To the Memory of Prof. Dr. Valentin Koloini (1940 – 2008)

In October this year we bade farewell to Professor Valentin – Tine Zdravko Koloini. He left us much too early but with his rich legacy behind – both humanitarian and professional – he will live many years after.

On excursion in Metlika, June 2000 *(foto: J. Maček)*

Prof. Dr. Tine Koloini was born on February 19, 1940 in Plače near Ajdovščina. He was a talented student: as a ten-year boy he came to Ljubljana from Ajdovščina and enrolled in classical high school. In 1958 he became a student of chemical technology and like any freshman he was faced with practicals in inorganic chemistry, which was a kind of baptism of fire for all students. In 1963 he graduated at the Department of Chemical Technology to become an assistant in chemical technology in the following year. With ambitions he had as a young student, and due to the clever intuition of Professor Modic, the doors to a new world of chemical engineering opened up when he got a position at the Mc Gill University in Montreal. In 1973 he defended his doctoral thesis "Fluidisation of solids and liquids in tapered vessels" which was actually the area of his previous specialisation at the McGill's University. In 1975 he became assistant professor and in 1980 was awarded the academic title of Full Professor of chemical engineering. In 1983 he was appointed the head of the Chair of Chemical Engineering and remained in this position for four years. During 1975 – 90 his efforts were devoted to formal establishment of chemical engineering at the Department of Chemistry and Chemical Technology, Faculty of Natural Sciences. This was a period in which he and his colleagues produced valuable works in the fields of ion exchange, biochemical and environmental engineering and found many engineering solutions for process, chemical and pharmaceutical industries. In 1990 he realised how vulnerable chemical and process industry may be in a small country where the public research sphere, based on scientific excellence and economic relevance, was expected to increase the added value to products and services. Following research trends in chemical engineering science, he joined the endeavours of those chemists at the faculty who realised that product engineering was the future of the development modern chemical technology in Slovenia – a unique combination of chemistry, materials science, chemical engineering, and economics.

From 1993 to 1997 he acted as a vice dean of the Faculty and later became the dean. His managerial position continued from 2001 to 2005 as the head of the Chair of Chemical, Biochemical and Environmental Engineering. He managed to reinforce partnership balance between two basic study programmes (chemistry and chemical engineering), as well as taking care of other study programmes of the Faculty, being aware that only well "engineerized" chemical technology studies can lead to the development of product engineering.

Among students, 2007 *(foto: J. Maček)*

His research career started in the field of ion exchange, specifically in mass transfer and flow patterns in fluidized bed columns. In co-authorship he published seven articles in this area in distinguished international and domestic journals. His publications resulted in more than 50 citations, which all indicate high relevance of this research. In the 80's he turned to biotechnology which at that time was developing quickly as a new industrial branch. By applying basic knowledge in chemical engineering and applied research in mixing and mass transfer in bioreactors he significantly contributed to the development of basic science as well as produced applicative results for the production of pharmaceutical agents. His work resulted in ten scientific publications in international and domestic literature, with more than 70 citations. In the 90's he turned the focus of his research towards the area of designing chemical reactors and the use of microwaves. He studied the advantages of microwave reactors against classical chemical reactors. Together with his colleagues he published 16 articles in scientific literature with more than 70 citations. The last decade of his career was the most fruitful one in terms of citations in the broader area of chemical engineering. He focused his studies on monolithic columns which has recently become an indispensable method for the analysis and isolation of active

pharmaceutical active ingredients. He studied the conditions for the synthesis in these columns with optimal operation characteristics and transport phenomena during the operation and the use of these columns in particle separation. He employed modern principles of mathematical modelling in his research. A notable contribution to this field was the determination of convective criteria for the transfer of monolithic systems in scaling up and his scientific efforts resulted in five publications and more than 30 citations. In addition to the areas mentioned above he was also active in environmental engineering, as well as some other areas of chemical technology.

Prof. Koloini was a dedicated pedagogical worker as well. He was involved in designing undergraduate and postgraduate chemical engineering study programmes of the Faculty of Chemistry and Chemical Technology thus making his contribution to the development and promotion of chemical engineering discipline in Slovenia. His teaching subjects were fundamentals of chemical technology within the professional programmes of Applied Chemistry and Chemical Technology, however, his main teaching engagement was in undergraduate university study programme in Chemical Engineering where he designed the Heat and mass transfer course, as well as Process Design course for ecological engineering. At the postgraduate programme of chemical engineering he taught selected topics in transport phenomena. Drawing upon the results of his long and fruitful research he published a course book Heat and mass transfer which was very popular among students. For several years he was a lecturer at the International postgraduate school in Biochemical Engineering and wrote a chapter on heat and mass transfer for the course book used in this programme. He was an excellent lecturer and mentor to many undergraduates, master's students and PhD students. He was able to inspire his students and direct them in their work, which is also reflected in the number of his publications and numerous applicative engineering solutions used in Slovenian industry.

He was awarded several prizes for his work: in 1979, 1985, and 1991 he and his colleagues received the Boris Kidrič Award for scientific achievements in the area of chemical and biochemical engineering. All this proves how vast and substantial his research work has been. His international recognition proves that his work was original and in this way he made an important contribution to the development of chemical engineering discipline home and abroad. In the capacity of the vice-dean and the dean of the Faculty of Chemistry and Chemical Technology he was actively engaged in projects for the refurbishment of the Faculty premises, as well as in acquiring documentation for construction development of new premises. All his administrative efforts indirectly contributed to the development of the discipline.

We will remember the image of Professor Koloini as a person with lucid and rational spirit. Under his mentorship, numerous generations of undergraduate and postgraduate engineers were empowered by his ideas which were always development and economy oriented. He always knew how to spur the potentials of his co-workers, as well as competitors. When his course book Prenos toplote in snovi (Heat and mass transfer) was published, Prof. Dolar made a comment that his ideas might cause a severe conflict in chemistry circles, however, in terms of Hegel's philosophy of thesis and antithesis Prof. Koloini managed to achieve synthesis in product engineering. He systematically observed the events occurring in the society, and it was always good to listen to his ideas, especially in discussions about the future of chemical and process industry in Slovenia. With his views and attitudes he was able to fortify his environment and made the events interesting. His Carniolian reasoning, often quite unforeseeable and complex, was a combination of Roman thinking and Mediterranean spirit. In his middle age Prof. Koloini became an ardent lover of mountaineering, regular visitor to Slovenian mountains and enjoyer of their unique beauty. Later, he combined mountaineering with visits to other countries to share his interesting experience with his friends. He was never an active sportsperson but was interested in sports; he believed that sports become an important human activity if social development becomes caught up in a closed system.

Unfortunately, Prof. Koloini was not destined to live long to enjoy the fruits of his labour, to see how his students are advancing, or to offer advice to his colleagues. However, his successors in chemical engineering will strive to keep up with the work on the foundations he has set.

Janvit Golob
Igor Plazl

Prof. Tine Koloini was one of the "fathers" of *Chemical and Biochemical Engineering Quarterly* journal. He has greatly contributed to the initial efforts within the framework of the European initiative Alpe-Adria for regional cooperation. The cooperation was established between chemical engineering departments from Austria (TU Graz), Croatia (U. of Zagreb), Italy (U. of Trieste), and Slovenia (U. of Ljubljana). Later the cooperation included the Chemical Engineering Department of University of Maribor, Slovenia. The pivotal moment was the conference Austrian-Italian-Yugoslav Chemical Engineering Conferences (AIY CEC) held in Portorož, Slovenia in 1986. At the conference, the initial editorial board of *Chemical and Biochemical Engineering Quarterly* journal was formed, and Prof. Tine Koloini was appointed to the position of an associate editor. He strongly supported the idea of bringing together faculty and students of the regional chemical engineering departments as well as to open the field of research and scientific communication in, at that time, the new field of biochemical engineering. His expertise in chemical engineering fundamentals, industrial experience, and especially expertise in the transport phenomena in chemical and biochemical reactors, improved the processes of scientific manuscript selection and reviewing. Besides his engineering and scientific excellence, his optimistic and joyful personality, his simple and sincere human interaction, were his most outstanding qualities providing an intimate atmosphere for permanent friendly and cooperative relations. He frequently hosted Editorial Board meetings in Ljubljana, which he organized as effective working sessions followed by memorable social events.

His too early departure came as a shock to all of us. We are all at a great loss for an excellent scientist, and especially great human being and personal friend. However, his teaching and ideas will remain with us, and with the new generations of chemical engineers.

Prof. Želimir Kurtanjek