Laudatio for professor Dr. Hab. Rajmund S. Dybczyński Hevesy Medal Awardee 2013

A. Chatt

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Rajmund Stanisław Dybczyński was born in Warsaw, Poland in 1933. He received his MSc in chemistry from Warsaw University in 1955. He spent 2 years in the Institute of General Chemistry, Warsaw, where he got interested in the theory and practice of ion exchange and worked on physico-chemical methods for characterization of ion exchange resins. In 1957 he joined the Institute of Nuclear Research in Warsaw where he received his PhD in 1963 and DSc in 1971. In 1987, the President of Poland conferred the title of “Professor in Chemistry” upon him. Prof. Dybczyński was the Head of Laboratory for Radiometric Methods of Analysis since 1965, and became the Head of Department of Analytical Chemistry at the Institute of Nuclear Chemistry and Technology (INCT) in Warsaw in 1995 and continued until 2008. He was in charge of the Analytical Quality Control Services section at the IAEA Seibersdorf Laboratory during 1975–1980. His early work was focused on the use of radioactive tracers for studying the thermodynamics of ion exchange reactions, effect of resin cross-linking and of temperature on chromatographic separations and development of schemes for group and individual separation of radionuclides including *inter alia* rare earth elements (REE). Prof. Dybczyński's interest in REE chemistry stood the test of time and even in recent years he published several papers on REE separation and determination by NAA, ICP-MS, ion chromatography (IC) and RP-HPLC.

Professor Dybczyński has made significant contributions in radiochemical neutron activation analysis by developing

a number of new separation methods based on ion exchange and extraction chromatography. He applied his instrumental and radiochemical NAA methods to study environmental pollution through the analysis of air filters, human hair and coal fly ash, to determine impurities in some noble metals, to identify single human hairs for forensic purposes, and to investigate possible correlation between coronary heart disease and levels of certain trace elements such as Cu and Zn, among other projects. INAA, RNAA and non-nuclear methods of inorganic trace analysis were used with success to establish genetic relationship between Baszkówka meteorite that fell in Poland in 1994 and another chondrite Mount Tazerzait which fell in Niger, Africa 3 years earlier.

Professor Dybczyński has been interested in QA/QC for a long time and was involved in preparation and certification of CRMs for inorganic trace analysis at IAEA. He developed the approach to evaluate data obtained through interlaboratory comparison and to assign certified and information values. His procedure is sometimes referred to as Dybczyński's method in the literature and has been adapted by IAEA and some laboratories in Poland, Canada and former Czechoslovakia.

Professor Dybczyński initiated the developmental work on highly accurate (definitive) methods for the determination of selected elements by radiochemical NAA. He also developed guidelines to obtain data with high accuracy. He demonstrated that the definitive methods can meet the requirements of a ratio primary reference measurement procedure (RPRMP). He developed definitive methods for As, Cd, Co, Cu, Fe, Mo, Ni, Se, and U and applied them to validate other methods and to help in the certification of 10 candidate CRMs, prepared and issued by INCT. Professor Dybczyński is the author and co-author of over 200 papers published in internationally reputed journals, 5 monographs,

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From left to right: Dr. Noriyuki MOMOSHIMA, Prof. Amares CHATT, Prof. Rajmund S. DYBCZYŃSKI, and Dr. Yuichiro NAGAME

review articles, dictionaries of analytical chemistry and chromatography, etc. He was the regional editor of Journal of Radioanalytical and Nuclear Chemistry and Geostandards Newsletter, and Editor of the Polish journal *Chemia Analityczna/Chemical Analysis*. Several PhD and MSc students graduated under his supervision.

Professor Dybczyński is a member of scientific councils of several institutions in Poland and the Committee for Analytical Chemistry of the Polish Academy of Sciences. Since 2004 Prof. Dybczyński is a member of the *Societas Scientiarum Ac Litterarum Varsoviensis* and currently is the scientific secretary of the IIIrd Division (physics, mathematics, chemistry and astronomy) of this Society.

Professor Dybczyński has been the recipient of numerous awards from the State Council for Peaceful Uses of Atomic Energy, National Atomic Energy Agency, and the Minister of Education of Poland. In 2001, the Polish

Chemical Society awarded him the Wiktor Kemula Medal “for outstanding scientific achievements”. In 2008 a special issue of the journal *Chemia Analityczna/Chemical Analysis* was devoted to the celebration of Professor Dybczyński’s 75th Anniversary. In 2009 the Committee for Analytical Chemistry of the Polish Academy of Sciences granted him the Jerzy Fijałkowski award “for achievements in production and certification of certified reference materials and popularization of quality assurance”. In 2010 the same Committee awarded him the Andrzej Waksmundzki medal “for achievements in chromatographic sciences”.

Professor Rajmund S. Dybczyński has been among the internationally leading and well-recognized scientists in the fields of radioanalytical and nuclear chemistry over the last 35 years. It is indeed a pleasure to honor him with the Hevesy Medal Award 2013.