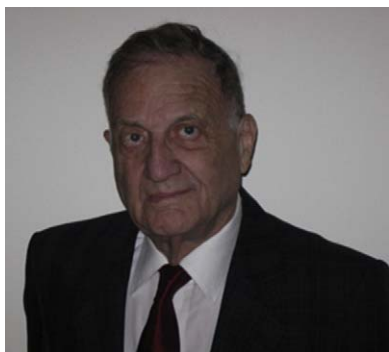




Editorial



Henry Selig comes from a far seeing family and one of their smart moves was to flee Germany, where Henry was born, just in time—in 1939. As many others they found in the USA a new home where Henry, in 1949 earned a B.Sc. in mathematics at the University of Chicago. He continued to his PhD, which was devoted to nuclear chemistry, at what is now known as the Carnegie-Mellon University. In 1953 he took up a position at the Argonne National Laboratories (ANL) where he worked on a classified project for seven years. Being blessed with curious nature, however, he established an additional research line of his own and so he tried to measure the half-life of the nuclide Re^{187} which was presumed to be radioactive with a very long half life. Because of the low energy of the beta emitted by Re^{187} it was necessary to measure the activity in the gaseous state and one of the few volatile compounds of rhenium reported in the literature was $\text{Re}(\text{CH}_3)_3$. As it turned out, this compound did not exist and so Selig tried to prepare the volatile ReF_6 . Instead, this collaboration with Sherman Fried and John Malm resulted in the synthesis of the unknown ReF_7 .

Thus, inadvertently had begun the career of Selig as a fluorine chemist. At this point Selig was able to leave the classified project and devoted himself fully to fluorine chemistry. In the course of time Selig in collaboration with ANL colleagues synthesized the previously unknown compounds TcF_6 and RuF_6 as well as pure ReF_6 . Further, Selig and coworkers devoted themselves to studying the properties of these hexafluorides as well as other transition metal fluorides with emphasis on the use of vibrational spectroscopy.

Another phenomenal discovery of Selig together with his colleagues Howard Claassen and John Malm was the synthesis of XeF_4 . This followed the sensational oxidation of xenon by PtF_6 by Neil Bartlett which has been labeled as one of the major chemical discoveries of the 20th century. Selig and coworkers continued research in the chemistry of the noble gases and synthesized

salt-like compounds containing until then unknown moieties KrF^+ , XeOF_3^+ , XeOF_5^- , XeF_5^+ , XeF_7^- and XeF_8^{2-} .

In 1967, looking as always for new roads in life, Henry moved to the Hebrew University in Jerusalem where he took up the position of Professor of Chemistry. In this position Selig continued his studies in fluorine chemistry emphasizing reactions in anhydrous HF and synthesizing a number of compounds including new oxonium salts. In addition he investigated the impact of fluorine chemistry on some of the so-called synthetic metals such as graphite intercalation compounds and doped polyacetylenes. These compounds exhibited remarkably enhanced electrical conductivities. Of note is the synthesis of the graphite intercalation compound C_8AsF_5 whose electrical conductivity per weight exceeded that of copper. This discovery helped instigate a new series of symposia called Symposia on Graphite Intercalation Compounds. One of these symposia convened in Jerusalem in 1987 as well as the Eighth European Fluorine symposium hosted by Selig and coworkers in Jerusalem in 1983. In addition, Selig studied the reactions and intercalation of fluorine compounds with graphite fibers. The results promise practical applications in the study of certain composite materials. One other research project of interest was the fluorination of the then newly discovered buckminsterfullerenes of which the prototype is C_{60} , in pursuit of the elusive fully fluorinated $\text{C}_{60}\text{F}_{60}$. While this compound was found to be fleeting specie in mass spectroscopy it was impossible to isolate it in macro quantities

Selig retired in 1995 (mandatory retirement), but continued to work in fluorine chemistry mainly in collaboration with Hebrew University colleagues. Prof. Karl Christe, Loker Professor of Chemistry at the University of Southern California said that he has known Selig for 40 years and has followed his work very closely. According to him “he is one of the most underrated scientists and the most underrated fluorine chemist he knows. For his entire career, he has carried out brilliant research in fluorine chemistry but, due to his unassuming and humble personality, he has never received the public recognition which he deserves”.

In 2009 Selig was awarded the American Chemical Society Award for Creative Work in Fluorine Chemistry.

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