



## Giovanni Battista Bonino



Genoa, Italy, 3 May 1899 - 11 Dec. 1985

**Title** Professor of Chemical Physics, University of Bologna, Italy

**Nomination** 23 May 1942

Ordinario di Chimica fisica, Professore di Elettrochimica e Direttore dell'Istituto Chimico dell'Università di Bologna.

Le ricerche scientifiche del Bonino, contenute in circa 150 pubblicazioni in varie Riviste italiane ed estere, si riferiscono in modo speciale a problemi di Chimica organica che il Bonino ha cercato di sviluppare in senso moderno servendosi dei metodi teorici o sperimentali che si riallacciano ai recenti progressi della Chimica fisica. È noto che la Chimica organica, improntata fino a pochi anni fa ad un carattere prevalentemente empirico, che ne rallentava gli ulteriori sviluppi, si è andata rinnovando profondamente; a questo rinnovamento si debbono i progressi sia dal punto di vista puramente scientifico che da quello applicato ed industriale; a questo movimento il Bonino ha dedicato la sua eccezionale attività di ricercatore ottenendo risultati che gli valsero pubblici ed alti riconoscimenti; Accademico d'Italia, Accademico benedettino della Accademia delle Scienze di Bologna, socio di molte altre Accademie e insignito di molti premi, egli è uno dei più insigni chimici italiani.

**Commemoration** – The Academy in its continuous renewal today honours our past Colleagues. I was invited by President Chagas to commemorate Professor G.B. Bonino, professor of Chemistry in Bologna and Genova, who was for many years for his science and wisdom one of the pillars of the Academy. He was born in 1899 and left us at the end of 1985. I had the privilege to be his disciple and friend for many years, which allows me to give of him a quite personal picture.

When in the early thirties I was approaching for the first time the study of chemistry, and in particular of organic chemistry, the name and the work of Professor Bonino, became for me a revelation and a guideline for his new approach to the representation of organic formulae as well as of organic reactions. The reprint of his theory on the structure of benzene, presented at the International Congress of Chemistry of Madrid, was for me – because of its criticism of the standard formulae of Kekule – extremely stimulating for the proposed way to interpret the substitution rules in the benzene ring.

At that time, young chemists looked for a more rational approach to the reaction mechanisms in organic chemistry. Bonino elaborated a theory on a modern physico-chemical basis, which represented – with the idea of electron delocalisation – a substantial advance in the approach to chemical problems.

Although the complete theory of the reaction mechanisms was developed later in Great Britain by Robinson, Ingold and Hinshelwood, we must be grateful to Bonino for his pioneering work. In order to find an experimental confirmation of his theory, Bonino dedicated himself, stimulating also his coworkers, to the study of molecular spectroscopy – mainly the use of infra-red spectroscopy, which was just at its beginning in those years, for interpreting the true chemical structures. Also Raman spectroscopy was for him a means to understanding the molecular structure of many products.

His work represented in the late thirties a real change in the approach to the dynamic studies of organic molecules, establishing new models now generally accepted. For his authority in the field of physical-chemistry he was also involved in the study of solid states and alloys. His scientific approach was that the theoretical aspect was the starting point for experimental evidence and even for practical applications.

I will not give here a scientific curriculum of Bonino's work, but I should like to mention that he has opened important fields of research in chemistry and has formed, as all true scientists, an important school. Bonino had other interests than scientific ones. Talking with him, one could realize his profound humanistic and philosophical formation. His knowledge did not seem to have any boundaries. Evidence of this aspect is seen in lectures given on the occasion of such great events as Avogadro's centenary, the landing of man on the moon, in which he was able to permeate facts, figures, formulas and experimental data with philosophical knowledge and historical criticism. I was often amazed, in talking with him, by his wisdom, not only his science, and I compared him in my mind with the men of the XV century who through their thought and action made our Renaissance spread out from the towns of Italy to Europe and to the world.

The problems of the two cultures faced today by scientists and humanists did not exist for him. He may be considered an example of the successful compenetration of the cultural and scientific horizons of mankind. He was a believer – I apologize for going into this most delicate aspect of his personality – and as a believer he accepted with resignation the most severe events of his life.

He had a very clear idea regarding the present world. More than once he told me that the disarray of our modern society was due to the lack of spirituality, and the fact that "people are too much preoccupied with material goods and human promotion and have forgotten about eternal life". He was aware of the present uncertainties of modern society, due, in his opinion, mainly to the difficulties of our present way of thinking, in adsorbing the new results of science and technology. He believed that these effects influenced even the religious spirit and said that we would need in the present times a powerful mind – like Saint Thomas Aquinas – "to coordinate in a new body the spiritual and the new science".

Bonino was appointed to the Academy in 1942: he always served very actively, also as a member of the Council for twenty years. Although in the last few years he could not attend the meetings, owing to his health conditions, he was always interested in the Academy's activity and generous with suggestions in order to promote new initiatives in science.

The Academy has lost one of its most distinguished members who contributed so much to its development. We have lost a friend. His name and memory are part of the history of Science.

Giovanni Battista Marini-Bettòlo