



החברה הישראלית לכימיה
THE ISRAEL CHEMICAL SOCIETY

<http://www.chemistry.org.il>

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Dear ICS members,

It is with deep sadness that we announce the passing of Prof. Joel Bernstein of Ben-Gurion University of the Negev on January 2, 2019. Joel was born in Cleveland Ohio in 1941. He obtained his BA degree at Cornell University, and PhD in physical chemistry at Yale University for research on the solid-state spectroscopy of organic compounds. Following two-year postdoctoral stints in X-ray crystallography with Ken Trueblood at UCLA and in organic solid-state chemistry with Gerhardt Schmidt at the Weizmann Institute of Science, he joined the Department of Chemistry of the newly established Ben-Gurion University of the Negev.



Prof. Joel Bernstein
1941 - 2019

The research interests of Prof. Bernstein focused on the organic solid state, with particular emphasis on understanding and utilizing polymorphism, structure-property relationships, hydrogen-bonding patterns and graph sets and organic conducting materials. He has published over 180 research and review articles (one of them has been cited 2124 times) and book chapters and is the sole author of a book entitled "Polymorphism in Molecular Crystals", published by Oxford University Press and translated into Russian. In 1999 he was elected a Fellow of the American Association for the Advancement of Science and has served as a consultant to a number of pharmaceutical companies and as a testifying witness in litigations on the solid-state chemistry of drugs. His career has been punctuated by visiting professorships at the University of Illinois, Cornell University, the University of Minnesota, the University of Barcelona, the University of Bologna and as a visiting scientist at the Cambridge (UK) Crystallographic Data Centre. He was a Professor-at-Large (2010-2011) at the University of Western Australia, Perth, Professor of Chemistry at New York University Abu Dhabi and later became Global Distinguished Professor of Chemistry at that institution.

In recent years he has focused on polymorphism of molecular crystals, and crystal engineering, using the tools of supramolecular chemistry, design and preparation of co-crystals of organic molecules. His group has made significant progress in developing a successful strategy for the controlled preparation of co-crystals with a pre-designed structure by recognizing and utilizing specific intermolecular interactions. Their studies involved a statistical analysis using the Cambridge Structural Database, high level molecular orbital calculations, and proof-of-concept experiments on prototypical model compounds. Many subsequent experiments, designed to exploit the principles demonstrated by the proof-of-concept experiment were successful, while others produced unknown crystal forms. In particular, they have produced a variety of co-crystals of amino-acids, co-crystals between cyclic ethers and ureas, polymorphic co-crystals, and co-crystals with pharmaceutically important compounds.

The Israel Chemical Society, the entire community of Israeli scientists and the world of science mourn the loss of a great scientist.

Ehud Keinan

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