

Editorial Dedicated to Prof. Egon Bauman

This issue of CABEQ is dedicated to Professor Egon Bauman, to celebrate his 80th birthday. All those of us who worked with him are aware of the fact that Prof. Bauman was from the beginning of his career the driving force behind the establishing of the Chemical Engineering as an independent discipline at the University of Zagreb.

Egon Bauman was born in Virovitica in 1924. He earned his d. B. Sc. title at the Chemical Department of the Technical Faculty of the University of Zagreb in the 1950. In the same year he joined the Laboratory for the Inorganic Chemical Technology and Metallurgy where he acted nearly ten years as teaching and research assistant. In 1960 he got the position of a assistant professor and in 1965 the position of the associate professor at the Department of the Petroleum and Petrochemical Technology at the Faculty of the Technology. The rather young staff of this new Department, located in nearby industrial town of Sisak, was actually composed of progressive, chemical-engineering minded individuals who were expelled, as some kind of professional rebels, to avoid possible disturbances in the established order of the conservative chemical technology structure of the Alma Mater. In addition to his teaching position, from 1962 to 1964, Egon Bauman was also the Director of the Institute of the Metallurgy in Sisak, which was the research institution associated with, both, the large iron works company “Željezara Sisak” and the Department of the Metallurgy at the Faculty of Technology of the University of Zagreb, both located in Sisak. After his return from a two years stay in India, where he acted as UNESCO expert for Chemical Engineering Education in Warangal (1968–1969), besides his teaching and research directing activities, now as a full professor, he acted also as managing director of the Department of Petroleum and Petrochemical Technology. During these years he also served as dean at the Faculty of Technology in two consecutive periods from 1971–1972 and 1972–1973. Looking back, we may say that the first half of 1970s was period of flourishing of the Petroleum and Petrochemical Technology Department in Sisak, with energetic staff



and a generation of enthusiastic and ambitious young teaching and research assistants, recruited mainly by Juraj Božičević, but later on strongly supported and backed-up by Egon Bauman while struggling with various barriers on their road toward establishing themselves as academic professionals, most of them with wide international experience and doctorate degrees. Unfortunately, the reflections of first oil crisis struck also fully the Economy of former Yugoslavia and in an economically strongly deteriorating situation the Department of Petroleum and Petrochemical Technology in Sisak ceased to exist by the end of 1970s, i.e. was assimilated into the newly established Institute of Chemical Engineering which became a key Department of the Faculty of Technology in Zagreb.

During these few turbulent years Prof. Bauman managed to find time and devotion to, finally, complete his academic education by earning his doctorate of technical sciences. At the beginning of 1980s he left the Institute and became the Head of the Unit Operations Laboratory at the Faculty of Food Technology and Biotechnology. There he devoted his scientific interest to the study of the transport phenomena in food manufacturing processes. He was a principal investigator of the Croatia-USA scientific project “Development of Vegetable Dehydration Processes”, supported by FDA in the period 1984–1987.

After his retirement, 1991, he was able to concentrate on his second career, adding to his activity as promotor of chemical engineering field, an internationally oriented component. Namely, he was, together with Prof. Ivan Butula, one of the founders of CABEQ journal and acted as its Editor for first thirteen years. During this time, including several for Croatia particularly difficult war and post-war times, CABEQ established itself as a recognized research journal attracting papers mainly from Middle European and Mediterranean countries.

This international exposure was not surprising, if one knows that from the beginning itself, he was multilingual and eager to collect, read, and digest all relevant information available in open literature. Over the decades he usually shared the gath-

ered knowledge with our professional community by writing regularly “news from sciences and technology” in the journal *Kemija u industriji* (“Chemistry in Industry”) and later on in *CABEQ*. As a soul enriching counterpart, at home there were (and still are) countless mainly English and German books for the leisure which he collected together with his wife, with the same zest as the scientific and technological ones for our library, at that time. So, sharing the time with him was in fact being permanently exposed to an atmosphere suggesting that mastering foreign languages is essential to one who wishes to become free in the mind, both, professionally and privately.

This is something inherent to his role, i.e. his influence on the development of our profession in Croatia. In other words it is not directly his research work in the field of liquid/liquid extraction and distillation, his favorite subjects, which was influential, it was in fact a kind of intellectual leadership to the field of most important separation techniques and the chemical engineering in general, as an individual discipline with transport phenomena as a unifying factor. So his approach from beginning was modern, i.e. state of the art, the subjects of research actual, but our means were not good enough to perform according to standards of developed industrial countries. However, being “sentenced” to assemble research and teaching equipment by scrapping abandoned equipment at various dumping places (Z. Olujić enjoyed the possibility of driving his state of the art car in this heroic missions to the iron grave-yards) was a good character forming experience, which cannot be described by some facts or the apparent quality of publications. However, most of them have had an added value, but were limited to Serbo-Croatian language space.

For the “guest editor”, the first academic experience which occurred through presentation of a joint paper written fully by the honoree, at that time his academic mentor, contributed that he got attracted to research in the field of unit operations widely encountered in chemical and petroleum industries. Today, 33 years and some 150 publications later, he feels that at that time he got addicted to something that he is still doing, i.e. to a still quite exciting but in a way never ending story of the type of the research work, namely generation of experimental evidence on the proper, pilot or semi-industrial scale, necessary to substitute development of the appropriate predictive models, which could be used with confidence for design and optimization of gas (vapour) and liquid and liquid/liquid contactors and separators. Particularly, the work done at that time on tray configurations for distillation applications in refining and petrochemical applications, was highly relevant and testifies the originality of his ideas.

The perception regarding the essence of the matter; i.e. the relation between hydrodynamics and mass transfer performance of gas/liquid and liquid/liquid contactors, his curiosity and passion for the subject as well as his analytical mind and capability of interpreting properly all complications associated with academic life, and its relation to politics and the every day life throughout the years – all these are qualities for which he is held in such esteem.

The essence of the chemical engineering attitude radiated by Egon Bauman to his surrounding may be better understood from a fragment illustrating the still difficult vertical relation between science (fundamentals) and the engineering (applied knowledge) – today may be not so pronounced – which was and we believe still is an issue, which certainly slowed down and to some extent obstructed proper development of chemical engineering as an independent discipline in Croatia over the last four decades of the last century. In that very first paper, presented by the “guest editor” devoted to the separation of dispersions in mixer settler type liquid/liquid extractions, Egon Bauman wrote “From the point of view of the process equipment sizing, the results of the research, devoted to single droplet behaviour, are presently of the small value, because these results cannot contribute to the determination of the capacity of the settler. Coalescence here is not limited to the droplets only, but also occurs between the droplets and the phase interface. Efforts oriented toward the development of a predictive mathematical model have resulted in a number of useful indications; however, there is still no satisfactory overall solution in this respect”. All this is still relevant and represents the essence of the scale-up as the step of transforming science into technology.

Professor Egon Bauman inspired and supported a whole generation of younger people to enter and explore the field of Chemical Engineering. Some of them, presently senior ones, who pursued academic carriers, managed to deliver papers for this issue. Although, the number of special papers is rather small, we believe the overall result is a fitting tribute to Prof. Bauman and to the inspiring influence he has had on us and the Chemical engineering research and education in Croatia, in general.

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