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CURRICULUM VITAE

Name: Moshe Zohar

Citizenship: Israeli

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Residence address: Beer Sheva, Israel.

1. Academic education

2010-2014 PhD in the Department of Electrical and Computer Engineering. Ben Gurion University of the Negev, Israel.
Dissertation Title: High sensitive photodetectors based on nanometer scale periodic multilayered structures.
Name of advisor: Professor Shlomo Hava and Professor Mark Auslender

2007-2010 M.Sc. Electrical and Computer Engineering. Ben Gurion University of the Negev, Israel.
Research Title: The Effects of Nano Structure Grating on the Optical Properties of Resonant Cavity Enhanced IR Photodetectors.
Name of advisor: Professor Shlomo Hava and Professor Mark Auslender

2003-2007 B.Sc. in Electrical and Computer Engineering. Ben Gurion University of the Negev, Israel. Majoring in Optics and Communication.
Engineering Project: "Adaptive MCM system with constrained BER and Maximum Capacity".
Project's objective: Constructing a Matlab simulation system for optimization of OFDM systems for a given channel.
Name of advisor: Prof. Vladimir Lyandres and Dr. Lev Goldfeld.

2. Academic employment

Since 2018 Senior Lecturer. Electrical and Electronics Engineering Department, SCE Shamoon College of Engineering, Israel.

Since 2014 Senior Lecturer. Electrical and Electronics Engineering Department, SCE Shamoon College of Engineering, Israel.

2010-2014 Lecturer and a teaching assistant. Electrical and Electronics Engineering Department, SCE Shamoon College of Engineering, Israel.

2009-2010 Teaching assistant. Electrical and Electronics Engineering Department, SCE Shamoon College of Engineering, Israel.

2007-2010 Teaching assistant. Electrical and Computer Engineering Department, Ben Gurion University of the Negev, Israel.

3. Academic research and development activities

3.1 Present research and development activities

Since 2010 Light management for energy harvesting optical devices using periodically patterned nanostructures and metasurfaces.

High sensitivity photodetectors based on nano-scale periodic multilayered structures.

Utilization of Dip-Pen Nanolithography (DPN) with insulator and conductive materials for the fabrication of filters and couplers.

Since 2008 Development of a simulation program which models the optical properties of micro- and nano-grating structures and their integration with smooth multilayer structures.

4. Grants and awards

4.1 Grants

2007-2009 Supporting Research Scholarship, Ben Gurion University, Department of Electrical and Computer Engineering, $18,000.

5. List of publications

5.1 Peer reviewed papers

Lecturer. Electrical and Electronics Engineering Department, SCE Shamoon College of Engineering:

1. H. Efraim, A. Shapiro, M. Zohar and G. Weiss, " Position Based Visual Servoing of a Micro Aerial Vehicle Operating Indoor," *Journal of Dynamic Systems, Measurement and Control,* 1 – 14, (2018). Doi: 10.1115/1.4040920.
2. Guy Ben Hamu, Dror Shamir, Moshe Zohar, Ariela Burg, "Acceleration of the corrosion reaction of Magnesium with Fenton reagents," *Journal of Coordination Chemistry*, **0**, 1 – 18 (2018). Doi: 10.1080/00958972.2018.1495332.
3. G. Ehrlich, M. Zohar, M. Auslender, R. Avrahamy, and S. Hava, "Optimization of Fabry-Perot Ring Resonator Embedding a Grating Based Mirror," *Opt. Quantum Electron.*, **50**, 48-1 – 10 (2018). Doi: 10.1007/s11082-018-1318-2.
4. M. Zohar, Z. Fradkin, E. Rimon, H. Efraim, M. Auslender, and M. Roitman, "Solar cell efficiency improvement using dip pen nanolithography," *J. Photonics Energy*, **8**, 022503-1 – 13 (2017). Doi: 10.1117/1.JPE.8.022503.
5. M. Zohar, A. R. Azulay, D. Bykhovsky, Z. Fradkin, S. Tapuchi, and M. Auslender, "PDMS deposition for Optical Devices by Dip-Pen Nanolithography" *Macromol. Mater. Eng*., 1700053-1 – 9 (2017). Doi: 10.1002/mame.201700053.
6. M. Zohar, M. Auslender and S. Hava, "Ultrathin high efficiency photodetectors based on subwavelength grating and near-field enhanced absorption," *Nanoscale*, **7**, 5476-5479 (2015). Doi: 10.1039/C4NR07376B.

7. M. Zohar, M. Auslender, L. Faraone, and S. Hava, "New resonant cavity-enhanced absorber structures for mid-infrared detector applications," *Opt. Quantum Electron.*, **44**, 95-102 (2012). Doi: 10.1007/s11082-011-9515-2.

8. M. Zohar, M. Auslender, L. Faraone, and S. Hava, "Novel resonant cavity-enhanced absorber structures for high-efficiency midinfrared photodetector application," *J. Nanophotonics*, **5**, 051824-1 – 15 (2011). Doi:10.1117/1.3634057.

5.2 Articles in refereed conference volumes

Lecturer. Electrical and Electronics Engineering Department, SCE Shamoon College of Engineering:

1. Z. Fradkin, D. Bykhovsky, M. Zohar, A. Azulay, and S. Tapuchi, "Printable Grating Patterns of PDMS by Dip-Pen Nanolithography," in *Science of Electrical Engineering*, pp. 1 – 3, (2016). Doi: 10.1109/ICSEE.2016.7806172.

2. M. Zohar, Z. Fradkin, M. Auslender, and S. Hava, "High Sensitivity Photodetectors based on Nanometer Scaled Periodic Multilayered Structures," in *Numerical Simulation of Optoelectronic Devices (NUSOD)*, pp. 127 – 128, (2016). Doi: 10.1109/NUSOD.2016.7547064.

3. M. Zohar, M. Auslender, and S. Hava, "Ultrathin high efficiency photodetectors based on near field enhanced optical absorption," in *Lasers and Electro-Optics (CLEO)*, pp. 1 – 2, (2015). Doi: 10.1364/CLEO_AT.2015.JTu5A.70.

4. M. Zohar, M. Auslender, L. Faraone, and S. Hava, "Resonance Cavity Enhanced Midinfrared Photodetectors Employing Subwavelength Grating," in *Numerical Simulation of Optoelectronic Devices (NUSOD)*, pp. 25 – 26. Doi: 10.1109/NUSOD.2011.6041118, (2011).

5. M. Zohar, M. Auslender, L. Faraone, and S. Hava, "Grating Mirror Based High Efficiency Optical Resonance Cavity: Application to IR Photodetectors," *Optical Nanostructures for Photovoltaics*, PWB9P-1 – 2, (2010).
URL: https://www.osapublishing.org/abstract.cfm?URI=PV-2010-PWB9P.

5.3 Papers and abstracts – proceedings of conferences

5.3.1 Contributed conference presentations

Lecturer. Electrical and Electronics Engineering Department, SCE Shamoon College of Engineering:

1. E. Rimon, R. Avrahamy, M. Zohar, Z. Fradkin, R. Shikler, S. Hava, Polymethylmethacrylate as an Anti-Reflective Coating for Enhancing Solar Cells Efficiency Using Dip-Pen Nanolithography, The 53 Annual meeting of the institute of chemical engineers, Tel-Aviv, June 2018.

2. Z. Fradkin, M. Roitman, G. Samelson, R. Avrahamy, E. Rimon, S. Hava, Y. Bery, H. Ohana, M. Zohar, Fabrication of Optical Devices by Dip-Pen Nanolithography, Scientific Workshop in Advanced materials, ISRAEL-INDIA, Tel-Aviv, June 2018.

3. Y. Bery, H. Ohana, M. Zohar, Z. Fradkin, M. Roitman, A. Burg, A. Bardea, Enhancing Light Absorption of Semiconductors using Dip-Pen

Nanolithography, Electronic Materials: From Solar Cell to Proteins, Weizmann Institute, May 2018.

4. G. Ehrlich, M. Zohar, M. Auslender, and S. Hava, (2017), Open Triangular Ring Cavity Resonator Integrating a Nanograting Mirror, The 6th International School and Conference on Photonics (PHOTONICA 2017), 28 August – 1 September 2017, Belgrade, Serbia. Book of abstracts, p. 197.
5. R. Avrahamy, M. Zohar, S. Hava, and B. Milgrom, Analysis and Observers Survey for Reduction of Sea Glint Reflection, The 8th International Conference on Photonics, Devices and Systems, 28 – 30 August 2017, Prague, Czech Republic, 2017. Book of abstracts, p. 41.
6. G. Ehrlich, R. Avrahamy, M. Auslender, S. Hava, and M. Zohar, Optimization of Three-Port Optomechanical Resonator Embedding a Meta-Surface Mirror, 17th International Conference of Optoelectronic Devices (NUSOD 2017), 24-28 July, 2017, Copenhagen, Denmark, 2017.
7. L. Danocha, M. Fishera, S. Zohara, Z. Fradkina, M. Zohar, Exploring Poly (Dimethylsiloxane) Ink Solutions for Dot Patterning using Dip-Pen Nanolithography. 52st Israel Institute of Chemical Engineers (IIChE2017), Jun. 26, 2017, Tel Aviv, Israel, 2017.
8. L. Danocha, M. Fishera, O. Yaakobib, S. Zohara, Z. Fradkina, M. Zohar, One-dimensional poly(dimethylsiloxane) dot grating patterns by dip-pen nanolithography, From Molecular Beams to Photosynthesis, 4-5 June 2017, Weizmann Institute of Science, Israel, 2017. Book of abstracts, p. 19.
9. Z. Fradkin, M. Zohar, D. Bykhovsky, G. Samelsohn, A. Demeter, S. Ruschin, Dip pen nanolithography application for grating based photonic devices, FRISNO-14, the 14th European/French Israeli Symposium on Nonlinear and Quantum Optics, 5-10 March 2017, Ein Gedi, Israel, 2017.
10. G. Ehrlich, M. Zohar, M. Auslender, and S. Hava, Optical Ring Resonator Embedding a Metasurface Mirror. Oasis 6 Conference and Exhibition on Optics and Electro-Optics, 27-28 February, 2017, Tel Aviv, Israel, 2017. Book of abstracts, p. 41.
11. G. Ehrlich, M. Zohar, M. Auslender, and S. Hava, Optical Ring Resonator Embedding a Metasurface Mirror. 6th International Topical meeting on Nanophotonics and Metamaterials, 4 – 7 January 2017, Seefeld, Tirol, Austria, 2017.
12. Z. Fradkin, D. Bykhovsky, M. Zohar, A. Azulay, and S. Tapuchi, Printable Grating Patterns of PDMS by Dip-Pen Nanolithography. 2016 ICSEE International Conference on the Science of Electrical Engineering, Nov. 16-18, 2016 Hilton Queen of Sheba, Eilat, Israel, 2016.
13. M. Zohar, Z. Fradkin, M. Auslender, and S. Hava, High Sensitivity Photodetectors based on Nanometer Scaled Periodic Multilayered Structures. 16th International Conference of Optoelectronic Devices (NUSOD 2016), Jul. 11-15, 2016, Sydney, Australia, 2016.
14. A. Azulay, M. Zohar, Z. Fradkin, and S. Tapuchi, One-dimensional grating patterns of poly (dimethylsiloxane) line arrays by dip-pen nanolithography. 51st Israel Institute of Chemical Engineers (IIChE2016), Jun. 21, 2016, Tel Aviv, Israel, 2016.

15. M. Zohar, Z. Fradkin, M. Auslender, and S. Hava, An RCE based NIR PD using a resonant cavity with dual grating mirrors. 5th Spanish Nanophotonics Conference (CEN2016), Jun. 20 – 22, 2016, Valencia, Spain, 2016.
16. M. Zohar, M. Auslender, and S. Hava, Near Field Enhanced Optical Absorption in a New Type of Ultrathin Photodetectors. 5th International Conference on Materials and Applications for Sensors and Transducers (IC-MAST 2015), Sep 27 – 30, 2015, Mykonos, Greece, 2015.
17. M. Zohar, M. Auslender, and S. Hava, Ultrathin high efficiency photodetectors based on near field enhanced optical absorption. Conference on Lasers and Electro-Optics (CLEO), May 10 – 15, 2015, San Jose, California, USA, 2015.

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18. M. Zohar, M. Auslender, and S. Hava, Ultrathin high efficiency photodetectors based on sub-wavelength grating mirror and near field enhanced absorption. Near-Field Optics Nanophotonics and Related Techniques (NFO-13), Aug 31 – Sep 4, 2014, Salt Lake City, Utah, USA, 2014.
19. M. Zohar, M. Auslender, and S. Hava, "Embedding grating mirror in resonant cavity-enhanced absorber structures for mid-infrared detectors applications," French-Israeli Symposium in Physics, March 19-20, 2014, Jerusalem, Israel 2014.
20. M. Zohar, M. Auslender, L. and S. Hava, Embedding-grating mirror in resonant cavity-enhanced absorber structures for mid-infrared detectors applications. Progress in Electromagnetic Research Symposium (PIERS), August 12-15, 2013, Stockholm, Sweden 2013. Program Booklet, p. 34.
21. M. Auslender, M. Zohar, S. Hava, and L. Faraone, Embedding-grating mirror in resonant cavity-enhanced absorber structures for mid-infrared detectors applications. Photonics, Plasmonics and Magnetooptics (PPM a part of ImagineNano 2013), Bilbao, Spain, April 23-26, 2013.
22. M. Zohar, M. Auslender, L. Faraone, and S. Hava, Embedding-grating mirror in resonant cavity-enhanced absorber structures for mid-infrared detectors applications. EOS Annual Meeting (EOSAM 2012), Aberdeen Exhibition and Conference Centre, Scotland, 2012.
23. M. Zohar, M. Auslender, L. Faraone, and S. Hava, Resonance Cavity Enhanced Midinfrared Photodetectors Employing Subwavelength Grating. Numerical Simulation of Optoelectronic Devices Conference, Rome, Italy, 2011.
24. M. Auslender, M. Zohar, and S. Hava, Grating mirror based high efficiency optical resonance cavity. 3rd Mediterranean Conference on Nanophotonics (MediNano-3), Belgrade, Serbia, Oct 18-19, 2010. Book of abstracts, p. 69.
25. M. Zohar, M. Auslender, L. Faraone, and S. Hava, Grating Mirror Based High Efficiency Optical Resonance Cavity: Application to IR Photodetectors. Advanced Photonics/Renewable Energy: OSA optics & Photonics Congress, Karlsruhe, Germany, 2010.
26. M. Zohar, M. Auslender, S. Hava, The Effects of Nano Structure Grating on the Optical Properties of Resonant Cavity – Enhanced IR Photodetectors. Optical Engineering Conference 2010, Jerusalem, Israel, 2010.

6. Courses taught

2007-2014:	Introduction to Electrical Engineering 1, Introduction to Electrical Engineering 2, Introduction to Semiconductor Devices, Electronic Materials, Physics of Semiconductor devices
2007-2009	Optical Communication, Introduction to Information Theory and Error Control Coding, Digital Communication, Electronic Circuits, Power and Industrial Electronics Laboratory, Communication Laboratory
Since 2010	Computer Networks, Nanotechnology, Introduction to Communication Systems, Transmission and Receiving Techniques
Since 2016	Introduction to Microprocessors