

Enrico Clementi was born on November 19, 1931, in Cembra, a small town located 15 miles northeast of Trento. His father was a town clerk and his mother an elementary school teacher. He did his gymnasium studies in Northern Italy during war time and attended lyceum in the immediate post-war period.

Enrico received his doctorate in chemistry from the University of Pavia, where he was a Collegio Cairoli student, in 1954. He then went to Politecnico di Milano to work as a postdoctoral scholar with Giulio Natta who was at the time carrying out seminal research on polyacetylene; Enrico's assignment was to understand the electronic structure of this polymer and characterize its melting point and the mechanism for its conductive properties. His experimental career, however, was quickly brought to an explosive end as it led him to the hospital for minor surgery. Enrico thus embarked on further postdoctoral stays on the theory side and joined successively Michaël Kasha (at Florida State in Tallahassee), Kenneth S. Pitzer (at UC Berkeley), and Robert S. Mulliken (at the University of Chicago).

In 1961, he joined IBM where he was tasked to show that IBM computers could be used for scientific calculations! Enrico hired the initial cohort of computational chemical and material scientists in electronic structure theory and simulation at the IBM Research Center in San Jose. There he took the first steps toward what was to become the IBMOL code. He became the manager of the large-scale scientific computations department from 1967 to 1974 and named IBM Fellow in 1968. His many published contributions at the time include: The tables of atomic functions, the first ab initio electronic structure of six-membered rings and of the four DNA (ATGC) nucleotide bases, the first estimates of the correlation energy in atoms and small molecules and of chemical reaction potential surfaces. The series of papers entitled "Study of the Electronic Structure of Molecules" grew from a first paper in 1967 to number 23 in 2001.

From 1974 to 1979, he went back to Italy to manage the "Dipartimento Calcolo Chimico" at Montedison's Istituto Donegani in Novara. It was the time when he dived into the realm of molecular interactions: Water-water interactions, water interacting with positive and negative ions, and water interacting with molecules of biological interest.

Back to IBM from 1979 to 1991, he pioneered parallel computing in chemistry and scientific engineering at the IBM facilities in Poughkeepsie and Kingston, New York. His fundamental research extended from quantum chemistry to biophysics and fluid dynamics via Monte Carlo and molecular dynamics simulations. He experimented with the LCAP (Loosely Coupled Array of Processors) architectures and the implementation of parallel software for quantum chemistry, molecular dynamics, and computational engineering. In 1991, he retired from IBM to join the University Louis Pasteur in Strasbourg, France, where he was Professor of Chemistry from 1992 to 2000. From 1991 to 1994, he was also part of the Chimica Computazionale research group of CRS4 (Centro di Ricerche, Sviluppo e Studi Superiori in Sardegna) developed with EU funds in Cagliari (Sardinia).

While he officially retired in 2000, he continued to work with his wife and long-time collaborator, Gina Corongiu, then a professor at the University of Como, advancing the HF-CC scheme that combines the Hartree-Fock approach and the Heitler-London approach for correlation corrections.

Clementi's work was recognized by numerous Awards and Honors: IBM Fellow since 1968; Teresiana Gold Medal of the University of Pavia; Fellow of the American Physical Society; Distinguished Research Professor at the Rensselaer Polytechnic Institute, Troy, New York, in

1984; Dirac Medal from WATOC in 1987; Boys Medal of the Royal Society in 1996; Dr. Honoris Causa of the University of Namur in 1998; President of the International Society for Quantum Biology in 2001; Alexander von Humboldt Prize in 2001; Dr. Honoris Causa of the University of Oviedo in 2017. He was an Elected Member of IAQMS since 1994.

His way of thinking was essentially embodied in the Dirac-Schrödinger-Newton-Langevin-Navier-Stokes equations, which allowed him to describe and understand natural systems, particularly motions and trajectories, starting with very small particles and extending the systems to larger and larger space scales, with the ultimate dream of understanding the ways the human brain works. His approach, as he expressed it, wanted to be more than simply interdisciplinary: He wanted to develop a "global simulations approach", a quest that he always led with maximum rigor and realism. Intriguingly, even though he made the greatest part of his career in industry, Enrico always felt that his computer codes should be freely available to any scientist; he defended strongly the non-profit character (or, in other words, the open-source nature) of the algorithms he developed, as testified by his MO(E)TECC initiative. As shown by his last papers, Enrico Clementi was increasingly paying attention to the social and economic development of our modern society. He has published more than 500 papers and 14 books.

Per-Olov Löwdin, one of the five founding members of our Academy, wrote about him: "Enrico Clementi is a scientist with many fascinating sides to his personality, and his friends can tell many stories about his warmth, his self-irony and humor, his concern for the people working with him, his originality and ingenuity, and his love for music and culture – particularly the Italian". Less known were his activities as a painter; some of his oil paintings were exhibited during the 2005 Sanibel Symposium dedicated to him.

Enrico Clementi sadly passed away from a strong infection of the kidneys due to his diabetes on March 30, 2021.