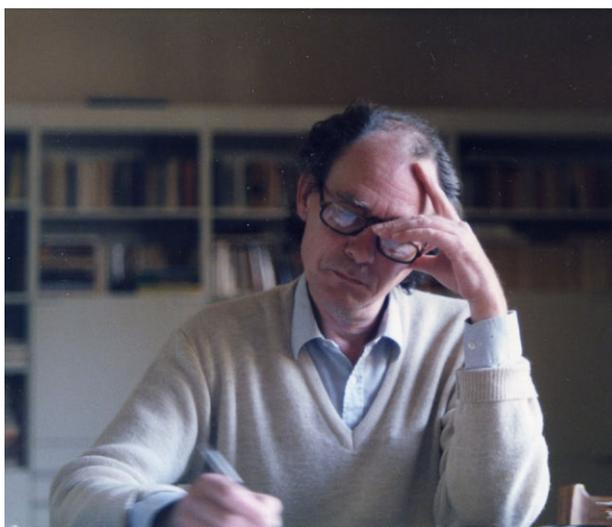


Wim J. van der Hart, April 17, 1935–March 10, 2009



Wim Jacobus van der Hart was born in Rotterdam, The Netherlands. After having finished his high school education in 1952 at the St. Franciscus College in Rotterdam, he studied chemistry at the University of Leiden, The Netherlands, where he received his bachelor's degree in 1959 and his master's degree cum laude in theoretical organic chemistry in 1961 with Professor Luitzen J. Oosterhoff. Subsequently, he completed his Ph.D. in 1968 under the guidance of Professor Oosterhoff, and published his Ph.D. thesis, entitled: "Proton Splittings in Electron Spin Resonance Spectroscopy."

During that period Dr. van der Hart met Jopie A. van der Hoek who also studied theoretical organic chemistry at the University of Leiden and to whom he was married in December 1964 in Leiden, The Netherlands.

Dr. van der Hart and his wife raised two sons, Hugo and Jaap.

Following his Ph.D. study, Dr. van der Hart was appointed as Assistant Professor, and in 1984 as Associate Professor in organic chemistry at the University of Leiden, where he spent his whole career until his retirement in 1997. My first contact with Wim dates from the beginning of the 1970s. He had built a drift-cell ion cyclotron resonance (ICR) mass spectrometer from commercially available and in-house designed components with the aim to study the chemistry of ions with

neutral molecules in the gas phase. My own group had then purchased a drift-cell Varian V-9503 ICR mass spectrometer on the basis of a grant awarded in 1970 by the chemistry division of The Netherlands Organization for Pure Research (SON/ZWO). We both were interested to study and determine intrinsic properties; Wim was particularly interested in those organic molecules that were important in the theoretical research that took place in the group of Professor Oosterhoff. Our strong motivation for such research had been induced by the work of Professor John I. Brauman of the University of Stanford, California, USA, who had shown that the gas-phase basicity order of simple aliphatic amines was opposite to that in the liquid phase, owing to solvent effects that obscured the intrinsic properties of the amines.

Initially, Dr. van der Hart studied in cooperation with Dr. Jan van Thuijl of the University of Leiden some aromatic substitution reactions and obtained interesting results. However, following the development of the ICR ion trap, Wim very soon changed his research interest to photodissociation of ions by use of lasers. This was because one interest in mass spectrometry was rapidly growing, namely, the determination of the structures, in terms of atom connectivity of gas-phase ions that were formed and that often showed a mysterious behavior. Various techniques had been developed, such as collision-induced dissociation to obtain insight in and/or elucidate these structures. Photodissociation turned out to be a unique, and for some types of ions (e.g., aliphatic and aromatic hydrocarbon ions), a very powerful method for ion structure identification. In combination

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with theoretical calculations, it became a powerful approach. These types of ions are known in mass spectrometry to be very complex systems owing to the many rearrangements they undergo.

The research of Wim on the photodissociation of ionized benzene and many of its isomers coupled to theoretical calculations provided a much deeper insight into the underlying chemistry of occurring rearrangements and associated potential energy surfaces than existed prior. In this way he had developed himself as the European top-expert in the field of photodissociation and an international expert, along with his American colleague, Professor Robert C. Dunbar of Case Western Reserve University, Cleveland, Ohio, with whom he had several contacts.

Wim presented his work at the two-week NATO Advanced Study Institutes, held every four years and mostly at remote places in the non-NATO country France. These conferences were limited to about 100 participants, one-half from Europe and the other half from the U.S.A. They were very suited to Wim to present his research results and to discuss them with his colleagues present. I still remember very well that Wim and I discussed extensively our future plans with regard to ICR during long walks at the beach of La Baule, France, in 1978, where then the NATO Advanced Study Institute Conference on Kinetics of Ion/Molecule Reactions took place. Wim wanted to implement the rapid scan method, developed by Professor Robert T. McIver of the University at Irvine, California, U.S.A., on his ICR instrument, whereas I was more interested to build a broad-band Fourier transform ICR spectrometer, which at that time seemed technically possible. We both have been able to pursue our plans successfully, and the resulting instruments were used extensively in our scientific cooperation over the years.

Dr. van der Hart did not like to attend meetings with thousands of participants. However, he has made one exception. That was for the 12th International Mass Spectrometry Conference at Amsterdam in 1991, where he presented an excellent overview lecture on photodissociation. Since the founding of the Institute of Mass Spectrometry at the University of Amsterdam in 1988, Dr. van der Hart also attended very regularly the research presentations of my Ph.D. students, and stimulated them by his valuable comments. At the end of our careers, we had obtained a grant from the chemistry division of The Netherlands Organization of Scientific Research (SON/NWO) for a Ph.D. study project on thermodynamic properties of light excited molecules. Friso W.H. van Amerom performed the nontrivial experiments for this project successfully and obtained his Ph.D. degree with us.

After his retirement, Wim continued to perform theoretical calculations on his computer at home, and we were able to discuss his results regularly, leading to some joint publications. However, two years ago, Wim's physical state became notably weaker, and after he broke his hip in December 2008, he passed away in March 2009 in Oegstgeest, The Netherlands. I will remember Wim as a very capable colleague, but in particular as a close and pleasant friend, and I thank him for the long-standing and enjoyable scientific cooperation we had.

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