Acta Chimica Slovenica

Memorial Issue

Now you abide above the plains high,
clear skies about you – no darkness of the night;
where the blissful sun shines without an end,
never beclouding the sun of truth.
(Simon Gregorčič)

Dedicated to the memory of the late Prof. Dr. Valentin Koloini

It was October 2009 when Professor Tine Koloini passed away. He left us much too early, amidst his plans to enjoy the autumn of his life among his beloved ones. Unfortunately, some of his ideas will remain unfulfilled. Yet he left us with pleasant memories of the past and some progressive ideas for the future.

Professor Koloini was born in Plače near Ajdovščina on February 19th, 1940. After completing classical high school in Ljubljana in 1958 he enrolled in chemical technology studies at the University of Ljubljana. As a talented student, he graduated in 1963 and soon got a position at the university as a teaching assistant in chemical technology. In 1967 his engineering curiosity and ambitions led him to Mc Gill University in Montreal, Canada, where he got a research position and was introduced to a new world of chemical engineering. He dedicated his work to fluidisation of solids and ion exchange and in 1973, after returning to Slovenia, defended his doctoral thesis. He advanced in his academic career to become assistant professor in 1975, and later, in 1985, became Full professor of chemical engineering.

His first area of research was chemical engineering which he started during his visit to Canada. Together with his co-workers he proved original ideas which resulted in seven articles published in distinguished international journals. High relevance of this work was confirmed by more than fifty citations. Later on, he found interest in applied research and started projects with Slovenian industry. It was in the 80's, when fermentation technology gained significance in our country, that he became interested in investigations of mixing and oxygen mass transfer in bioreactors in the production of pharmaceutical compounds. He made significant improvements to process economics on the one hand, while making valuable theoretical contributions to basic science as well. His results were published in ten domestic and international journals with more than 70 citations. In the 90's he turned his interest to the area of chemical reactor design. He was particularly interested in the application of microwaves and studied microwave reactors compared to classical chemical reactors. Together with his colleagues he published 16 articles in scientific literature in this field and obtained more than 70 citations. In the last decade he was concerned mainly with the development and synthesis of chromatographic monoliths for the purification of larger molecules, such as proteins, DNA and viruses. Small volumes of monoliths are used on the micro- and analytical scale, while larger volumes up to eight litres are implemented in the industrial purification processes. As a result, five scientific papers with more than 30 citations appeared. Besides the successful work already mentioned, he also contributed to the field of environmental engineering and some other areas of chemical technology. During his research career he effectively combined basic chemical engineering principles and knowledge of momentum, heat and mass transfer, mathematical modelling, reaction kinetics and unit operations. He also enjoyed cooperating with other chemists at the faculty. Speaking of his research in general, the baseline of his research focus was optimization of the product synthesis. It goes without saying that he was one of the pioneers in prod-

uct engineering which was a new developing scientific field in our country at that time.

He was also a dedicated teacher and pedagogue. He was one of the big four who were involved in modernization of undergraduate and postgraduate study programmes of the Faculty of chemistry and chemical technology in Ljubljana and has merits for introducing chemical engineering discipline as a special stream of study. His main teaching engagement was in the Heat and mass transfer basic course for undergraduate students of Chemical Engineering, while at the postgraduate level of Chemical engineering he taught selected topics in transport phenomena. He also delivered lectures on Fundamentals of chemical technology to students of higher professional programmes in Applied chemistry and chemical technology. He managed to integrate his long-term research experience with teaching and wrote a very popular university course-book on Heat and mass transfer. He was an excellent supervisor to numerous undergraduates, and mentored ten master's and nine PhD students. He acted as an invited lecturer at the International postgraduate course of biochemical engineering, which took place several times during the past two decades. He also wrote a chapter on Heat and mass transfer for the book: Bioreactor Engineering Course Notes.

Professor Koloini played an important role in the development of chemical engineering in Slovenia. He held some important managerial positions at the Faculty of Chemistry and Chemical technology in Ljubljana: In 1983 he was appointed the head of the Chair of Chemical Engineering. From 1993 to 1997 he acted as a vice dean of the faculty and later assumed the office of the dean of the Faculty for four yeas. From 2001 to 2005 he headed the Chair of Chemical, Biochemical and Ecological Engineering. He spent lots of energy on renovating the existing faculty as well as on acquiring construction licences for the new faculty premises at a new location.

He gave an important contribution to the development of chemical engineering discipline home and abroad and was awarded several prizes for his work: in 1979, 1985 and 1991 he and his colleagues received the Boris Kidriè Award for scientific achievements in the area of chemical and biochemical engineering. In 2007 he was granted Professor Emeritus title by the University of Ljubljana. Posthumously, in 2008, he received the Maks Samec award for his merits and commitments to the Faculty of Chemistry and Chemical Technology.

Professor Koloini was an inquisitive and lucid investigator. He believed in team work and was good at managing teams, striving to obtain and evaluate results as soon as possible. Numerous students and co-workers were enriched by his joyful spirit and sparkly ideas. Even though he was not an active sportsman he was interested in sports. Following the motto "A sound mind in a sound body", he enjoyed mountain hiking around Slovenia and admired their natural beauties. During the last years he visited several countries abroad and shared his interesting experience with other colleagues. He was an excellent engineer and scientist, as well as a friendly person. He retired full of energy and frequently visited us at the faculty. Unfortunately, he was destined to enjoy his retirement freedom only for a short period of time. He sowed many seeds but had to go too soon to see them ripe and reap the fruits. Nevertheless, his spirit will remain with us and with younger generations just like a fertile substrate for further growth and development of chemical engineering.

In this special issue of Acta Chimica Slovenica, dedicated to Professor Koloini, you will find nineteen articles, mostly written by his previous students, who are now assuming high professional positions in Slovenian industry, universities and research institutions. Professor Kolini himself participated in many of these studies and they have been enriched by his ideas. Research topics cover a wide range of chemical engineering, for example mixing, heat and mass transfer in bioreactors, mathematical modelling of micro reactors and product engineering like monolithic columns and coenzyme Q_{10}. The diversity of topics, as evident from the titles themselves, speak of his wide scope of interest in chemical engineering, while the number of authors show our respect and admiration for him.

Aleksander Pavko