes" in Or Yehudah, Israel.

Scientific activities (volunteer)

- 2020-2022** Founder and manager of the Science Abroad organization Baden-Württemberg branch and co-founder and manager of the Materials Field of the organization. The organization aims to form a network of Israeli researchers living abroad, assisting them with any issues that may arise, and helping them return to Israeli academia and industry. As branch manager I am in charge of recruiting new members to the branch (Israeli researchers from all over Baden-Württemberg state, Germany), organizing social meetings and professional lectures for all the branch members, as well as assisting in private issues of members. As Materials Field manager, I am in charge of joining Israeli researchers who focus on materials and energy research, forming a professional network and organizing scientific meetings and activities.
- 2018-2022** Member of the Athena group of the Max Planck Society, aimed at connecting women in science and technology fields.
- 2016-2018** President of the Bar-Ilan University (BIU) & Weizmann Institute of Science (WIS) Materials Research Society University Chapter (MRS-UC) in Israel (see below).
- 2014-2016** Secretary and treasurer of the Bar-Ilan University (BIU) & Weizmann Institute of Science (WIS) Materials Research Society University Chapter (MRS-UC) in Israel, this organization currently includes faculty members and students who are affiliated with material science research. In the context of this activity, I have organized three materials science student conferences (WIS-BIU UCMRS 2014, IVS-MRS Student Conference 2015 and 2016) as well as organized activities, and special outreach science programs for retirees and for youth ages 12-18.
- 2013** Head of the student scientific and organizing committee of the BIU Institute of Nanotechnology & Advanced Materials annual conference, which took place in Zefat, Israel.

Advising

Postdoctoral fellows

- Johannes Daniel Bartl, October 2022-present.
- Adi Kama, October 2022-present.
- Anat Itzhak, October 2022-present.

Doctoral thesis students

- Sidharth Regunathan, Expected graduation November 2026.
Thesis title: TBD

Master thesis students

- Jael George Mathew, graduated December 2021.
Working thesis title: “Discovering sustainable electrocatalysts for oxygen evolution reaction through combinatorial investigation of nanostructured $\text{La}_x\text{Ca}_{1-x}\text{Fe}_y\text{Ni}_{1-y}\text{O}_z$ perovskite”
- Adi Kama, graduated November 2017.
Thesis: “Decreasing recombination on the interface of organic-inorganic hybrid perovskites and selective contact TiO_2 in a solar cell device”
- Maayan Priel, graduated October 2017.
Thesis: “Plasmon induced solar cells and their synthesis by spray pyrolysis”
- Elana Borvick, graduated July 2017.
Thesis: “Predicting photovoltaic cell characteristics using data mining algorithms”

Research internship

- Yuval Mualem, ongoing
- Hila Melamed, ongoing
- Sofia Zalivanski, ongoing
- Jessica Bauhof, completed January 2021.
Title: “Color change in electrochromic electrodes for detection of oxygen evolution reaction”
- Friedrich Stemmler, completed May 2021.
Title: “Polyelemental nanoparticle synthesis approach”

Peer reviewing

ACS Applied Energy Materials, Scientific Reports, Solar Energy, Nature, Nature Communications, Advanced Materials, ACS Combinatorial Science, Materials & Design, Materials Chemistry and Physics, Advanced Energy Materials, Physikalische Chemie, Materials Today Communications, Thin Solid Films.

Media highlights

- October 2020** [Interview for Science Abroad organization, “Moving to Germany for my postdoc”](#)
- June 2019** [Bar Ilan Institute of Nanotechnology & Advanced Materials newsletter, 10th issue, “A winning combination”](#)
- June 2017** [Women in Research Blog article, “Woman have unique qualities that make them great scientists”](#)
- June 2017** [“Optimization of solar cells”](#) (in German) in Suddeutsche Zeitung, June 28, 2017
- May 2017** [“What are the biggest barriers facing young scientists?”](#) in Times Higher Education, 16 May, 2017

Podcasts

1. [Little-big science, talking science “Combinations- with Dr. Hannah-Noa Barad”](#), 4.10.2020
2. [What’s new with research? “How to find materials for solar cells- with Dr. Hannah-Noa Barad”](#), 15.6.18

Volunteer work (general)

- 2022** Volunteered and gave scientific enrichment lectures in the Odyssey program at Bar Ilan University for high school students.
- 2022** Volunteered for the "Shavot" organization, (that help girls strengthen their sense of self-worth and provides them with tools that will enable them to fulfill their aspirations), giving inspirational talks to boys and girls in 8th grade on the beauty of being a scientist.
- 2016** Supervisor and instructor of after school science group for children in 5th and 6th grade at "Ben Gurion" school in Givat Shmuel (Israel). The volunteer work included organizing the subjects for each meeting and presentations for the children, preparing work sheets, doing experiments, and teaching interesting science.
- 2015** Working with kindergarten aged autistic children in "ALUT" association, in the "Shvilim" treatment center in Petach Tikva, doing scientific experiments with the science group there.
- 2008-2011** Student representative for my undergraduate class, leading changes in the curriculum and helping to fix problems that the students had throughout our undergraduate studies.

Mandatory service

- 2006** National Service at the "Kfar Ha'Roeh" junior high school, next to Hadera, Israel. The work included teaching the children privately and replacing classroom teachers during the day. In the afternoon and evening the job was being a counselor for the children who lived at the school. In general, I was also in charge of school social events (such as: exhibitions, ceremonies, etc.).