January 21, 2022

Dear ICS members,

It is my pleasure to announce that the 2021 ICS-Adama Prize for Technological Innovation will be awarded to Prof. Raz Jelinek of the Ben-Gurion University of the Negev for implementing conjugated chromatic polymers as color sensors, and for using carbon quantum dots and nanoscale gold assemblies for biological imaging, and electro-optic devices.

Prof. Raz Jelinek
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Raz Jelinek was born in Beer Sheva, Israel (1964), obtained his B.Sc. (summa cum laude, 1988) from the Hebrew University, and Ph.D. (1988-1993) from the University of California, Berkeley, under Alexander Pines, working on “Double Rotation NMR Studies of Zeolites and Aluminophosphate Molecular Sieves.” After postdoc research (1993-96) at the University of Pennsylvania, he joined the Department of Chemistry at Ben-Gurion University. In 2005-2007 he served as the Department Chairman, and currently, he is Vice President and Dean for Research & Development of BGU. He is incumbent of the Carole and Barry Kaye Chair in Applied Science, has published over 220 research papers (h-index 49), 15 patents, and 6 books.

Raz is a world leader in the field of conjugated chromatic polymers, such as polydiacetylenes, which his group has implemented as color sensors for water pollutants, volatile organic compounds, proteins, and other biological molecules, as well as mechanical sensing of soft polymers. He is also a leader in the rapidly expanding carbon quantum dots (C-dots) field. He has demonstrated their utilization as biological and chemical sensors, cell imaging agents, bacterial detection, and membrane interactions screening biomolecules. In addition, Raz has worked on self-assembled organized nanoscale gold assemblies and patented technology was implemented for fabricating various electro-optic devices, including transparent electrodes, antennas, supercapacitors, and physiological pressure sensors. His recent technology allows identifying therapeutic molecules in probiotic fermented microbiota, exhibiting remarkable anti-inflammatory properties. The technology has been translated to a startup company, which has raised a $3.5M investment from a prominent VC fund. Another technology employing C-dot-based capacitive e-nose for contactless bacterial detection through their volatile metabolites constitutes the basis for another startup company in the process of fundraising.

Raz has been awarded numerous grants focused on his applied science work, including three Kamin projects on transparent electrode technology, porous Au/graphene oxide systems for supercapacitor applications and a new electronic nose technology. His Ministry of Energy grant focuses on energy storage in server farms. A Nofar project focuses on polydiacetylene-based water pollution sensing, a Magnet project on pharmaceutical screening, a BARD grant on polydiacetylene-based detection of bacteria in agricultural products, and a Horizon-2020 grant on gas sensing of hazardous materials in containers.

The ICS award ceremony will take place on the evening of February 22, 2022, during the 86th ICS Meeting. Congratulations to Raz for his achievements!