

Liel Sapir

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Personal

Born 28 June, 1984, in Jerusalem, Israel.

Married to Tamar Rozett, History PhD student at the Hebrew University

Father to Omer

Education

- 2019- Post-doctoral associate, the Department of Mechanical Engineering and Materials Science, Duke University, NC, USA. Advisor: Prof. Michael Rubinstein.
- 2017-2019 Post-doctoral fellow, Technion-Israel Institute of Technology, Israel. Advisor: Prof. Shelly Tzlil.
- 2011-2017 PhD (direct track) in physical chemistry, Hebrew University of Jerusalem, Israel. Advisor: Prof. Daniel Harries. Title: "Biomacromolecules in Complex Solutions".
- 2009-2011 MSc in physical chemistry, Hebrew University of Jerusalem, Israel. Advisor: Prof. Daniel Harries. Title: "The Influence of Trehalose on Peptide Folding".
- 2006-2009 BSc in chemistry and biology program and Amirim honors program, 2009, Hebrew University of Jerusalem, Israel. *Summa Cum Laude*.

Teaching Experience

- 2020 Teaching Assistant, Introduction to Polymer Physics, Duke University, Durham, NC.
- 2014-2015 Teaching Assistant, Physical Chemistry C, The Hebrew University, Jerusalem, Israel.
- 2010-2015 Teaching Assistant, Physical Chemistry B - Thermodynamics, The Hebrew University, Jerusalem, Israel.
- 2012 Teaching Assistant, Physical Chemistry A, The Hebrew University, Jerusalem, Israel.
- 2011 Teaching Assistant, Statistical Thermodynamics and Applications, The Hebrew University, Jerusalem, Israel.
- 2010-2011 Teaching Assistant, Avnei-Pina - Intermolecular Interactions: Not Just a Matter of Chemistry (transdisciplinary course in chemistry), The Hebrew University, Jerusalem, Israel.
- 2009 Teaching Assistant, General Chemistry for Biology Students, The Hebrew University, Jerusalem, Israel.

Honors, Prizes and Scholarships

- 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

- **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**.
- 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.
- 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**.
- H. Viner, I. Nitsan, **L. Sapir**, S. Drori, and S. Tzlil. Mechanical Communication Acts as a Noise Filter. *iScience* 14, 58–68, **2019**.
- **L. Sapir**, S. Tzlil. Talking Over the Extracellular Matrix: How do Cells Communicate Mechanically? *Sem. Cell Dev. Biol.* 71, 99-105, **2017**.
- **L. Sapir**, D. Harries. Wisdom of the Crowd. *Bunsen-Magazin.* 19, 152-162, **2017**.
- **L. Sapir**, D. Harries. Revisiting Hydrogen Bond Thermodynamics in Molecular Simulations. *J. Chem. Theo. Comp.* 13, 2851-2857, **2017**.
- E. Meirzadeh*, **L. Sapir***, H. Cohen, S.R. 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.
- **L. Sapir**, C.B. Stanley, D. Harries. Properties of Polyvinylpyrrolidone in a Deep Eutectic Solvent. *J. Phys. Chem. A.* 120, 3253–3259, **2016**.
- **L. Sapir**, D. Harries. Macromolecular Compaction by Mixed Solutions: Bridging versus Depletion Attraction. *Curr. Opin. Coll. Int. Sci.* 22, 80-87, **2016**.
- 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**.
- **L. Sapir**, D. Harries. Macromolecular Stabilization by Excluded Cosolutes: Mean Field Theory of Crowded Solutions. *J. Chem. Theo. Comp.* 11, 3478-3490, **2015**.
- **L. Sapir**, D. Harries. Is the depletion force entropic? Molecular crowding beyond steric interactions. *Curr. Opin. Coll. Int. Sci.* 20, 3-10, **2015**.
- **L. Sapir**, D. Harries. Origin of enthalpic depletion forces. *J. Phys. Chem. Lett.* 5, 1061-1065, **2014**.
- 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.
- 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**.
- **L. Sapir**, D. Harries. Linking Trehalose Self-Association with Binary Aqueous Solution Equation of State. *J. Phys. Chem. B* 115, 624-634, **2011**.
- 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**.

Lectures and Seminars

- “Calculation of depletion forces”, a practical tutorial in the summer school: “Self-Assembled Structures with Functional Properties”. Technische Universität, Berlin, Germany, July **2017**.
- "How do cosolutes stabilize macromolecules? From bridging to depletion attraction", The Annual Conference of The Hebrew University Center for Nanoscience and Nanotechnology, Hagoshrim, Israel, April **2016**. *Invited*.
- "The origin of depletion forces: Entropy vs. enthalpy", Macromolecular crowding workshop, Telluride Science Research Center, Telluride, Colorado June **2015**.
- "The origin of depletion forces: entropy vs. enthalpy", The Annual Conference of The Hebrew University Center for Nanoscience and Nanotechnology, Ashkelon, Israel, March **2015**. *Invited*.
- "Enthalpic Depletion Forces in Complex Solutions", Exploring Solvation Science, The 572nd Wilhelm und Else Heraeus Seminar, Bad Honnef, Germany, October **2014**.
- "Enthalpic Depletion Forces in Complex Solutions", 28th Conference of the European Colloid and Interface Society, Limassol, Cyprus, September **2014**.
- "How osmolytes induce enthalpic protein stabilization", 10th International Conference on Protein Stabilization, Stresa, Italy, May **2014**.
- “Linking Trehalose Self-Association with Solution Equation of State”, Marcus Award Lecture, Institute of Chemistry Seminar, The Hebrew University, Jerusalem, Israel, April **2011**. *Invited*.