החברה הישראלית לכימיה
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Dear ICS members,

It is my great pleasure announcing that the 2019 ICS Excellent Young Scientist Prize will be awarded to **Prof. Charles E. Diesendruck** of the Schulich Faculty of Chemistry, Technion – Israel Institute of Technology, for his studies on tuning the mechanical response of polymers at the molecular level.

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Prof. Charles E. Diesendruck

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Charles was born in 1980 in Palo Alto, CA, USA, and grew up in Sao Paulo, Brazil. He immigrated to Israel in 1999 and started working in the production line of Chemada Fine Chemicals before his undergraduate studies at Ben-Gurion University of the Negev. He received his BSc in Chemistry in 2003 and then served in the Materials Department of the IDF Navy where he first learned about polymer chemistry. He returned to Chemada as a project manager during part of his graduate studies at Ben-Gurion University. His MSc and PhD (2011) with Prof. N. Gabriel Lemcoff focused on the use of bimetallic catalysts that bind bifunctional substrates in order to carry out concurrent reactions leading to cyclic dimers. In addition, he studied latent olefin metathesis catalysts, combining theory with experiments. His 3-year postdoctoral research with Prof. Jeffrey S. Moore at the University of Illinois at Urbana-Champaign focused on the development of mechanophores and self-healing materials. In 2014 he joined the Schulich Faculty of Chemistry at the Technion, focusing his research on polymer mechanochemistry, the relation between molecular arrangement and mechanical properties, and the chemical degradation of polyelectrolytes.

Charles and his group evolve synthetic polymers towards adaptable functions by using different chemistries to fold the chains and tune the intra- and intermolecular interactions rather than changing monomers. This bio-inspired notion is based on the observation that Nature uses polymers for almost any function using very limited repertoir of monomers. Focusing on mechanical response, his group was able to make polymers that are practically indestructible under stress in solution, plastics with nearly infinite stretchability, and synthetic molecular springs capable of autonomous refolding. In addition, they took on the hard challenge of understanding the accelerated decomposition of polyelectrolytes in alkaline fuel cells. Using classic physical-organic-chemistry concepts they were able to understand and reproduce the aggressive dry and alkaline environment of an operating alkaline fuel cell. In addition to the improvement of fuel cells they have also exploited their findings in the development of new chemical transformations.

The award ceremony will take place in February 18, 2020 during the gala dinner of the 85th ICS Annual Meeting in Jerusalem.

Congratulations to Charles for his achievements!

Ehud Keinan