

Professor Tadeusz Tumidajski (1944-2017)

On 9th of January, 2017, the Polish society of Mineral Processing lost one of the most known and much-loved Professors. Professor Tadeusz Tumidajski died, leaving his family, friends and co-workers in sadness.



I.

Professor Tadeusz Tumidajski, born 24th of February 1944, was mathematician according to his Master degree. However his professional life was connected to mining and mineral processing, where he successfully applied his knowledge in the field of mathematics and statistics into mathematical modeling of mineral processing. He started his research in raw materials in 1968, when he obtained his job as assistant professor in Department of Mineral Processing, Faculty of Mining, AGH University of Science and Technology in Krakow. In June, 1974, he received scientific degree of doctor of technical sciences, and his dissertation was entitled: “Stochastic model of copper ores processing in example of ZPR ZG Polkowice”. Further academic degrees came as follow: habilitation (“Stochastic analysis of grained materials properties and their separation processes”) – 1988, title of professor – 2005. One year after he obtained the position of full professor at AGH UST. He served numerous functions, just to mention the vice-Head of Department for Scientific and Research Development.

Areas of interests of professor Tadeusz Tumidajski mainly aimed at applications of mathematics in description of mineral raw materials and aspects of their processing. He applied the mathematical modeling issues into industrial technological processes in terms of their automation and monitoring. Within this area he published, as an author and co-author, over 150 papers, 12 monographs and books, not to mention dozens of industrial projects and

expertizes. His interests also focused on theory of sampling and statistical assessment of sampling results. Therefore, the probability theory and mathematical statistics applications in mineral processing became the main subject of professor Tumidajski research. His major achievements within the issue include: a) Application of methods of extreme experiments to investigate various operations of mineral processing (also pelletizing, and microbiological beneficiation); b) Development of methods of approximation of particle size distribution curves for processing products; c) Application of methods of correlation and regression analysis in description of processing operations or their circuits (copper, zinc and lead ores beneficiation, coal upgrading); d) Markov processes in description of gravity beneficiation processes; e) Statistical analysis of comminution models. Most of the above problems were included in his book (with co-authorship of D. Saramak) concerning application of statistical methods in analysis of mineral processing, which is very useful position also in studying of many subjects related to mineral processing.

In 70's Professor Tadeusz Tumidajski cooperated with Institute of Meteorology and Water Management. As a result of the above he issued several important works concerning evaluation of air pollution in Krakow and its influence on habitants' health. These works were based on very large statistical material concerning multiple observations of daily gas and dusts concentrations, obtained from the system of monitoring stations located in Krakow city, as well as meteorological conditions (air temperature, wind speed and directions, humidity etc.) and the number of deaths and emergency interventions due to various types of diseases.

The next monograph of Professor Tumidajski was dedicated to stochastic analysis of grained materials and their separation processes. This work was mainly based on widely understood the mass balance equation, while it's individual parts were described in details assuming their stochastic character. The significant and new aspects of this work were connected with applications of complex functions of random variables in analysis of mutual correlations between grained materials features as well as analyzing of multidimensional (in aspect of features influence) character of separation processes. The effects of this work were numerous publications presented on mineral processing congresses (Sydney, Rome, Cape Town, Istanbul). This line is to some extent continued by his students (now professors): Tomasz Niedoba, Daniel Saramak and Dariusz Foszcz. The last periods of his professional activity concerned the modern methods of mathematical modeling of mineral processing (especially comminution) as well problems of ores beneficiation economy.

Professor Tumidajski started his teaching work in the year 1968, leading the courses of Technological Processes Monitoring. Then he developed his teaching into Classification, Comminution and Mineral Processing, together with Methodology and Experimental Techniques. For many years he was also responsible for courses of Statistics and Mathematics on entire Faculty of Mining. Professor Tumidajski was a tutor of nine doctoral theses in the field of mineral processing and several dozens of B.A. and M.Sc. works in the fields of Mining and Geology, Environmental Engineering as well Management and Production Engineering.



IMPC in Istanbul, 2006



Professor Tumidajski and Professor Peter Fecko (died in 2012). Now they both have enough time for scientific discussions, but in different perspective...



NTNU in Trondheim, first visit in 2007



70th Anniversary, Polish Mineral Processing Conference, 2014.

II.

Scientific achievements of professor Tadeusz Tumidajski in the field of mineral processing are only one side of the story. I recall him as a very courteous person. In fact he reached something impossible: he really was a person who tried to be kind and had a positive attitude towards everybody. That was visible in his daily contacts with colleagues, young researchers and students. Professor Tumidajski was a great mentor and university teacher. He was forwarding his own observations and suggestions to young researchers in a very delicate, but precise manner. As a tutor he never imposed his opinions, but tactfully gave advice and guidance, and what should be emphasized: always accurate ones. He respected the opinion of

every single young student, PhD student, or assistant professor. He taught us that in researcher's work the main goal is not a pursuit of achievement but the honest exploration and investigating the truth. He and his generation have always remembered this, and he paid great attention that his disciples follow such principles.

We – those times, the young researchers – met him at the very beginning of the century, as we started our PhD studies. His time was considered as the time for us. We felt his helping hand and support at the beginning of our scientific way. Despite his intense engagement in tutorship, he carried out and developed his own research in parallel and in that period he received the title of professor. Professor Tumidajski also supported our participation in international conferences, scientific events and cooperation. It was thanks to his efforts that we have our Department developed cooperation with units from Slovakia, Czech Republic, Norway, Austria, Turkey, Canada and Australia. I remember our first participation in IMPC (Istanbul, 2006). A group of Polish researchers were there, but we haven't got enough resources to cover the participation for two more persons from professor's team. Professor Tumidajski decided that instead of the plane trip, we can travel for the Congress by car. As a results these two persons were present on IMPC. I'm just wondering how many people could be ready for such a sacrifice: to replace a 2-hours flight into 2-days car trip in order to help own young successors? Anyway, that trip we recall as a really great time.

The fruits of his efforts are also evident in his successors – the team of young professors – an achievement not reachable to many tutors. He has passed away in the time when the Department of Mineral Processing at AGH University of Science and Technology is flourishing, playing the leading role in the development of mineral processing research in Poland, but also being recognizable abroad. It is also thanks to his great job! The most outstanding Statistician among mineral processing researchers and the most distinguished Mineral Processing Researcher among statisticians has left us too early, leaving the great emptiness. He was a great person and a scientists. He presented an intuition in his research, he proudly continued the direction of the greatest Polish Mineral Processing Researcher – professor Kazimierz Sztaba. We – proud successors of Professor Tadeusz Tumidajski – will take up all efforts fill it out with dignity. However, we are aware, that such unique people are simply irreplaceable....