

Perspective

MIȘU BÎRZESCU – ATYPICAL PERSONALITY

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Praised as a teacher and dedicated researcher, Mihail Bîrzescu did not have what is conventionally called “an academic career”, the term “career” being associated especially with its negative connotations.

He was a graduate of “Nicolae Bălcescu” High School from Râmnicu Vâlcea. Being a passionate researcher, he affirms himself right from the first faculty year. As a student he communicated and published his first paper “Depunerea electrolitică a cuprului folosind ca electrolit fenol – sulfat de cupru (Electrolytic deposition of copper using phenol – copper sulfate as electrolyte)” in 1963. During his professional development he took advantage of exceptional scholars, like Ilie Murgulescu, Gheorghe Spacu and Maria Brezeanu, from whom he inherited an ongoing need for self-training and high standards, according to the belief that *it is always the teacher who learns the most*.

After graduation, in 1964 he became a teacher at the Department of Inorganic Chemistry from the Faculty of Industrial Chemistry, Polytechnic Institute of Timisoara. He contributed to the professional training as chemical engineers of 40 generations of students.

For all forms of teaching activity - lectures, seminars and laboratory applications - he was concerned about the modernization of the educational process, or the content and the means aspect, in agreement with the contemporary knowledge and methodologies advancement. The proofs: initiation of a seminars program, development and installation of Inorganic Chemistry practical applications, organization of the Analytical Chemistry laboratory and eight didactical works.

It is also remarkable its essential contribution to the book “*Chimie anorganică: aplicații practice și numerice (Inorganic chemistry: practical and numerical applications)*”. This work, developed with his steady colleague and collaborator Mircea Niculescu and published posthumously in 2014, is a culmination of the authors' concern to provide students with a study material at the level of the scientific progress and of current teaching means and procedures. The basic idea of the course is the systematic, coherent exposure of the content, with interdisciplinary character, where the emphasis is put less on the information storage but which implies instead a participatory understanding.

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In this book the authors also proceeded to a rational selection from a vast material presented in the developed lectures and in agreement with the extra teaching experience related to changes in the educational plans and programs and with the availability for the study of an audience consisting of fresh high school graduates with shaky training and questionable fundamental knowledge in chemistry. Compared to the original manuscript, they have reduced many notes, comments and corrections to avoid a thick text which would have invited to its memorizing as a whole.

One statement arises during the conversations Mihail Bîrzescu had with C. Noica at Păltiniș: “Everyone dreams, craves an idea, no matter how small it may be, it is important to be yours.” Referring to the chemical research, he invoked the need for a responsible commitment, the investigator dealing with visible things using his mind or through imagination, being exposed to corrections, confirmations or denials by practical experiments. Mișu’s “small” but original idea consisted in the discovery of a nickel - silica gel catalyst obtained by a new method and a new reaction type and with various technical applications.

In the '90s, the achievement of concurrent results has forced the postponement of his doctoral thesis defense by seven years, seeking new developments and confirmation of his own idea. He extended and intensified his interdisciplinary collaborations (inorganic and organic chemistry, physical chemistry, electrochemistry, and physics), participation in projects, contracts, patents, communications and publications.

He considered students as privileged subjects in his teaching and research work, while showing full availability for his colleagues: “wasteful” of knowledge and ideas, he generously offered his own results. In the post-revolutionary period many of them would know spectacular ascensions in the academic career, both deserved and formally based (scores, good-looking CV), masking their professional and scientific inconsistency.

The self-demanding, scientific rigor and strong ethics led him to make from his doctoral work the opera of a long consecration to provide value and confirmation.

Mihail Bîrzescu:

- graduates from “Nicolae Bălcescu” High School in Râmnicu Vâlcea (1959);
- conducts activities in the students’ scientific group and publishes his first paper: “*Electrolytic deposition of copper using phenol – copper sulfate as electrolyte*” (1963);
- takes advantage of eminent professors: Ilie Murgulescu, Gheorghe Spacu, and Maria Brezeanu; assumes the belief that “*the teacher is the one who learns the most*”;
- since 1964, he prepares forty generations of students at the Faculty of Industrial Chemistry in Timișoara; among his didactic contributions: upgrades all educational process activities (courses, seminars, practical applications) by content and means, in accordance with the progress of knowledge and methodologies, initiates a seminars program, modernizes applications, organizes the Analytical Chemistry laboratory, co-authors eight didactic works.
- the 2014 course book is a selective and coherent compression of the continuously developed lectures, which does not strictly reproduce the manuscript, giving up of notes, cards, notebooks; it makes possible for the development of a modern chemistry of complex combinations course; it shows high demand for content, text, chemical language, bibliography annotated with critical remarks; it regards the conditions imposed by the correlations between the theory and the specific practices which arise from the experiments conducted through laboratory applications.

Overview of original contributions:

In 1970, after successfully passes the paper presentations and exams in the doctoral program, he doesn't have the chance to benefit from a scholarship in France awarded to him.

The initial theme of his PhD thesis was "*Separation of heavy metal halides by fractional distillation*". Because of some interferences with the results published by a Dutch researcher, reluctant to dispute the priority, given that he never rushed towards publication of his own partial data, he turned to changing his original theme.

In 1977, after the death of his scientific mentor Coriolan Drăgulescu and the transfer for guidance to acad. Maria Brezeanu, his new PhD subject became "*Complex combinations with ethylene glycol and its oxidation products as ligands*" (approved only in 1985).

Between 1985 and 1990 he is the most active in terms of scientific research. He produces original results, shows originality through the synthetic method and its applications.

In his statement of activity for his promotion to lecturer he wrote:

"In what concerns the original research for the development of my doctoral thesis, I addressed an area of perspective and current interest: the use of complex combinations as precursors in the production of metals and simple or mixed oxides with catalytic properties, or for production of ferrites. Through original research I have obtained homo- and heteropolynuclear glyoxylates directly in the reaction system, through a method not mentioned in the dedicated literature: the oxidation of ethylene glycol to glyoxylate dianion by metal nitrates with the isolation of complex combinations. In this context, I have developed a new method for preparing a nickel - silica gel catalyst used in the hydrogenation process of vegetable oils. The obtained results compare favorably with import catalysts. At the same time, through an original method - the formation and decomposition directly on the metal support of Cu(II)-Ni(II) polynuclear glyoxylates I have obtained anodes with active electrolytic films based on Cu_3O_4 , NiO and, respectively, $NiCu_2O_4$, used in the oxygen discharge process during the electrolysis of alkaline solutions. The obtained anodes made it possible to reduce the energy consumption by about 10%. At the same time, they were harnessed with good results, subjected to contracts or patents, as in the preparation of ferrites with good performances, through thermal conversion of heteropolynuclear glyoxylates of Fe(III)-Me(II)."

He defends his thesis in 1997 under the guidance of acad. Maria Brezeanu who shows competence, patience, understanding and streamlining.

In the scientific research, Mihail Bîrzescu remained a visionary, showing perseverance to complete the idea and the objectives in his own way, without "copying" others, even during the moments of setback (e.g., the poor equipment from the '80s). He benefited from the support of research colleagues from Cluj, Timișoara, and Bucharest. During his lifetime he acquired many collaborations, although there were also renouncements due to overwork and other interests.

Even more than the collaborators who abandoned him, he was strongly marked by the breaking of contact with the students. In 2004 he was "administratively executed" by retirement from work because of age.

Eight years followed in which he was deprived of communication and collaboration in academia. Many projects have remained unfulfilled. The chemistry books, however, stayed with him. He never betrayed his principles and his independence of thought.