

Hod Idan – C.V.

Marital status: Married

Date of Birth and and Citizenship: 22.May.1981, Israeli

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Education

- 2013- Fulbright Post-doctorate Fellow, Chemistry Department, Northwestern University, IL, USA.
Topic: Metal Organic Frameworks for Photo-Electrocatalytic Solar Fuels and Energy Applications.
Supervisor: Prof. Joseph T. Hupp.
- 2008 -2013 Ph.D, Chemistry Department, Bar-Ilan University, Israel.
Topic: Charge Transfer in Quantum Dot Sensitized Solar Cells. Materials, Characterizations and Application.
Supervisor: Prof. Arie Zaban.
- 2006-2008 M.Sc, cum laude (final grade 95), Chemistry Department, Bar-Ilan University, Israel.
Topic: Molecular crystal engineering. Predictions of solvents and additives effect on organic crystal morphology.
Supervisor: Prof. Yitzhak Mastai.
- 1999-2002 B.Sc, Chemistry and Computer Science, Bar-Ilan University, Israel.

Academic Scholarships and Awards

- 2015 American Chemical Society (ACS) Physical Chemistry Division Postdoctoral Award
- 2013-2014 Fulbright Postdoctoral Scholarship for outstanding Ph.D.
- 2008-2011 Bar-Ilan University President's Scholarship for excellent Ph.D student.
- 2011-2012 Nanotechnology scholarship: One year scholarship for outstanding Ph.D., Bar-Ilan University.
- 2009 Nanotechnology scholarship: One year scholarship for outstanding M.Sc., Bar-Ilan University.
- 2008 Shechter prize for outstanding M.Sc students.

Idan Hod: Publications in Peer Reviewed Journals

- 1) **Hod, I.**; Farha, O. K.; Hupp, J. T.
["Modulating the Rate of Charge Transport in Metal–Organic Framework Thin Films Using Host:Guest Chemistry"](#).
[Chemical Communications](#), 2016, 52, 1705-1708. (IF: 6.8)
- 2) **Hod, I.**; Sampson, M. D.; Deria, P.; Kubiak, C. P.; Farha, O. K.; Hupp, J. T.
["Fe-Porphyrin Based MOF Films as High-Surface-Concentration, Heterogeneous Catalysts for Electrochemical Reduction of CO₂"](#),
[ACS Catalysis](#), 2015, 5, 6302-6309. (IF: 9.3, Citations: 13)
- 3) **Hod, I.**; Deria, P.; Bury, M.; Mondloch, J. E.; Kung, T. C.; So, M.; Sampson, M. D.; Peters, A.; Kubiak, C. P.; Farha, O. K.; Hupp, J. T.
["A Porous, Proton Relaying, Metal-Organic Framework Material that Accelerates Electrochemical Hydrogen Evolution"](#),

- [Nature Communications](#), 2015, 6, 8304. (IF: 11.4, Citations: 8)
- 4) McGonigal, P. R.; Deria, P.; **Hod, I.**; Moghadam, P. Z.; Avestro, A. J.; Horwitz, N.; Gibbs-Hall, I. C.; Blackburn, A. K.; Chen, D.; Botros, Y. Y.; Wasielewski, M. R.; Snurr, R. Q.; Hupp, J.T.; Farha, O. K.; Stoddart, J. F.
["Electrochemically Addressable Trisradical Rotaxanes Organized Within a Metal–Organic Framework"](#)
[PNAS](#), 2015, 112 (36), 11161-11168. (IF:9.6, Citations: 11)
 - 5) **Hod, I.**; Bury, M.; Gardner, D. M.; Deria, P.; Roznyatovskiy, v.; Wasielewski, M. R.; Farha, O. K.; Hupp, J. T.
["Bias-switchable Permselectivity and Electro-catalytic Activity of Ferrocene Functionalized Metal Organic Framework Compound"](#)
[Journal of Physical Chemistry Letters](#), 2015, 6 (4), 586–591. (IF: 7.4, Citations: 17)
 (Selected as ACS Editor's Choice Paper, February 3, 2015)
 (Most read paper in Journal of Physical Chemistry Letters between 12/2014 and 12/2015)
 - 6) Deria, P.; Bury, W.; **Hod, I.**; Kung, T. C.; Karagiari, O.; Hupp, J. T.; Farha, O. K.
["MOF Functionalization via Solvent-Assisted Ligand Incorporation: Phosphonates vs Carboxylates"](#)
[Inorganic Chemistry](#), 2015, 54, 2185–2192. (IF: 4.7, Citations: 17)
 - 7) **Hod, I.**; Bury, M.; Karlin, D. M.; Deria, P.; Kung, T. C.; Katz, M. J.; So, M.; Klahr, B.; Jin, D.; Chung, Y. W.; Odom, T. W.; Farha, O. K.; Hupp, J. T.
["Directed Growth of Electroactive Metal-Organic Framework Thin Films Using Electrophoretic Deposition"](#),
[Advanced Materials](#), 2014, 26, 6295. (IF: 17.4, Citations: 49)
 - 8) **Hod, I.**; Zaban, A.
["Materials and Interfaces in Quantum Dot Sensitized Solar Cells: Challenges Advances and Prospects"](#),
[Langmuir](#), 2014, 30, 7264 (Selected for Cover Art). (IF: 4.4, Citations: 46)
 - 9) Tachan, Z.*; **Hod, I.***; Zaban, A. (* Equal contribution)
["The TiO₂-Catechol Complex: Coupling Type II Sensitization With Efficient Catalysis of Water Oxidation"](#),
[Advanced Energy Materials](#), 2013, 4(6). (IF: 16.1, Citations: 2)
 - 10) Buhbut, S.; Itzhakov, S.; **Hod, I.**; Oron, D.; Zaban, A.
["Photo-Induced Dipoles: A New Method to Convert Photons into Photovoltage in Quantum Dot Sensitized Solar Cells"](#),
[Nano-Letters](#), 2013, 13, 4456. (IF: 13.5, Citations: 22)
 - 11) **Hod, I.**; Tachan, Z.; Shalom, M.; Zaban, A.
["Characterization and Control of the Electronic Properties of a NiO Based Dye Sensitized Photocathode"](#),
[Physical Chemistry Chemical Physics](#), 2013, 15, 6339. (IF: 4.4, Citations: 14)
 - 12) Tachan, Z.; **Hod, I.**; Shalom, M.; Zaban, A.
["The importance of the TiO₂/Quantum Dots Interface in the Recombination Processes of Quantum Dot Sensitized Solar Cells"](#),
[Physical Chemistry Chemical Physics](#), 2013, 15, 3841. (IF: 4.4, Citations: 41)
 - 13) **Hod, I.**; González-Pedro, V.; Tachan, Z.; Fabregat-Santiago, F.; Mora-Seró, I.; Bisquert, J.; Zaban, A.
["Dye versus Quantum Dots in Sensitized Solar Cells: Participation of Quantum Dot Absorber in the Recombination Process"](#),
[Journal of Physical Chemistry Letters](#), 2011, 2, 3032. (IF: 7.4, Citations: 88)
 - 14) **Hod, I.**; Tachan, Z.; Shalom, M.; Zaban, A.
["Internal Photoreference Electrode: A Powerful Characterization Method for Photoelectrochemical Quantum Dot Sensitized Solar Cells"](#),
[Journal of Physical Chemistry Letters](#), 2011, 2, 1032. (IF: 7.4, Citations: 24)
 - 15) Shalom, M.; **Hod, I.**; Tachan, Z.; Buhbut, S.; Tirosh, S.; Zaban, A.
["Quantum Dot Based Anode and Cathode for High Voltage Tandem Photo-Electrochemical Solar Cell"](#),
[Energy and Environmental Science](#), 2011, 4, 1874. (IF: 20.5, Citations: 36)
 - 16) Tachan, Z.; Shalom, M.; **Hod, I.**; Ruhle, S.; Tirosh, S.; Zaban, A.
["PbS as a Highly Catalytic Counter Electrode for Polysulfide-Based Quantum Dot Solar Cells"](#),
[Journal of Physical Chemistry C](#), 2011, 115, 6162. (IF: 4.7, Citations: 210)
 - 17) **Hod, I.**; Shalom, M.; Tachan, Z.; Ruhle, S.; Zaban, A.
["SrTiO₃ Recombination-Inhibiting Barrier Layer for Type II Dye-Sensitized Solar Cells"](#),
[Journal of Physical Chemistry C](#), 2010, 114, 10015. (IF: 7.4, Citations: 44)

- 18) **Hod, I.**; Mastai, Y.; Medina D.
["Effect of Solvents on the Growth Morphology of DL Alanine Crystals"](#),
[Crystal Engineering Comm](#), 2010, 13, 502. (IF: 4, Citations: 22)
- 19) Plotkin, M.; **Hod, I.**; Boden, A. S.; Galushko, D.; Zaban, A.; Bergman, J. D.
["Solar Energy Harvesting in the Epicuticle of the Oriental Hornet \(*Vespa Orientalis*\)"](#),
[Naturwissenschaften](#), 2010, 97, 1067. (IF: 2, Citations: 18)
- 20) Salant, A.; Shalom, M.; **Hod, I.**; Faust, A.; Zaban, A.; Banin, U.
["Quantum Dot Sensitized Solar Cells with Improved Efficiency Prepared Using Electrophoretic Deposition"](#),
[ACS Nano](#), 2010, 4, 5962. (IF: 12.8, Citations: 152)
- 21) Buhbut, S.; Itzhakov, S.; Tauber, E.; Shalom, M.; **Hod, I.**; Geiger, T.; Garini, Y.; Oron, D.; Zaban, A.
["Built-in Quantum Dot Antennas in Dye-Sensitized Solar Cells"](#),
[ACS Nano](#), 2010, 4, 1293. (IF: 12.8, Citations: 132)
- 22) Berea, E. M.; Shalom, M.; Gimenez, S.; **Hod, I.**; Mora-Sero, I.; Zaban, A.; Bisquert, J.
["Design of Injection and Recombination in Quantum Dot Sensitized Solar Cells"](#),
[Journal of American Chemical Society](#), 2010, 132, 6834. (IF: 12.1, Citations: 200)
- 23) Shalom, M.; Ruhle, S.; **Hod, I.**; Yahav, S.; Zaban, A.
["Energy Level Alignment in CdS Quantum Dot Sensitized Solar Cells Using Molecular Dipoles"](#),
[Journal of American Chemical Society](#), 2009, 131, 9876. (IF: 12.1, Citations: 149)
- 24) Dressler, H. D.; **Hod, I.**; Mastai, Y.
["Stabilization of \$\alpha\$ -L-Glutamic Acid on Chiral Thin Films – A Theoretical and Experimental Study"](#),
[Journal of Crystal Growth](#), 2008, 310, 1718. (IF: 1.6, Citations: 13)

Invited non Peer-Reviewed Papers

- 1) **Hod, I.**; Farha, O. K.; Hupp, J. T.
["Electrocatalysis: Powered by Porphyrin Stacking"](#).
[Nature Materials News and Views](#), 2015, 14, 1192-1193. (IF: 36.5, Citations: 1)

Book Chapters

- 1) **Hod, I.**; Shalom, M.; Tachan, Z.; Yahav S.; Zaban A.
[Frontier of Quantum Dot Solar Cells](#),
 CMC Publishing, 2012.

Presentations and posters

Oral Presentations:

- 1) **Hod, I.**; Farha, O.K.; Hupp, J.T.
 New Approaches for the Acceleration of Catalytic Processes for Solar Fuel Generation,
Invited Award Talk, American Chemical Society (ACS) Conference, Boston, U.S.A, 2015.
- 2) **Hod, I.**; Farha, O.K.; Hupp, J.T.
 New Approaches for the Acceleration of Catalytic Processes for Solar Fuel Generation,
 ElectroChemical Society (ECS) Meeting, Chicago, U.S.A, 2015.
- 3) **Hod, I.**; Farha, O.K.; Hupp, J.T.
 A Porous, Proton Relaying, Metal-Organic Framework Material that Accelerates Electrochemical
 Hydrogen Evolution,
 Solar Fuels Conference, Montreal, Canada, 2014.
- 4) **Hod, I.**; Zaban. A.
 Advances in Quantum Dot Sensitized Solar Cells,
Invited Lecture, ISOPHOS Conference, Ventotene, Italy, 2013.
- 5) **Hod, I.**; González-Pedro, V.; Tachan, Z.; Fabregat-Santiago, F.; Mora-Seró, I.; Bisquert, J.;
 Zaban, A.
 Fundamental Differences Between Dye and Quantum Dot Sensitized Solar Cells,
 MRS Spring Meeting, San-Francisco, U.S.A, 2012 (**Selected As a Highlight Lecture**).
- 6) **Hod, I.**; Zaban, A.
 Quantum Dot Sensitized Solar Cells,
Invited Seminar, National Renewable Energy Labs (NREL), Colorado, U.S.A, 2012.
- 7) **Hod, I.**; Shalom, M.; Tachan, Z.; Zaban, A. Dye versus Quantum Dots in Sensitized Solar Cells:
 Participation of Quantum Dot Absorber in the Recombination Process,
 Bina Conference, Jaffa, Israel, 2011.

- 8) **Hod, I.**; Shalom, M.; Tachan, Z.; Ruhle, S.; Zaban, A.
SrTiO₃ Recombination Inhibiting Barrier Layer for Type II Dye Sensitized Solar Cells,
SSC Conference, Zichron Yaakov, Israel, 2010.
- 9) **Hod, I.**; Shalom, M.; Tachan, Z.; Ruhle, S.; Zaban, A.
Improving the Performance of Type II Dye Sensitized Solar Cells,
Bina Annual Meeting, Ohalo, Israel, 2009.

Posters:

- 1) **Hod, I.**; González-Pedro, V.; Tachan, Z.; Fabregat-Santiago, F.; Mora-Seró, I.; Bisquert, J.; Zaban, A.
Fundamental Differences Between Dye and Quantum Dot Sensitized Solar Cells,
Nano Israel, 2012.
- 2) **Hod, I.**; Zaban, A.
Internal Reference Electrode: a Powerful Tool for the Characterization of Photo-Electrochemical
Quantum Dot Sensitized Solar Cells,
Hybrid and Organic Photovoltaics Conference, Spain, 2011.
- 3) **Hod, I.**; Zaban, A.
Internal Reference Electrode: a Powerful Tool for the Characterization of Photo-Electrochemical
Quantum Dot Sensitized Solar Cells,
Nano Israel, 2010.
- 4) **Hod, I.**; Shalom, M.; Tachan, Z.; Zaban, A.
P-type Thin Film Coatings for Improved Charge Separation in Quantum Dot Sensitized Solar
Cells,
RBNI Winter School, Ein Gedi Israel, 2010.
- 5) **Hod, I.**; Shalom, M.; Tachan, Z.; Ruhle, S.; Zaban, A.
SrTiO₃ Recombination Inhibiting Barrier Layer for Type II Dye Sensitized Solar Cells,
Hybrid and Organic Photovoltaics Conference, Spain, 2009.
- 6) **Hod, I.**; Shalom, M.; Tachan, Z.; Ruhle, S.; Zaban, A.
SrTiO₃ Recombination Inhibiting Barrier Layer for Type II Dye Sensitized Solar Cells,
Nano Israel 2009.
- 7) **Hod, I.**; Shalom, M.; Tachan, Z.; Zaban, A.
Improving the Performance of Type II Dye Sensitized Solar Cells,
IVS Conference, Israel, 2009.

Academic Activities

2009 Electrochemical Impedance Spectroscopy School, Castellon, Spain.

Teaching Experience

2007 – 2012 Operative manager and instructor in the physical and instrumental lab for second
year students.

Military service

2002 – 2006 Captain, intelligence force, chemical engineer.