

ION EXCHANGE LETTERS

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Prof. Zdeněk Matějka History of Ion Exchange at ICT Prague

Luděk Jelínek, Helena Parschová and Eva Mištová

*Department of Power Engineering, ICT Prague, Technická 5, 166 28 Prague 6, Czech Republic
ludek.jelinek@vscht.cz*

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ABSTRACT

Article maps the 44 years of professional life of Prof. Zdeněk Matějka starting from 1960 when he received his master's degree from ICT Prague to his last international meeting he attended in 2006. His research interests and major publications are listed.



Photo: N. Kabay 2006

Zdeněk Matějka was born on 30th April, 1937 in Teplice. After finishing high school in 1955, he started his study at the Institute of Chemical Technology (ICT), Prague, Department of Water Technology, where he received his master's degree in 1960. The title of his master thesis^[1] was "Effect of organic substances in water on anion exchangers". This work was later published^[2, 3] and led to his first patent^[4].

After finishing the university, he started his scientific carrier at the Water Research Institute of ČKD Dukla, Co. as a research fellow. During his work at ČKD Dukla, he started external doctor course at the ICT Prague. He worked under the supervision of Prof. F. Karas, founder of the Department of Heat Engineering (later renamed to Department of Power Engineering). For his research on electro-deionization of water^[5] he received PhD degree in 1967. Later, he summarized his findings in several articles^[6-8].

In 1972, Zdeněk Matějka moved to Institute of Chemical Technology, Department of Heat Engineering where he started his work at the position of assistant professor. He worked on fundamental problems of ion exchange such as

kinetics^[9, 10] and mechanism of regeneration of ion exchangers^[11]. Later, his interest shifted to environmental applications of ion exchangers such as utilization of thiol sorbents for selective removal of mercury^[12] and chelating sorbents for removal of heavy metals^[13, 14]. Utilization of chelating sorbents then became his lifelong point of interest.

Another interesting research area was application of sorbents based on modified natural materials. This interest started in early eighties with modified bead cellulose^[13, 15, 16] and was refreshed later with the new millennium.

At the beginning of nineties, many things changed. After the "Velvet Revolution" in 1989 the atmosphere at the universities became free. Many scientists finally received the appreciation they deserved. Thus, Zdeněk Matějka was promoted to the position of associate professor in 1990. At this time his research group was working mainly on selective removal of heavy metals via chelating polymeric sorbents^[17-19].

In the middle of nineties, his group worked intensively on nitrate removal from drinking water. Regeneration of nitrate selective ion exchangers was optimized for several regenerants, and combination of ion exchange with electrochemical reduction of nitrates was studied. This work later led to several publications^[20-22] and patent^[23].

In 1997 he became the head of Department of Power Engineering. Though he was busy with this position, he continued to lead his group. For his scientific and teaching work, he was promoted to full professor in 2000. Two years later, at mandatory age of 65, he retired but still kept the halftime position at the department.

In his late years he was interested mainly in the removal of oxoanions. He felt the disproportion between the thoroughly described removal of heavy metal cations and almost untouched word of metal oxoanions. The word that is ranging from the toxic metals, such as arsenic, antimony and chromium^[24, 25] through the polyoxoanions of tungsten, molybdenum and vanadium^[26, 27] to virtually harmless borates^[28].

Professor Zdeněk Matějka passed away after a long illness on October 2nd, 2006 in Prague. He was immersed in his research till his last days. He attended Ion Exchange Workshop in Turkey^[29] just several months before his death. It was a last time to meet his friends and colleagues.

During his carrier at ICT, he taught many courses in the fields of industrial water treatment, ion exchange and separation chemistry for student of several departments. He supervised about 60 master course and 20 PhD students. He established many scientific contacts worldwide, especially in Japan, but also in Germany, USA, UK, Turkey, etc. He always tried to promote the international exchange by encouraging his students and colleagues and helping them to find a position abroad.

Hopefully, we can follow the path he marked.

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