

Renana Gershoni Poranne

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Professional Experience

- since 2021 **Assistant Professor** Technion – Israel Institute of Technology
- since 2019 **Branco Weiss Fellow** ETH Zürich, Technion – Israel Institute of Technology
- 2017-2021 **Group Leader / "Habilitation"** within the group of Prof. Peter Chen, ETH Zürich
- 2015-2017 **Postdoctoral Researcher** with Prof. Peter Chen, ETH Zürich

Education

- 2010-2015 **Ph.D.** — Schulich Faculty of Chemistry, Technion, Israel.
Thesis: *Aromatic Systems*
Advisor: Prof. Amnon Stanger
- 2007-2010 **M.Sc. (Summa cum Laude)** — Schulich Faculty of Chemistry, Technion, Israel.
Thesis: *Novel Corannulene-Aryl Ethers as Pentagonal Building Blocks for Superstructures*
Advisor: Prof. Ehud Keinan
- 2004-2007 **B.Sc. (Summa cum Laude)** — Schulich Faculty of Chemistry, Technion, Israel.
Major: *Molecular Biochemistry*

Fellowships

- 2021 Career Advancement Chair
- 2019 Branco Weiss Fellowship – Society in Science
- 2016-2018 The VATAT Fellowship for Excellent Female Post-Doctoral Scholars
- 2012-2014 The Schulich Fellowship for Excellence in Graduate Studies - Ph.D.
- 2007-2009 The Schulich Fellowship for Excellence in Graduate Studies - M.Sc.

Honors and Awards

- 2018 Junior Scientist Participation award to attend the '53rd Bürgenstock Conference'
- 2017 Poster Award at GRC Physical Organic Chemistry; Poster chosen for talk
- 2015 The Weissman and Jacknow Prize for Continued Excellence in Teaching
- 2014 The Schulich Prize for Excellence in Teaching
- 2014 Vivian Konigsberg Award for Continued Excellence in Teaching
- 2013 Selected to be a participant in the 63rd Lindau Nobel Laureates Meeting (Chemistry)
- 2013 Selected to be a participant in the 1st Global Young Scientists Summit, Singapore
- 2013 Sandor Szego Award for Excellence in Teaching
- 2012 The Schulich Prize for Excellence in Teaching
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- 2009 Sandor Szego Award for Excellence in Teaching
- 2009 The Schulich Prize for Excellence in Teaching
- 2008-2009 Sharett Foundation Scholarship for Excellence in Music – Singing

- 2008 Vivian Konigsberg Award for Excellence in Teaching
- 2007 Schulich Prize for Excellence in Undergraduate Studies
- 2007 Knesset (Israeli Parliament) Award for Excellent Undergraduate Students
- 2007-2008 Sharett Foundation Scholarship for Excellence in Music – Singing (*with distinction*)
- 2004-2007 President of the Technion's Award for Excellence in Studies, 5 semesters (*top 3%*)

Supervision of Students

Ph.D. Theses.....

- current** Alexandra Wahab (ETH Zürich)
Inverse Design of Polycyclic Aromatic Hydrocarbons

M.Sc. Theses.....

- 2019-2020 Stefan Feusi (ETH Zürich)
On the Origin of Additive Aromaticity: Current Density and Molecular Orbital Analyses
- 2016-2017 Eno Paenurk (ETH Zürich)
Theoretical Study of Metallophilic Interaction in d^8 - d^{10} Complexes

M.Sc. Semester Projects.....

- current** Dominic Egger (ETH Zürich)
Jahn-Teller Distortion in Triplet-State Polybenzenoid Hydrocarbons
- 2020 Lara Pfuderer (ETH Zürich)
Correlations between xTB and B3LYP for Enabling High Throughput Data Generation
- 2019 Greta Markert (ETH Zürich)
NICS-XY-Scans of Triplet-State Polycyclic Aromatic Hydrocarbons
- 2019 Stefan Feusi (ETH Zürich)
PREDI-XY: Automated Generation of NICS-XY Scans with Additivity
- 2018 Patrick Finkelstein (ETH Zürich)
Additive Aromaticity: The Heteroatom Case

Teaching Experience – Summarized

At ETH Zurich.....

- 2018-2021 Lecturer – *Organic Chemistry IV: Physical Organic Chemistry*

At Technion.....

- 2009-2015 Senior Teaching Assistant – *Principles of Chemistry A; Principles of Chemistry B; Organic Chemistry Expanded 1; Organic Chemistry Expanded 2; Structure Determination by Physical Methods*
- 2008-2009 Teaching Assistant and Lab Instructor – *Principles of Chemistry A; Principles of Chemistry B*

Oral Presentations at International Conferences

Habilitation Period - Independent Research.....

9. **(Invited Talk)** TBD
CBOND2022, the 3rd Symposium on Chemical Bonding — Amsterdam, The Netherlands 2022
8. **(Invited Talk)** From Electronic Structure of Organics to Organic Electronics
Gordon Research Conference Physical Organic Chemistry — Holderness, NH, USA June, 2021
7. **(Invited Talk)** Patterns in Aromaticity of Triplet State Polycyclic Aromatic Hydrocarbons

International Conference on Excited State Aromaticity and Antiaromaticity — Sigtuna, Sweden **2019**

6. **(Invited Talk)** Predictive Aromaticity and Predicting Aromaticity
Aromaticity 2018 — Riviera Maya, Mexico **2018**
5. The Predictive Power of Aromaticity
International Symposium on Reactive Intermediates and Unusual Molecules (ISRIUM) — M. Verita, Switzerland **2018**
4. Additive Aromaticity in One, Two, and Three Dimensions
IUPAC International Conference on Physical Organic Chemistry (ICPOC) — Faro, Portugal **2018**

Postdoctoral Period.....

3. **(Poster Prize Talk)** Additivity with NICS-XY-Scans
Gordon Research Conference on Physical Organic Chemistry — Holderness, NH, USA **2017**

PhD Period.....

2. The NICS-XY-Scan: Identification of Global and Local Ring Currents in Polycyclic Systems
Schulich Graduate Students Symposium — Technion, Haifa, Israel **2014**
1. Is There a Correlation Between the Induced Ring Currents and the Aromatic Stabilization Energies of the [N]Phenylenes?
Lise Meitner – Minerva Center for Computational Chemistry Symposium — Hebrew University, Jerusalem, Israel **2012**

Selected Poster Presentations

This list details poster presentations from the past five years only.

Habilitation Period (Independent Research).....

6. Patterns in Aromaticity of Triplet Polycyclic Aromatic Hydrocarbons
Gordon Research Conference on Physical Organic Chemistry — Holderness, NH, USA **2019**
5. PREDI-XY: An Automated System for Generation of NICS-XY Scans with Additivity
Gordon Research Conference on Physical Organic Chemistry — Holderness, NH, USA **2019**
4. Additive Aromaticity: The Heteroatom Case
International Symposium on Reactive Intermediates and Unusual Molecules — Monte Verita, Switzerland **2018**
3. Additive Aromaticity in One, Two, and Three Dimensions
53rd Bürgenstock Conference — Brunnen, Switzerland **2018**
2. Additivity with NICS-XY-Scans — *poster award; chosen for short talk*
Gordon Research Conference on Physical Organic Chemistry — Holderness, NH, USA **2017**

Postdoctoral Period.....

1. The C-N⁺ Bonds in Amine and Ammonium Compounds are Charge-Shift Bonds
SPP 1807 Fall Meeting — Köln, Germany **2016**

Recent Publications in Peer-Reviewed Journals

This list details recent selected publications only. For a complete list of publications, please download the corresponding file [here](#).

Note: * denotes corresponding author.

10. Greta Markert, Eno Paenurk, and Renana Gershoni-Poranne*
Prediction of Spin Density, Baird-Antiaromaticity, and Singlet-Triplet Energy Gap in Triplet-State Polybenzenoid Systems from Simple Structural Motifs
Chemistry - A European Journal, **2021**, *Accepted Article*.
Selected for a Cover Feature
9. Eno Paenurk, Stefan Feusi, and Renana Gershoni-Poranne*
Predicting bond-currents in polybenzenoid hydrocarbons with an additivity scheme
Journal of Chemical Physics, **2021**, *154*, 024110.
Invited contribution for the Issue Honoring Women in Chemical Physics and Physical Chemistry
8. Tobias Schnitzer, Eno Paenurk, Nils Trapp, Renana Gershoni-Poranne, and Helma Wennemers
Peptide–Metal Frameworks with Metal Strings Guided by Dispersion Interactions
Journal of the American Chemical Society, **2021**, *143*, 644-648.
7. Alexandra Wahab, Felix Fleckenstein, Stefan Feusi, and Renana Gershoni-Poranne*
Predi-XY: A Python program for automated generation of NICS-XY-Scans based on an Additivity Scheme
Electronic Structure, **2020**, *2*, 047002..
Invited contribution for the Emerging Leaders issue
6. Ephrath Solel, Doron Pappo, Ofer Reany, Tom Mejuch, Renana Gershoni-Poranne, Mark Botoshansky, Amnon Stanger, and Ehud Keinan
Flat corannulene: when a transition state becomes a stable molecule
Chemical Science, **2020**, *11*, 13015-13025.
Selected for a Cover Feature
5. Sarah Eichenberger, Moritz Hönig, Matthieu J. R. Richter, R. Gershoni-Poranne,* and Erick M. Carreira*
Ring-fused cyclobutanes via cycloisomerization of alkylidenecyclopropane acylsilanes
Chemical Science, **2020**, *11*, 5294-5298.
4. Z. Zhou, R. K. Kawade, Z. Wei, F. Kuriakose, Ö. Üngör, M. Jo, M. Shatruk, R. Gershoni-Poranne,* M. A. Petrukhina,* and I. V. Alabugin*
Negative charge as a lens for concentrating antiaromaticity: using pentagonal "defect" and helicene strain for cyclizations
Angewandte Chemie Int. Ed., **2020**, *59*, 1256-1262.
3. P. Finkelstein and R. Gershoni-Poranne*
An Additivity Scheme for Aromaticity: The Heteroatom Case
ChemPhysChem **2019**, *20*, 1508-1520.
2. R. Gershoni-Poranne,* A. P. Rahalkar, and A. Stanger*
The Predictive Power of Aromaticity: Quantitative Correlation between Aromaticity and Ionization Potentials and HOMO-LUMO Gaps in Oligomers of Benzene, Pyrrole, Furan, and Thiophene
Physical Chemistry Chemical Physics **2018**, *20*, 14808-14817.
1. R. Gershoni-Poranne*
Piecing it Together: An Additivity Scheme for Aromaticity using NICS-XY-Scans
Chemistry – A European Journal **2018**, *24*, 4165-4172.

Academic Contributions

Reviewer for:

- *Nature Chemistry*
- *Journal of the American Chemical Society*
- *Angewandte Chemie*
- *ChemistryOpen*
- *Journal of the American Society for Mass Spectrometry*
- *Journal of Chemical Information and Modeling*
- *Organic Letters*
- *Journal of Organic Chemistry*
- *European Journal of Organic Chemistry*
- *Tetrahedron*
- *Physical Chemistry Chemical Physics*
- *Journal of Physical Chemistry*
- *Chemical Physics Letters*

Since 2020 Member of the Editorial Advisory Board of *ChemistryOpen*

2018 Coauthor of an invited Conference Report on the 2018 ISRIUM Conference for CHIMIA

2018 Coauthor of an invited Conference Report on the 53rd Bürgenstock Conference for CHIMIA

2018-2019 Vice-Chairperson of the Society for Women in Natural Sciences, ETH Zurich

2011-2013 Chairperson of the Organizing Committee, 5th, 6th and 7th Schulich Graduate Symposium

2009-2010 Member of the Organizing Committee, 3rd and 4th Schulich Graduate Symposium

Teaching Experience – Expanded

At ETH Zurich.....

Semester	Job	Course
Spring 2021	Lecturer	Organic Chemistry IV: Physical Organic Chemistry
Spring 2020	Lecturer	Organic Chemistry IV: Physical Organic Chemistry
Spring 2019	Lecturer	Organic Chemistry IV: Physical Organic Chemistry
Spring 2018	Lecturer	Organic Chemistry IV: Physical Organic Chemistry

At Technion.....

Semester	Job	Course	Score (of 5)
Winter 2015	Senior Teaching Assistant	Structure Determination Phys. Methods	4.84
Spring 2014	Senior Teaching Assistant	Organic Chemistry 2, Expanded	4.72
Winter 2014	Senior Teaching Assistant	Structure Determination Phys. Methods	4.44
Winter 2014	Senior Teaching Assistant	Organic Chemistry 1, Expanded	4.69
Spring 2013	Senior Teaching Assistant	Organic Chemistry 2, Expanded	4.67
Spring 2013	Senior Teaching Assistant	Structure Determination Phys. Methods	4.64
Winter 2013	Senior Teaching Assistant	Organic Chemistry 1, Expanded	4.58
Spring 2012	Senior Teaching Assistant	Organic Chemistry 2, Expanded	4.80
Spring 2012	Senior Teaching Assistant	Structure Determination Phys. Methods	4.73
Winter 2012	Senior Teaching Assistant	Principles of Chemistry A	4.31
Spring 2011	Senior Teaching Assistant	Organic Chemistry 2, Expanded	4.67
Spring 2010	Teaching Assistant	Organic Chemistry 2, Expanded	4.76
Winter 2010	Senior Teaching Assistant	Structure Determination Phys. Methods	4.94
Winter 2010	Teaching Assistant	Organic Chemistry 1, Expanded	4.67
Spring 2009	Teaching Assistant and Lab Instructor	Principles of Chemistry B	4.27
Winter 2009	Senior Teaching Assistant	Organic Chemistry 1, Expanded	4.83
Winter 2009	Teaching Assistant	Principles of Chemistry A	4.13
Spring 2008	Teaching Assistant and Lab Instructor	Principles of Chemistry B	4.79
Winter 2008	Teaching Assistant and Lab Instructor	Principles of Chemistry A	4.24