

Liel SapirEmail: liel.sapir@biu.ac.il | Cell: +972-54-7589977 | Harav Uziel 75, Jerusalem, Israel, 9642353**Positions**

2024-	Senior Lecturer, Department of Chemistry, Bar-Ilan University
2019-2023	Post-doctoral Associate, Duke University, NC, USA. Advisor: Prof. Michael Rubinstein.
2017-2019	Post-doctoral Fellow, Technion-Israel Institute of Technology, Israel. Advisor: Prof. Shelly Tzlil.

Education

2011-2017	Ph.D. in physical chemistry, Hebrew University of Jerusalem, Israel. Advisor: Prof. Daniel Harries.
2009-2011	M.Sc. in physical chemistry, Hebrew University of Jerusalem, Israel. Advisor: Prof. Daniel Harries.
2006-2009	B.Sc. in chemistry and biology program and Amirim honors program, 2009, Hebrew University of Jerusalem, Israel. <i>Summa Cum Laude</i> .

Honors, Prizes and Scholarships

2024	Start-up grant for new faculty in the fields of Energy and Sustainability (by the Planning and Budgeting Committee, VATAT, of the Council for Higher Education)
2024	Materials Chemistry Horizon Prize (The Royal Society of Chemistry), awarded to the collaboration responsible "for demonstrating the potential and impact of embedded mechanochemical reactivity on the mechanical limits of cross-linked polymer networks"
2017-2018	Aly Kaufman Post Doctoral Fellowship (Technion)
2017	Hans Wiener Award for excellent PhD thesis
2016	Prize for excellent students from the Hebrew University Center for Nanoscience and Nanotechnology
2014	Prof. Rahamimoff Travel Grant for Young Scientists of the US-Israel Binational Science Foundation (BSF)
2012-2016	Adams Fellow (The Israeli Academy of Sciences and Humanities)
2012	Lifshitz award for PhD students (The School of Chemistry, the Hebrew University)
2012	Aharon and Ephraim Katzir Fellowship (Batsheva de Rothschild Fund, the Israel Academy of Sciences and Humanities)
2011	Marcus award for MSc students (The School of Chemistry, the Hebrew University)
2011	Rector award for MSc students
2010, 2011	University excellence scholarship for MSc students
2008, 2009	Amirim (honors class) scholarship
2008, 2009	Einstein scholarship
2008, 2009	Rector award for BSc students
2008, 2009, 2010	Dean's list for BSc students.

Publications

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1. L. Peri, D. Matzov, D.R. Huxley, A. Rainish, F. Fierro, **L. Sapir**, T. Pfeiffer, L. Waterloo, H. Huebner, Y. Peleg, P. Gmeiner, P. McCormick, D. Weikert, M.Y. Niv, and M. Shalev-Benami. A bitter anti-inflammatory drug binds at two distinct sites of a human bitter taste GPCR. *Nature Comm.*, 15, 9991, **2024**.
 2. **L. Sapir**, D. Chen, and M. Rubinstein. Strain Stiffening of Flexible Polymer Chains. Preprint: <https://doi.org/10.26434/chemrxiv-2023-fllc8>, **2024**.
 3. **L. Sapir**, J. Brock, D. Chen, Q. Liao, S. Panyukov, and M. Rubinstein. How a chain can be extended while its bonds are compressed. *ACS Macro Lett.*, 12, 894-900, **2023**.
 4. S. Wang, Y. Hu, T. B. Kouznetsova, **L. Sapir**, D. Chen, A. Herzog-Arbeitman, J. A. Johnson, M. Rubinstein, and S. L. Craig. Facile Mechanochemical Cycloreversion of Polymer Cross-linkers Enhances Tear Resistance. *Science*, 380, 1248-1252, **2023**.

5. D. Chen, S. Panyukov, **L. Sapir**, and M. Rubinstein. Elasticity of Slide-ring Gels. *ACS Macro Lett.*, 12, 362-368, **2023**.
6. S. L. Speer, C. J. Stewart, **L. Sapir**, D. Harries, and G. J. Pielak, Macromolecular Crowding Is More than Hard-Core Repulsions. *Annu. Rev. Biophys.* 51, 267-300, **2022**.
7. G. I. Olgenblum, F. Wien, **L. Sapir**, and D. Harries, β -Hairpin Miniprotein Stabilization in Trehalose Glass Is Facilitated by an Emergent Compact Non-Native State. *J. Phys. Chem. Lett.* 12, 7659-7664, **2021**.
8. S. P. O. Danielsen, H. K. Beech, S. Wang, B. M. El-Zaatari, X. Wang, **L. Sapir**, T. Ouchi, Z. Wang, P. N. Johnson, Y. Hu, D. J. Lundberg, G. Stoychev, S. L. Craig, J. A. Johnson, J. A. Kalow, B. D. Olsen, M. Rubinstein. Molecular Characterization of Polymer Networks. *Chem. Rev.* 121, 5042-5092, **2021**.
9. **L. Sapir**, D. Harries. Restructuring a Deep Eutectic Solvent by Water: The Nanostructure of Hydrated Choline Chloride/Urea. *J. Chem. Theo. Comp.* 16, 3335-3342, **2020**.
10. G. I. Olgenblum*, **L. Sapir***, and D. Harries, Properties of Aqueous Trehalose Mixtures: Glass Transition and Hydrogen Bonding. *J. Chem. Theo. Comp.* 16, 1249-1262, **2020**. *Equal contribution.
11. A. Hassan, **L. Sapir**, I. Nitsan, R.T. Greenblatt Ben-El, N. Halachmi, A. Salzberg, and S. Tzlil. A Change in ECM Composition Affects Sensory Organ Mechanics and Function. *Cell Reports* 27, 2272-2280, **2019**.
12. H. Viner, I. Nitsan, **L. Sapir**, S. Drori, and S. Tzlil. Mechanical Communication Acts as a Noise Filter. *iScience* 14, 58-68, **2019**.
13. **L. Sapir**, S. Tzlil. Talking Over the Extracellular Matrix: How do Cells Communicate Mechanically? *Sem. Cell Dev. Biol.* 71, 99-105, **2017**.
14. **L. Sapir**, D. Harries. Wisdom of the Crowd. *Bunsen-Magazin*. 19, 152-162, **2017**.
15. **L. Sapir**, D. Harries. Revisiting Hydrogen Bond Thermodynamics in Molecular Simulations. *J. Chem. Theo. Comp.* 13, 2851-2857, **2017**.
16. E. Meirzadeh*, **L. Sapir***, H. Cohen, SR. Cohen, D. Ehre, D. Harries, M. Lahav, I. Lubomirsky. Nonclassical Crystal Growth as Explanation for the Riddle of Polarity in Centrosymmetric Glycine Crystals. *J. Am. Chem. Soc.* 138, 14756-14763, **2016**. *Equal contribution.
17. **L. Sapir**, C.B. Stanley, D. Harries. Properties of Polyvinylpyrrolidone in a Deep Eutectic Solvent. *J. Phys. Chem. A* 120, 3253-3259, **2016**.
18. **L. Sapir**, D. Harries. Macromolecular Compaction by Mixed Solutions: Bridging versus Depletion Attraction. *Curr. Opin. Coll. Int. Sci.* 22, 80-87, **2016**.
19. S. Sukenik, **L. Sapir**, D. Harries, Osmolyte induced changes to peptide conformational ensemble correlate with slower amyloid aggregation: a coarse-grained simulation study. *J. Chem. Theo. Comp.* 11, 5918-5928, **2015**.
20. **L. Sapir**, D. Harries. Macromolecular Stabilization by Excluded Cosolutes: Mean Field Theory of Crowded Solutions. *J. Chem. Theo. Comp.* 11, 3478-3490, **2015**.
21. **L. Sapir**, D. Harries. Is the depletion force entropic? Molecular crowding beyond steric interactions. *Curr. Opin. Coll. Int. Sci.* 20, 3-10, **2015**.
22. **L. Sapir**, D. Harries. Origin of enthalpic depletion forces. *J. Phys. Chem. Lett.* 5, 1061-1065, **2014**.
23. S. Sukenik*, **L. Sapir***, D. Harries. Balance of enthalpy and entropy in depletion forces. *Curr. Opin. Coll. Int. Sci.* 18, 495-501, **2013**. *Equal contribution.
24. S. Sukenik, **L. Sapir**, R. Gilman-Politi, D. Harries. Diversity in the mechanisms of cosolute action on biomolecular processes. *Faraday Disc.* 160, 225-237, **2013**.
25. **L. Sapir**, D. Harries. Linking Trehalose Self-Association with Binary Aqueous Solution Equation of State. *J. Phys. Chem. B* 115, 624-634, **2011**.
26. R. Politi, **L. Sapir**, D. Harries. The impact of polyols on water structure in solution: A computational study. *J. Phys. Chem. A* 113, 7548-7555, **2009**.