

Prof. Leslie Leiserowitz: Short Biographical note (July 2022)

Leslie Leiserowitz was born in Johannesburg. He studied electrical engineering and Physics at the University of Cape Town. In 1959, he joined the Weizmann Institute of Science, as a PhD student of Gerhard Schmidt, following which, in a short post-doc (1966-1968), he developed X-ray crystallographic methods for the Organic Chemistry Institute, U. of Heidelberg. Leiserowitz returned to the Weizmann Institute, where he worked on revealing the existence of unique inter-molecular bonds between hydrogens bonded to a carbon and oxygen or nitrogen, $C-H\cdots O$ and $C-H\cdots N$, despite a general skepticism. These findings were complemented by developments in the field of co-crystal engineering between organic molecules containing different H-bonding groups.

In the mid-1970s, Leiserowitz began a fruitful collaboration, a lifelong Odyssey, with Meir Lahav. They demonstrated for the first time that the absolute configuration (chirality) of molecules, particularly those of life, such as amino acids, can be derived from their crystal morphologies. They founded the principal links between molecular structure and crystal morphology, by monitoring crystal growth' dynamics, and molecular chirality. They were the first to demonstrate control over the shape of crystals by inhibiting the growth rate of different crystal faces with trace amounts of additives. They have also made pioneering studies in the field of crystalline nanometer-scale films at the water surface. Based on synchrotron X-ray radiation at grazing incidence angle measurements and unique methods they developed, these films were described at near-atomic resolution.

Leiserowitz is currently studying pathological crystallization, including that of cholesterol in blood vessels, and malaria pigment in Plasmodium infected red blood cells.

Among other honors, Leiserowitz has received jointly with Lahav, the Prelog Medal from ETH Zurich (1987), the Gregori Aminoff Prize from the Royal Swedish Academy of Sciences (2002), the Israel Prize (2016), the EMET Prize for Art, Science, and Culture (2018), and the Wolf prize in Chemistry (2021). Leiserowitz became a Member of the German National Academy of Sciences Leopoldina in 1997. Leslie is married to Ruchama and they have three daughters and seven grandchildren.