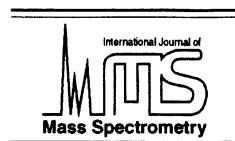




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## Fulvio Cacace: Curriculum Vitae

Fulvio Cacace took his degree in chemistry at the University of Rome in 1954. In 1956, he earned a temporary teaching appointment. He became assistant professor in 1958 and full professor of General and Inorganic Chemistry at the University of Rome "La Sapienza" in 1971. His teaching activity covers stages at the University of Camerino (1965–68) and at the University of Tuscia (1982–1985). He obtained a "libera docenza" in Radiochemistry in 1960 and in Nuclear Chemistry in 1964.

Besides carrying out research activity in his department laboratories, he spent several periods as a research guest at foreign scientific institutions, such as: G. Werner Institute of Nuclear Chemistry, Uppsala, Sweden (1960); Brookhaven National Laboratory, USA (1961–1962, 1968, 1977, 1980, 1982); Kernforschungsanlage (KFA), Juelich, Germany (1972). He also had a teaching and research stage at Irvine, University of California, in 1968.

From 1968 to 1974, Fulvio Cacace directed the Nuclear Chemistry Institute of Italian Research Council (CNR), chairing its Scientific Committee for many years.

Among the many charges he was appointed to, one can remember that he has been the National Coordinator of the strategic CNR Project "Advanced Radiochemical Technologies and Methodologies" and, since 1979, he is a member of the Research Committee at the University of Rome La Sapienza.

In 1990 he received an award from the Italian Chemical Society for his contribution to the Chemical Sciences in the field of structure and reactivity of ions in the gas phase.

He gave his service in the editorial board of many scientific journals, such as: *Gazzetta Chimica Italiana*, *J. Heteroatom Chemistry*, *J. Labeled Compounds and*

Radiopharmaceuticals, *International Journal of Mass Spectrometry and Ion Processes*, *Radiochemical and Radioanalytical Letters*, *Inorganica Chimica Acta*, etc.

Fulvio Cacace co-authored more than 200 papers, reviews, chapters in scientific treatises and textbooks. His research activity concerns the following aspects of gas-phase ion chemistry and radiochemistry:

1. Study of the structure, stability, and reactivity of gaseous ions using the "decay technique." He developed and applied this technique to generate species with exactly defined structure and charge position, in the absence of solvation and counterion. This approach allowed the preparation of otherwise inaccessible ions and the comparison of their reactivity in different media, e.g. gas-phase versus solution systems.
2. Study of gaseous ion chemistry by coupled radiolytic and mass-spectrometric techniques. The results in this field concern, in particular, aromatic alkylation and nitration, and represent a link between theoretical chemistry and ion chemistry in solution. The coupling of radiolytic and mass-spectrometric methods allowed in fact to extend the investigation of gaseous ion–molecule reactions in the atmospheric pressure range.
3. Ab initio calculations and experimental study of the structure, stability and reactivity of simple inorganic ions such as  $\text{H}_2\text{NO}_3^+$ ,  $\text{O}_3\text{H}^+$ , hydrazoic acid, nitric esters, boric and polyboric protonated acids, and anions in the gas phase.
4. Chemical effects of nuclear transformations, reactions of high-energy nucleogenic atoms, isotope exchange reactions and new synthetic approaches to labeled molecules. Among the radionuclides investigated, besides  ${}^3\text{H}$  and  ${}^{14}\text{C}$ , the studies on molecules containing  ${}^{11}\text{C}$ ,  ${}^{13}\text{N}$ ,  ${}^{18}\text{F}$  isotopes led to

the development of diagnostic methods such as PET.

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