

Curriculum Vitae

Rona Shaharabani

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Education

- 2019 Post-doctoral fellow, The Hebrew University of Jerusalem, Israel.
Supervisor: Dr. Aviv Mezer
- 2011-2018 Direct Ph.D. studies in physical chemistry, Tel-Aviv University, Israel.
Research subject: Lipid-protein interaction in myelin sheaths; myelination and demyelination. Supervisor: Prof. Roy Beck. Current grade: 99.2
- 2005-2007 M.Sc. in physical chemistry, Tel-Aviv University, Israel.
Research subject: Molecular electronics; One-dimensional thermoelectric cooling devices. Fabrication of metal nanowires by self-propulsion mechanism. Supervisor: Dr. Yoram Selzer
- 2002-2005 B.Sc. *Cum Laude* in chemistry, Tel-Aviv University, Israel. Grade: 91

Professional Experience

- 2017 Research project on X-ray reflectivity in Prof. Tim Salditt's laboratory at Georg-August-Universität Göttingen Institut für Röntgenphysik, Göttingen, Germany
- 2014-2018 Laboratory instructor, chemistry laboratory 1, School of Chemistry, Tel Aviv University, Israel
- 2011-2017 Teaching assistant, general and physical chemistry, School of Chemistry & Sackler faculty of medicine, Tel Aviv University, Israel
- 2011-2018 Research student at Prof. Roy Beck's biophysics laboratory, School of Chemistry, Tel Aviv University
- 2007-2010 Chemistry teacher, 'Ben-Zvi' high school, Kiryat-Ono, Israel
- 2005-2007 Teaching assistant, general and physical chemistry, School of Chemistry & Sackler Faculty of Medicine, Tel Aviv University, Israel
- 2004-2005 Research project in crystallography, solving organic structures, under the supervision of Prof. Israel Goldberg, Tel Aviv University, Israel
- 2004 Summer school, research workshop for excellent students Tel Aviv University, Israel
- 2000-2002 Military service, physics teacher, Israel Air Force

Research interests and skills

- Self-assembly processes and phase transitions in biological membranes
- Structural analysis using small- and wide- and grazing-incidence-small- angle X-ray scattering (SAXS/WAXS/GISAXS) techniques both in-house and at synchrotron facilities (EMBL, Germany; Diamond, UK; Soleil, France; Max-Lab, Sweden, Elettra, Italy; Georg-August-Universität Göttingen)
- Electron microscopy techniques such as cryogenic transmission electron microscopy (TEM), scanning electron microscopy (SEM) and atomic force microscopy (AFM)
- Protein purification, recombinant protein, and cloning techniques
- Molecular Electronics: heat conduction and electron transfer through different molecules in different electronic junctions. Low dimensional materials; thermoelectric cooling applications. Metal nanowires growth, chemical, and physical (resistance, conductance, heat transfer, electrical transfer) characterization
- Gained experience working in clean room equipment and microfabrication technologies such as photolithography, evaporation, mask aligner, E-beam lithography, wire bonder and profilometer

Honors and scholarships

- 2018 Women in Chemistry Forum Award – Scholarship for Travel Expenses to Find Postdoctoral Position
- 2018 The Women in Chemistry Israel conference Prize for Excellent Poster
- 2017 Sagol School of Neuroscience International Conference Attendance scholarship
- 2017 The Herbert and Sharon Glazer Fund – Excellence Award
- 2017 The Fred Chaoul 11th Annual Nano Workshop prize for Excellent Poster
- 2017 Sagol School of Neuroscience Collaboration between Laboratory Travel scholarship
- 2016 The Center for Nanoscience and Nanotechnology International Conference Attendance scholarship
- 2016 The Sieratzki Prize for Advances in Neuroscience for Excellent Poster
- 2016 Sagol School of Neuroscience International Conference Attendance scholarship
- 2015 The Center for Nanoscience and Nanotechnology International Conference Attendance scholarship
- 2014 School of Chemistry International Conference Attendance scholarship
- 2006 B.Sc. *Cum Laude*, School of Chemistry, Tel Aviv University, Israel
- 2005 Faculty of Exact Sciences, Honors Dean's list
- 1998 Excellence award from the President of the State of Israel, Ezer Weizmann and his wife Reuma Weizmann for Contribution to the Community

Outreach and professional activities

- 2018 First Annual Israeli Female research conference – Women in Chemistry Israel 2018, organizing committee
- 2018 The Dov Lautman Unit for Science Oriented Youth – Shattering glass ceiling program lab instructor
- 2017 IVS-MRS 2017 student conference, organizing committee
- 2017 Organizing, preparing and instructing Materials Research Society (MRS) outreach activity to undergraduate students "introducing undergraduate students to advanced characterization techniques". In order to teach undergraduate students how to design a scientific experiment from the beginning and introduce them to advanced characterization techniques available at the Tel-Aviv University Center for Nanoscience and Nanotechnology
- 2016-2017 Instructor in Materials Research Society (MRS) outreach activity exposing kids from kindergarten up to high-school students on the importance of chemistry and nanotechnology via experiments and demonstrations both at Tel-Aviv University Center for Nanoscience and Nanotechnology and by visiting their schools
- 2016-2018 The Dov Lautman Unit for Science Oriented Youth in Tel Aviv University lecturer on biophysics and nanotechnology
- 2015-2017 Introducing the Tel-Aviv University Center for Nanoscience and Nanotechnology to high school students from less well-off regions. The students' visit includes a tour of the various labs and exciting scientific demonstrations. The purpose of the visit is to encourage students to proceed to academic studies
- 2014 TAU Open House, Tel Aviv University open house for bachelor studies and master's studies. Introducing Tel-Aviv University Center for Nanoscience and Nanotechnology, Exact Sciences and Chemistry school for students pursuing academic studies
- 2013 TAU Science Night, Tel Aviv University Science Night for all ages, demonstrations of scientific experiments with the participation of the audience, and lab tours

Society Memberships

- 2018 Tel Aviv University MRS student chapter **president**
- 2018 Israel Physical Society (IPS) member
- 2018 American Chemical Society (ACS) member
- 2017 Tel Aviv University MRS student chapter **president**
- 2017 Israel Physical Society (IPS) member
- 2016-2018 Material Research Society member

2016 Tel Aviv University MRS student chapter **treasurer**
2014 Israel Physical Society (IPS) member

Funding

- Securing Materials Research Society Foundation Special Projects Grant for: “Introducing Undergraduate Students to Advanced Characterization Techniques”
- Securing Funds for the IVS-MRS 2017 student conference from the Tel-Aviv University Center for Nanoscience and Nanotechnology, the Engineering faculty, and from the Exact science faculty

Publications list

1. Rona Shaharabani, Maor Ram-On, Yeshayahu Talmon & Roy Beck, *Pathological Transitions in Myelin Membrane Driven by Environmental and Multiple Sclerosis Conditions*, PNAS, 2018, 115 (44), pp 11156-11161
2. Gili Abramov*, Rona Shaharabani*, Omry Morag, Ram Avinery, Anat Haimovich, Inbal Oz, Roy Beck, Amir Goldbourt. *Structural Effects of Single Mutations in a Filamentous Viral Capsid Across Multiple Length Scales*, Biomacromolecules, 2017, 18 (8), pp 2258-2266. *Equal contribution
3. Assaf Harnoy, Marina Buzhor, Einat Tirosh, Rona Shaharabani, Roy Beck, Roey Amir. *A Modular Synthetic Approach for Adjusting the Disassembly Rates of Enzyme-Responsive Polymeric Micelles*, Biomacromolecule, 2017, 18 (4), pp 1218-1228
4. Merav Segal, Ram Avinery, Marina Buzhor, Rona Shaharabani, Assaf Harnoy, Einat Tirosh, Roy Beck, Roey Amir. *Molecular Precision and Enzymatic Degradation: From Readily to Undegradable Polymeric Micelles by Minor Structural Changes*, JACS, 2017, 139 (2), pp 803–810
5. Rona Shaharabani, Maor Ram-On, Ram Avinery, Rina Aharoni, Ruth Arnon, Yeshayahu Talmon & Roy Beck, *Structural Transition in Myelin Membranes as Initiator of Multiple Sclerosis*, JACS, 2016, 138 (37), pp 12159–12165
6. Ido Rosenbaum, Assaf J Harnoy, Einat Tirosh, Marina Buzhor, Merav Segal, Liat Frid, Rona Shaharabani, Ram Avinery, Roy Beck, and Roey J. Amir, *Encapsulation and Covalent Binding of Molecular Payload in Enzymatically Averted Micellar Nanocarriers*, JACS, 2015, 137(6), pp 2276-2284
7. Assaf J. Harnoy, Ido Rosenbaum, Einat Tirosh, Yuval Ebenstein, Rona Shaharabani, Roy beck, Roey J. Amir, *Enzyme-Responsive Amphiphilic PEG-Dendron Hybrids and Their Assembly into Smart Micellar Nanocarriers*, JACS, 2014, 136(21), pp. 7531-7534
8. Rona Shaharabani, Saada Reuveni, Gilad Noy, Eyal Shapira, Shira Sedeh and Yoram Selzer, *Fabrication of Very High Aspect Ratio Metal Nanowires by a Self-Propulsion Mechanism*, Nano Lett., 2008, Vol. 8, No. 4, pp. 1169-1173

Conferences and workshops

Talks:

1. IPS Conference 2017 - The Israel Physical Society, Technion Israel Institute of Technology, Israel, 2017. *Multiple Sclerosis Triggers from a Biophysical perspective*
2. IVS (Israel Vacuum Society) 2017 35th Annual Conference, Weizmann Institute of Science, Israel, 2017. *On Multiple Sclerosis and Biophysics*
3. IVS-MRS (Israel Vacuum Society – Material Research Society) 2017 Student Conference, Weizmann Institute of Science, Israel, 2017 *Session chair*
4. IVS-MRS (Israel Vacuum Society – Material Research Society) 2017 Student Conference, Weizmann Institute of Science, Israel, 2017. *Novel Approaches to Multiple Sclerosis: A Biophysical Perspective*
5. Complex Liquids / Nanostructure / Macromolecules seminar, Technion-Israel Institute of Technology, Israel, 2017. *On Multiple Sclerosis and Biophysics*
6. Chemical Physics seminar, department of physical chemistry, Tel Aviv University, Israel, 2017. *On Multiple Sclerosis and Biophysics*
7. The Fred Chaoul 11th Annual Workshop on Nanoscience and Nanotechnology, Daniel Hotel, Dead Sea, Israel, 2017. *A Biophysical Perspective on Multiple Sclerosis Development*
8. Women in Chemistry, Tel Aviv University, Israel, 2017. *Chemistry, Physics, Biology and everything in between*
9. IPS Conference 2016 - The Israel Physical Society, Tel Aviv University Israel, 2016. *The Development of Multiple Sclerosis from a Biophysical Perspective*
10. The 8th Graduate Students' Chemistry Symposium, Ben-Gurion University of the Negev Israel, 2016. *The Development of Multiple Sclerosis from a Biophysical Perspective*
11. IVS-MRS (Israel Vacuum Society – Material Research Society) 2016 Student Conference, Weizmann Institute of Science, Israel, 2016. *Structural instabilities in myelin membranes*
12. FUB-TAU membrane seminar, Freie Universität Berlin, Germany, 2014. *Lipid-Protein Interaction in Myelin sheaths-like complexes*

Poster presentations:

1. Women in Chemistry Israel 2018, Tel Aviv University, Israel, 2018.
2. IPS Conference 2017 - The Israel Physical Society, Technion Israel Institute of Technology, Israel, 2017.
3. Gordon research conferences: soft condensed matter physics, Colby-Sawyer College in New London, NH, United States, 2017.
4. Gordon research seminar: soft condensed matter physics, Colby-Sawyer College in New London, NH, United States, 2017.

5. IVS-MRS (Israel Vacuum Society – Material Research Society) 2017 Student Conference, Weizmann Institute of Science, Israel, 2017.
6. The Fred Chaoul 11th Annual Workshop on Nanoscience and Nanotechnology, Dead Sea, Israel, 2017.
7. International Symposium on Polyelectrolytes (ISP 2016), Moscow, Russia, 2016.
8. The Sieratzki prize for advances in neuroscience ceremony, Tel Aviv University, Israel, 2016.
9. Nanotechnology symposium: the magic of small things, with the 2016 Dan David prize laureates, Tel Aviv University, Israel, 2016.
10. Nano Israel 2016 conference, Tel Aviv University, Israel, 2016.
11. 2nd Sagol School of Neuroscience retreat, Maale Ha Hamisha, Israel, 2016, presenting poster and flash session.
12. Gordon research conferences: soft condensed matter physics, Colby-Sawyer College in New London, NH, United States, 2015.
13. Gordon research seminar: soft condensed matter physics, Colby-Sawyer College in New London, NH, United States, 2015.
14. Israeli Biophysics society (IBS), Bar-Ilan University, Israel, 2014.
15. International Symposium on polyelectrolytes (ISP), from basic science to biological application – Research workshop of the Israel science foundation, Ein Gedi, Israel, 2014, presenting poster and flash session.
16. TAU 1st Biophysics meeting, Hagoshrim Israel, 2012.
17. TAU 8st Annual Nano workshop convention (for nanoscience and nanotechnology), Hagoshrim, Israel, 2012.
18. TAU 7th Annual Nano workshop convention (for nanoscience and nanotechnology), Hagoshrim, Israel, 2011.
19. TAU 4th Annual Nano workshop convention (for nanoscience and nanotechnology), Hagoshrim, Israel, 2007.

Conference attendance and workshops:

1. ELSC Annual Retreat, Kibbutz Ein Gedi, Israel, 2019.
2. Minerva-Gentner Symposia on MR Spectroscopy & Molecular imaging, Weizmann Institute of Science, Israel, 2019.
3. Tel Aviv University (TAU) Ludwig-Maximilians-Universität München (LMU) Workshop on Biophysics, Tel Aviv University, Israel, 2018.
4. TAU-NYU Symposium - Tel Aviv University-New York University: New Horizons in Chemistry: From Fundamentals to Applications, Tel Aviv University, Israel, 2018.
5. Fyl Fest- A symposium on soft matter in honor of Professor Phil Pincus, Weizmann Institute of Science, Israel, 2016.

6. BioSoft Frontiers: Physics of Soft and Biological Matter Research Workshop of the Israel Science Foundation, 2016, Weizmann Institute of Science and Tel Aviv University, Israel.
7. Protein expression and characterization workshop, Weizmann Institute of Science, Israel, 2014.
8. Mini-symposium on Soft Matter, Weizmann Institute of Science, Israel, 2012.
9. The Israel Physical Society (IPS), Technion Israel Institute of Technology, Israel, 2011.
10. Unique molecular effects in electronic materials and devices, Minerva School, Zefat, Israel, 2007.