



November 29, 2023

Dear ICS members,

It is with deep sadness announcing that Prof. Asher Schmidt of the Technion Schulich Faculty of Chemistry passed away yesterday, November 28, 2023. The funeral will occur tomorrow, November 30, in the Yarkon cemetery at 14:30 and Shiv'ah at 42A Vitkin Street, Haifa.

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Prof. Asher Schmidt (1955 – 2023)

Asher was born in 1955 in Tel-Aviv, Israel, and received his B.Sc. (1980) from The Hebrew University of Jerusalem, M.Sc. (1984), and Ph.D. with Shimon Vega (1989) from the Weizmann Institute of Science. Following postdoc research with Prof. J. Schaefer at Washington University in St. Louis (1989-1993), he joined the Department of Physics at the University of Connecticut, Storrs, then was an Adjunct Professor at the Faculty of Chemistry at the Technion, and in 1997 became a faculty member in the Technion. In 2021, he was promoted to Full Professor. Asher was a Visiting Professor at Washington University in St. Louis and at the Sorbonne Université in Paris.

Asher's research focused on identifying the structure-function relation in diverse chemical systems at the molecular level, including enzyme active sites as inhibition targets, materials surface sites where binding-adsorption-catalysis occur, and buried interfaces within biomineral or biomimetic composites where macroscopic properties and function are tuned. The unifying theme in these disparate areas stems from capabilities his group has developed and strategies they have devised to zoom spectroscopically on the delicate and intricate details where function takes place and identify the modes of action and mechanisms.

His research led to the rational design of antibiotics and studied surface reactivity, showing that specific binding sites are present on amorphous surfaces of the high surface area silica-based and carbon-based mesoporous materials. He studied biomineral and biomimetic composites and identified the inorganic-bioorganic interfaces and molecular occlusions within amorphous and crystalline inorganic matrices, exposing how they affect formation pathways and regulate the resulting macroscopic properties. He also developed a primary methodology to devise and apply schemes for coherent manipulation to override the averaging of the periodically time-dependent (MAS) Hamiltonians. His recent work focused on deciphering the mechanisms employed by small molecules to control the crystallization and dissolution-recrystallization of calcium carbonates, critical processes of fundamental and technological importance. He collaborated with many groups in Israel, Germany, France, Canada, USA, Australia, and Japan, and multiple groups on the Technion campus, including T. Baasov, N. Adir, Y. Shoham, Y. Apeloig, D. B-Zhivotovskii, Y. Eichen, C. Diesendruck, N. Tessler, M. Narkis, G. Grader, M. Silverstein, and D. Danino.

In the Technion, Asher served as the Head of the Division of Physical and Analytical Chemistry in the Schulich Faculty of Chemistry, headed the Chemistry Research Center, initiated Israel's participation in the International Chemistry Olympiad, and was Head Mentor of the Israeli delegations to Korea and UK. Asher was an admired judge in the Technion's Disciplinary Students Court.

Asher is survived by his wife Tzudit, children Roe and Tomer, grandchildren Eviatar, Kerem, Rotem, Imri, and sister Haya Leonov. The ICS and the entire community of Israeli scientists mourn the untimely loss of a great scientist.

Ehud Keinan