

Curriculum Vitae

Eran Edri

Department of Chemical Engineering,
Ilse Katz Institute for Nanoscale Science & Technology
Ben-Gurion University of the Negev,
Be'er Sheva, Israel 8410501
+972-8-6461765, edrier@bgu.ac.il

Academic Appointments

2017-present Senior Lecturer, Department of Chemical Engineering,
Ben-Gurion University of the Negev, Be'er Sheva, Israel

Education and Training

2014-2017 Post-doctoral Fellow, Lawrence Berkeley National Laboratory, Berkeley, CA, USA
2009-2014 Ph.D. Chemistry
Weizmann Institute of Science, Rehovot, Israel
2007-2009 M.Sc. (*cum Laude*) Chemical Engineering
Ben-Gurion University of the Negev, Be'er Sheva, Israel
2003-2007 B.Sc. (*cum Laude*) Chemical Engineering
Ben-Gurion University of the Negev, Be'er Sheva, Israel
2003-2007 B.Sc. Chemistry
Ben-Gurion University of the Negev, Be'er Sheva, Israel

Received Research Grants and Awards

2018 Ministry of Energy Research Grant, Ministry of Energy, Israel
2018 WaterTech 2018 research grant, Ben-Gurion University of the Negev
2018 Alon Fellowship for outstanding young researchers, Israel Council for Higher Education
2017 Energy and Water Resources Fellowship, Israel's Ministry of National Infrastructure
2016 Career Development Award, Ben-Gurion University of the Negev
2015 Career Development Award, Ben-Gurion University of the Negev

Selected Peer-Reviewed Publications

1. Cornejo, J. A.*; Sheng, H.*; **Edri, E.***; Ajo-Franklin, C.; Frei, H. Nanoscale Membranes That Chemically Isolate and Electronically Wire up the Abiotic/Biotic Interface. *Nat. Commun.* 2018, 9 (1), 2263. *Equal contribution.
2. **Edri, E.**; Aloni, S.; Frei, H. Fabrication of Core-Shell Nanotube Array for Artificial Photosynthesis Featuring an Ultrathin Composite Separation Membrane. *ACS Nano* 2018, 12 (1), 533-541.
3. **Edri, E.**; Cooper, J. K.; Sharp, I. D.; Guldi, D. M.; Frei, H. Ultrafast Charge Transfer between Light Absorber and Co₃O₄ Water Oxidation Catalyst across Molecular Wires Embedded in Silica Membrane. *J. Am. Chem. Soc.* 2017, 139 (15), 5458-5466.

4. Kim, W.; McClure, B. A.; **Edri, E.**; Frei, H. Coupling Carbon Dioxide Reduction with Water Oxidation in Nanoscale Photocatalytic Assemblies. *Chem. Soc. Rev.* 2016, 45 (11), 3221–3243.
5. Schulz, P.; Tjepelt, J. O.; Christians, J. A.; Levine, I.; **Edri, E.**; Sanehira, E. M.; Hodes, G.; Cahen, D.; Kahn, A. High-Work-Function Molybdenum Oxide Hole Extraction Contacts in Hybrid Organic-Inorganic Perovskite Solar Cells. *ACS Appl. Mater. Interfaces* 2016, 8 (46), 31491–31499.
6. Kim, W.; **Edri, E.**; Frei, H. Hierarchical Inorganic Assemblies for Artificial Photosynthesis. *Acc. Chem. Res.* 2016, 49 (9), 1634–1645.
7. Kirmayer, S.; **Edri, E.**; Hines, D.; Klein–Kedem, N.; Cohen, H.; Niitsoo, O.; Pinkas, I.; Kamat, P. V.; Hodes, G. Surface Oxidation as a Cause of High Open–Circuit Voltage in CdSe ETA Solar Cells. *Adv. Mater. Interfaces* 2015, 2 (1), 1400346.
8. Hailegnaw, B.; Kirmayer, S.; **Edri, E.**; Hodes, G.; Cahen, D. Rain on Methylammonium Lead Iodide Based Perovskites: Possible Environmental Effects of Perovskite Solar Cells. *J. Phys. Chem. Lett.* 2015, 6 (9), 1543–1547.
9. **Edri, E.**; Frei, H. Charge Transport through Organic Molecular Wires Embedded in Ultrathin Insulating Inorganic Layer. *J. Phys. Chem. C* 2015, 119 (51), 28326–28334.
10. **Edri, E.**; Kirmayer, S.; Mukhopadhyay, S.; Gartsman, K.; Hodes, G.; Cahen, D. Elucidating the Charge Carrier Separation and Working Mechanism of $\text{CH}_3\text{NH}_3\text{PbI}_3\text{-xCl}_x$ Perovskite Solar Cells. *Nat. Commun.* 2014, 5 (1), 3461.
11. Tidhar, Y.; **Edri, E.**; Weissman, H.; Zohar, D.; Hodes, G.; Cahen, D.; Rybtchinski, B.; Kirmayer, S. Crystallization of Methyl Ammonium Lead Halide Perovskites: Implications for Photovoltaic Applications. *J. Am. Chem. Soc.* 2014, 136 (38), 13249–13256.
12. **Edri, E.**; Kirmayer, S.; Henning, A.; Mukhopadhyay, S.; Gartsman, K.; Rosenwaks, Y.; Hodes, G.; Cahen, D. Why Lead Methylammonium Tri-Iodide Perovskite-Based Solar Cells Require a Mesoporous Electron Transporting Scaffold (but Not Necessarily a Hole Conductor). *Nano Lett.* 2014, 14 (2), 1000–1004.
13. Schulz, P.; **Edri, E.**; Kirmayer, S.; Hodes, G.; Cahen, D.; Kahn, A. Interface Energetics in Organo-Metal Halide Perovskite-Based Photovoltaic Cells. *Energy Environ. Sci.* 2014, 7 (4), 1377.
14. Barnea-Nehoshtan, L.; Kirmayer, S.; **Edri, E.**; Hodes, G.; Cahen, D. Surface Photovoltage Spectroscopy Study of Organo-Lead Perovskite Solar Cells. *J. Phys. Chem. Lett.* 2014, 5 (14), 2408–2413.
15. **Edri, E.**; Kedem, N.; Cohen, H.; Barnes, P.; Hodes, G. Higher Open Circuit Voltage and Reduced UV-Induced Reverse Current in ZnO-Based Solar Cells by a Chemically Modified Blocking Layer. *J. Phys. Chem. C* 2014, 118 (30), 16884–16891.
16. **Edri, E.***; Kirmayer, S.*; Kulbak, M.; Hodes, G.; Cahen, D. Chloride Inclusion and Hole Transport Material Doping to Improve Methyl Ammonium Lead Bromide Perovskite-Based High Open-Circuit Voltage Solar Cells. *J. Phys. Chem. Lett.* 2014, 5 (3), 429–433. *Equal contribution
17. **Edri, E.***; Kirmayer, S.*; Cahen, D.; Hodes, G. High Open-Circuit Voltage Solar Cells Based on Organic-Inorganic Lead Bromide Perovskite. *J. Phys. Chem. Lett.* 2013, 4 (6), 897–902. *Equal contribution. **Selected ACS Editors' Choice