



Dear ICS members,

It is my great pleasure to announce that the winners of the 2017 ICS Prize for an Excellent Graduate Student are (from left to right): **Renata Balgley** (Weizmann Institute), **Andrii Bazylevich** (Ariel University), **Samer Gnaim** (Tel Aviv University), **Barak Hirshberg** (Hebrew University), **Muhammad Jbara** (Technion), **Vijay Kumar** (Bar-Ilan University) and **Ahiud Morag** (Ben-Gurion University).

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**Renata Balgley** was born in Ukraine (1988), received her B.Sc. *Cum Laude* in Chemistry and Biology from Tel Aviv University (2011) and continued to PhD (direct track) with Prof. Milko van der Boom in the Weizmann Institute. She designed a series of complex molecule-based interfaces with controllable electron-transfer pathways. Subsequently, she studied the mechanism underlying the formation of these unique materials and extracted important fundamental information about the diffusion of small molecules and fabricated photovoltaic devices. She published her findings mainly in *Angewandte Chemie* and *JACS* and presented at conferences in Israel, Korea, Germany and Italy.

**Andrii Bazylevich** develops with Prof. Gary Gellerman anticancer drugs that are connected to fluorescent chemosensors by different biodegradable linkers. These are useful modalities for conjugation to potential carriers for fluorescent monitoring in drug delivery models. The visualized drug release triggered by lytic environments on the basis of "switch on" fluorescence of the fluorophore moiety offers a versatile fluorophore platform for the fluorescent observation of drug delivery. Andrii investigated and optimized the fluorescent monitoring of drug release in vitro and in vivo, quantum yield and other spectroscopic characteristics of these novel fluorophore-drug peptide conjugates.

**Samer Gnaim** was born in Baqa El-Garbia (1991), received his B.Sc. in Chemistry and Biology from Tel Aviv University with distinction (2013) and continued to direct track to Ph.D. with Prof. Doron Shabat. His research focuses on the development of novel stimuli-responsive conjugates for diagnostic and therapeutic uses in medicine. He developed a new reagent for preparation of drug analogs, which can introduce a distinct functional group on heterocyclic chemotherapeutic drugs that enables bioconjugation to targeted delivery systems. The reagent was recently commercialized by Sigma-Aldrich. He also developed chemiluminescent self-immolative dendrimeric polymers, which can be applied in signal amplification.

**Barak Hirshberg** develops with R. Benny Gerber theoretical methods as well as applications of existing state-of-the-art methods to problems in atmospheric chemistry. He found that carbonic acid has a crucial role in determining the pH of the oceans, suggesting a new formation mechanism of carbonic acid on the surface of ice clusters and liquid water. He also found that  $N_2O_5$  is an atmospheric sink for NOx pollutants, through its hydrolysis on aerosols. Additionally, he developed a new tool for describing nuclear quantum effects in molecular dynamics simulations. The method was applied for calculating the vibrational spectroscopy of biological building blocks.

**Muhammad Jbara** works under the supervision of Prof. Ashraf Brik on the development of new chemical tools for efficient chemical synthesis of modified histone proteins to understand the molecular basis in epigenetics. He discovered novel chemical approaches using palladium complexes to facilitate the chemical synthesis of various challenging proteins such as Histones. He has published 14 papers in high profile journals, including *Nature chemistry*, *Cell*, *JACS*, *Angew. Chem.* and *Org. Lett.* Muhammad won the Vatat Fellowship, the Schulich Excellence Prize for Graduate Students and the US-Israel Binational Science Foundation (BSF) Travel Grant for Young Scientists.

**Vijay Kumar** was born in India in 1986. He focuses on the sonication of molten metals together with Prof. Aharon Gedanken. The liquid metals were overlaid by organic liquids, such as silicon oil, and this technique was applied to seven metals whose melting point is lower than 430 °C. Vijay first treated the precipitate that was formed at temperatures even 50 °C higher than the melting point. He analyzed the results and found that the supernatant contains Metal@Carbon-Dots, which are further investigated and characterized by this research.

**Ahiud Morag** works with Prof. Raz Jelinek on the self-assembly and applications of free standing porous electrodes, which are composed of metals and graphene oxide, exhibiting high conductivity and high active surface area. The main objective of this work has been the use of such electrodes for the fabrication of high areal energy density supercapacitors. Ahiud work has published in *Advanced Materials*, *Advanced Functional Materials*, *ChemSusChem* and other journals. He received a B.Sc. *cum laude* in chemical engineering and B.Sc./M.Sc. *cum laude* in chemistry, all from Ben Gurion University.

The award ceremony will take place in February 13, 2018 in the 83<sup>rd</sup> ICS Annual Meeting.  
Congratulations to Renata, Andrii, Samer, Barak, Muhammad, Vijay and Ahiud for their achievements!

Ehud Keinan