החברה הישראלית לכימיה
THE ISRAEL CHEMICAL SOCIETY
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Dear ICS members,

It is my great pleasure to announce that the winners of the 2023 ICS Prize for an Excellent Graduate Student are **Itamar Liberman** (Ben-Gurion University), **Poulami Mukherjee** (Ariel University), **Ilan Shumilin (**The Hebrew University), **Benjamin Sorkin** (Tel-Aviv University), **Tamar Wolf** (Weizmann Institute of Science), **Anna Yucknovsky** (Technion), and **Shani Zev** (Bar-Ilan University).



**Itamar Liberman** Ben-Gurion University | **Poulami Mukherjee** Ariel University | **Ilan Shumilin** The Hebrew University | **Benjamin Sorkin** Tel Aviv University | **Tamar Wolf** Weizmann Institute | **Anna Yucknovsky** Technion | **Shani Zev** Bar-Ilan University

**Itamar Liberman** was born in 1990 and raised in Mitzpe Netofa. Following his military service in the Givati brigade, he obtained a dual degree in chemistry and biology from the Hebrew University. For his M.Sc. and Ph.D., he joined the group of Idan Hod at Ben-Gurion University (2018), working on Metal-Organic Frameworks (MOFs) for sustainable fuel production. He obtained his M.Sc. *cum laude* and won the Dian prize for M.Sc. student. His research aims to understand and improve the electrochemical performance of MOFs toward their utilization in circular solar fuel production. He engages those characteristics using scanning electrochemical microscopy (SECM) to investigate MOF-derived materials in situ. He combines the synthetic and analytical capabilities of SECM to fabricate MOF-based electrocatalysts and subsequently study their catalytic performance in a localized fashion. Itamar won the Rector prize, Negev, and K.K.L. climate scholarship.

**Poulami Mukherjee** was born in 1996 in West Bengal, India, and completed her B.Sc. in Chemistry at the University of Calcutta (2017) and M.Sc. in Inorganic Chemistry with distinction from the same university (2019). She started her Ph.D. at Ariel University under Professors Tomer Zidki and Michael Zinigrad, developing hybrid MOF-based nanostructures for electrocatalytic applications. Her work involves synthesizing hybrid materials by combining transition metal-based Prussian blue analogs with transition metal dichalcogenides to enhance their energy storage and conversion capabilities. Mukherjee has published eight research papers. She was a visiting research scholar at Texas A&M University and is now continuing her research in Japan.

**Ilan Shumilin** was born in 1995 in Jerusalem and attended the Ort Henri Ronson High School in Ashkelon. He obtained his B.Sc. in chemistry from the Hebrew University (2017) and his M.Sc. (2017-2019) at the Hebrew University under Prof. Daniel Harries. He continues to pursue a Ph.D. in the same group, working on resolving the mechanism of the concerted action of cellular osmolytes on chromatolecular self-assembly.

**Benjamin Sorkin** was born in Petah Tikva in 2001 and grew up in Netanya. He obtained his B.Sc. in Biology and Chemistry (2021) from Tel Aviv University and then began his Ph.D. under Professors Haim Diamant (Tel Aviv University) and Gil Ariel (of Bar-Ilan University). He developed a robust method to infer the entropy of a system from measurements of structural correlations. It led to the discovery of novel transitions in non-equilibrium systems ranging from jammed colloids to swarming bacteria. Recently, he proved a surprising relation between the entropy of a system and its late-time dynamics, which is valid arbitrarily far from equilibrium and applicable to transport coefficients. Currently, he is exploring the relation between entropy production and the second law of thermodynamics in systems where the temperature is ill-defined. In addition, Benjamin has collaborated with Prof. David S. Dean (University of Bordeaux) on the late-time behavior of single-file diffusion in spatially inhomogeneous systems and with Prof. Thomas A. Witten (University of Chicago) on the collective behavior of nonlinear oscillators when noise-induced synchronization is unachievable. Benjamin won the Princeton Center of Theoretical Sciences postdoctoral fellowship and will join Princeton in 2024.

**Tamar Wolf** was born in Jerusalem in 1989 and received her B.Sc. in Chemistry from the Hebrew University (Summa Cum Laude, 2013) and M.Sc. (2016) from Weizmann Institute. Her Ph.D. (2023) under Prof. Lucio Frydman developed state-of-the-art NMR experiments to tackle the challenges of low sensitivity and poor resolution in solid-state NMR. Her methods enhance the sensitivity of NMR severalfold by using dipolar and quadrupolar spin interactions, thus allowing the retrieval of new information about the local structure and molecular dynamics of small molecules, pharmaceuticals, and energy-storage materials. She won the Rector's Prize and Amirim honors program during her B.Sc., was elected for the David Lopatie Fellows program, and received the Susan Sapir Memorial Prize, the Clore Scholarship, and a Perlman grant for student-initiated research. She received the first Shimon Vega ENC travel award. She published as the first author in JACS, J. Phys. Chem. C and Solid-State NMR.

**Anna Yucknovsky** was born in Kyiv, Ukraine. She received her B.Sc. in Chemistry from the Open University, M.Sc. (2019), and Ph.D. (2023) in Chemistry from the Technion under Prof. Nadav Amdursky. Her research focuses on photoacids and photobases. These molecules can become strong acids and bases only upon light absorption and, consequently, change the pH of the surroundings. Hence, they can be considered good candidates for mediating light stimulation into pH-sensitive processes. She has developed several dynamic chemical systems with versatile functionalities controlled with light, including nanoparticles capable of reversible self-assembly, oil droplets capable of self-propulsion, and electrochemical cells with switchable current polarity. She has developed a chemical reaction with controllable pathways and demonstrated the advantage of photoacids and photobases in their reversible interaction with pH-sensitive substances. She won the Ariane de Rothschild Women Doctoral fellowship (2019-2023).

**Shani Zev** was born in 1994 and grew up in Netanya. She received her B.Sc. in Biophysics (cum laude) from Bar-Ilan University and her M.Sc. under the supervision of Prof. Dan Major, studying the biosynthesis of terpene molecules inside nano-capsules using computational chemistry tools. That work yielded two high-impact papers. She continued her Ph.D. in the same group, focusing on synthesizing terpenes by enzymes using multiscale modeling tools. She applies advanced computational chemistry methods and data processing techniques to explain the main catalytic effect of these enzymes. Her computational work agrees with the experimental results and sheds light on the mechanism of terpenes in enzymes and nano-capsules. She received the Dean's Prize, BINA's Excellence Fellowship, the Harry Friedmann Fellowship, the Data-Science Institute Fellowship, the Navon Fellowship of the Ministry of Science for excellent Ph.D. students, the Rector's Award for outstanding research students, and the Katz Fellowship.

The ICS award ceremony will take place in the evening of April 3, 2024, during the 87th ICS Meeting.

Congratulations to Itamar, Poulami, Ilan, Benjamin, Tamar, Anna, and Shani on their achievements!

Ehud Keinan