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## PREFACE

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### Founding father of Slovak chemical engineering Elemír Kossaczký (Ľubietová, 13.6.1924 – Bratislava, 5.5.2014)

A decision to prepare this dedicated issue was taken in the autumn of 2012 when Professor Elemír Kossaczký was still spending a part of week at our faculty. He was not able to do it daily as in the previous 70 years of his life due to his deteriorating eyesight. He enjoyed the time spent with his former students and colleagues with equal passion as before. He lived for chemical engineering most of his life and still loved to talk about the issues concerning the education, research, and organization in this discipline. He was however coming not only to talk or to drink an unthinkable cup of coffee and smoke one or two cigarettes. He was also still writing a revised version of his handbook on material and enthalpy balances.

His strong spirit contradicted his declining physical shape therefore we hoped that we shall be able to hand him over a bunch of papers dedicated to his 90th birthday. Unfortunately, only six papers were published online before his earthly journey came to the end one month before he turned 90.

My first encounter with him dates back to the spring of 1982 when he read lectures in separation unit operations for our undergraduate course which was considered one of the most difficult ones at our faculty. I however enjoyed his lectures because I had often got the feeling to understand and remember everything he said. His lectures were extraordinary because he was a champion in didactics. He always unmistakably selected the essential aspects of the lectured topic and built the structure of his talk around them. He was able to look at the substance of the problem from different angles without being dull.

The secret of his pedagogical mastery was in proper estimation of the audience's horizons and perfect understanding of problems (Langfelder, 2004). Moreover, he analyzed the effectiveness of the taught content permanently. In this way, his excellent two-part textbook of chemical engineering written in the coauthorship with Július Surový was indeed original and best suited for the chemical engineering courses in the former Czechoslovakia.

It is really amazing that the extraordinary quality of this textbook was achieved in a very short period of time. As Kossaczký (2013) recalls, chemical engineering did not exist in Slovakia before 1952 although the graduates of our faculty received the degree of

engineers of chemistry. He knew this from his personal experience as its graduate in 1949. The profile subjects from chemical technology were based on the descriptions of production processes containing many factual data but with little emphasis on practicing logical thinking. At the end of 1940's, some prominent professors of our faculty felt that a change is needed. It was therefore decided that chemical engineering will be included into the curriculum.

It was however not so easy to implement such a decision. Czechoslovakia was just included into the buffer zone of Stalin's empire. The movement of people outside the iron curtain was drastically limited and the West implemented an embargo on modern equipment, strategic raw materials, and important scientific and technological information. It is therefore not surprising that a key role in the establishment of chemical engineering education and profession in Czechoslovakia was played by a left-wing American emigree George Standart who worked at the California Institute of Technology before his emigration. Standart held private lectures that Kossaczký attended. These lectures were translated into Czech and became the first textbook used in the country.

Kossaczký became the first lecturer of chemical engineering in Slovakia by cruel irony of fate in this tragic period. The purge for nationalists within the communist party cost the first designated lecturer, Mikuláš Zanzotto, his job as a university professor. A pre-war communist who knew personally some people in the party's upper echelons was thus replaced by an only 28-year old catholic. Despite the unfortunate circumstances, the selection of Kossaczký was a great luck for the development of chemical engineering in Slovakia.

Having free hands in shaping the new subject of chemical engineering, he started to work with great enthusiasm and bulldog's endurance. In 1952, he was the single teacher of this subject with three lecture-hours weekly in one semester. Kossaczký was soon joined by other young recent graduates because the number of students and the number of teaching hours grew very quickly. In the period of about five years, each student went through 18 hours of chemical engineering lectures, seminars and labs during three semesters. As the Standart's textbook was sold out soon, Kos-

saczký wrote his first textbook already in 1952 which was greatly influenced by a monograph of Kasatkin. He and Július Surový wrote then re-editions of their textbook using the mimeograph technology every two-three years.

All these achievements however did not work in Kossaczký's personal favor. The regime became more deep-rooted and favored loyalty before competence and skills. Moreover, the official atheistic doctrine was reflected in a strong pressure on teachers to stop practicing religion. Kossaczký declined to hide his personal belief. He was still too precious for the faculty to be fired but he was deprived of his well-deserved promotion. Moreover, an already signed agreement with the publishing house on the publication of a new textbook of chemical engineering in typesetting form was cancelled.

Frustrated by the harassment and envy, he left the faculty and started working as a researcher in the Research Institute for Petroleum and Hydrocarbon Gases that was associated with the Slovnaft refinery. He thus missed an opportunity to be a direct player in the establishment of an independent department of chemical engineering in 1962 and of the first undergraduate study program in this discipline — crucial milestones for Slovak chemical engineering. He, however, did not stand aside completely. As he wrote in his memories, he used a short ideological thaw to publish the above mentioned two-part textbook. It is interesting that this decision was taken only after this piece became the most wanted chemistry book in a poll of the state science publishing house. This textbook written in Slovak achieved five re-editions with the total number of 10,000 copies, which is an impressive figure for such a small country. It must be emphasized that it was not a simple textbook that was forgotten after an exam was passed but it was a real handbook that could be found in the bookshelves of most chemical engineers in industry.

Another sign of a thaw for him was that he was invited to return to the faculty as an associate professor. He did so after defending his habilitation thesis in 1965. His spiritual leadership was confirmed in 1968 when he was appointed to be the head of the department which he then held until 1984. Until the very same year, he had to wait for a well-deserved degree of full professor. During his term, the department attracted students belonging to the most excellent ones at the faculty. The staff number and influence increased significantly. The cooperation with industry also increased which resulted in the establishment of

professional chemical engineering society in 1972 that was led by Kossaczký for more than twenty years. He established a strong research group of separation processes where the key research topic was gas–solid adsorption and research activity was carried out also in liquid membrane extraction (Polakovič, 2013).

In spite of these diverse duties, he was still very active in teaching. He lectured several subjects and wrote the first Slovak textbooks on adsorption, multicomponent separation processes (together with Ján Dojčanský), biochemical engineering (with Vladimír Bálež) and material and enthalpy balances. The last one was published in 1985 and its topic became an intellectual passion for the rest of his life. He published a monograph on the balances having more than 500 pages in 2000. It is very characteristic for Kossaczký that he was not satisfied with this first edition and started to work on a second edition in 2007. This time, he would not be able to complete this task without the help of younger retired colleagues, Milan Vajda and Ivan Havalda, because he could read only using a special magnifier but could neither write nor use a dictation recorder. He therefore memorized corrections needed in 10–15 manuscript pages and dictated them to his co-editors. He did the corrections for the same text several times until he was satisfied with the result. This Sisyphean work was completed a few months before his death.

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Milan Polakovič

*Department of Chemical and Biochemical Engineering  
Institute of Chemical and Environmental Engineering  
Faculty of Chemical and Food Technology  
Slovak University of Technology in Bratislava  
Radlinského 9  
812 37 Bratislava, Slovakia  
E-mail: milan.polakovic@stuba.sk*

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