

SLOVAK SPECTROSCOPIC EVENTS BETWEEN 1959 AND 1999

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Abstract

The main development of the Slovak spectroscopy, both emission and absorption methods, started after the end of World War II, and was dependent upon the UNRRA help. Contacts and co-operation with foreign scientists began after the war consolidation period. The spectroscopic events in Slovakia between 1959 and 1999 can be categorized into three groups. The first group is represented by general spectroscopic events. The second group is represented by thematically limited special spectroscopic events and the third group of events is represented by general chemical events.

Key words: Slovak spectroscopic events

Introduction

Emission spectroscopy as a method for chemical quality control of aluminium alloys has been used in Slovakia since 1942 [1,2]. The main development of the Slovak spectroscopy, the emission and the absorption methods equally, started after the end of the World War II, and was dependent upon the UNRRA help [1,2]. Contacts and co-operation with foreign scientists started after the war consolidation period at the beginning of 50-ties [3,4]. This co-operation was primarily directed to Hungary, Poland and the former German Democratic Republic. The contacts with West European spectroscopic personalities started only in the 60-ties.

The spectroscopic events in Slovakia between 1959 and 1999 may be categorized into three groups. The first group is represented by general spectroscopic events equally with orientation to the atomic and molecular spectroscopy. The second group is represented by thematically limited spectroscopic events, what logically reduced the number of participants. The following organizations participated in the organization of these events: Department of Chemistry of the Technical University of Košice, Institute of Inorganic Chemistry of the Slovak Academy of Science, later the Institute of Geology of the Komenský University in Bratislava, and partially Department of Analytical Chemistry of the Slovak Technical University in Bratislava. The third group of events represents the general chemical events in which scope specialized spectroscopic lectures were presented. Similarly, molecular spectroscopists participated in the chemical and physical events in Slovakia.

Sequence of events

The main spectroscopic events in Slovakia are represented by the following congresses:

- (I) 2nd Czechoslovak Spectrographic Congress (5-10. 10. 1959) in Tatranská Lomnica;
- (II) 4th Czechoslovak Spectrographic Conference (09. 1970) on Štrbské Pleso;
- (III) 6th Czechoslovak Spectroscopic Conference (01-04. 09. 1980) in Nitra, and finally
- (IV) 6th Czechoslovak Seminar on Atomic Spectroscopy (15-19. 05. 1989) on the lake Šírava - Kamenec.

In the given time period, the 2nd Czechoslovak Spectrographical Congress (1959) in Tatranská Lomnica was the most unusual event and it may be considered as the 1st Slovak spectroscopical event, and simultaneously as the 1st (international) Conference on Atomic Analytical Spectroscopy (1st CANAS). The number of participants was 225, where 85 of them were foreign spectroscopists (Hungary, Poland, GFR, former GDR, Italy, France and Japan). The number of lectures was 83 and from these 39 were given by foreign participants. The main advantage of this congress was publishing of full scientific materials, including the discussion in the form of separate number of the journal "*Acta Geol.-Geograph. Univ. Comeniana* – *Geologica No. 6*". In scope of this congress, also an exhibition of spectral apparatus, spectrochemical accessories, and reference materials from Hungary, GFR, GDR, Poland, Italy, France and Czechoslovakia took place. The congress was observed and reviewed by international journals: *Spectrochim. Acta*, *Appl. Spectrosc.*, *Öster. Chem. Zeitung* and *Wiadom. Chemiczyne*. The congress was accompanied by a declaration on the importance of spectroscopy for the science and industry. This declaration was the foundation of the Czechoslovak Spectroscopic Society of the Czechoslovak Academy of Science (Prague). This society, after the separation of Czech and Slovak Republics in 1993, was transformed into two separate scientific societies: the Society of Jan Marcus Marci from Cronland (Prague), and the Slovak Spectroscopic Society (Bratislava).

This tradition continued in the IVth Czechoslovak Spectroscopic Conference at Štrbské Pleso in High Tatras (1970), and this event can be considered as the IInd Slovak spectroscopic event. To the infinite regrets of organizers and participants this event was influenced by the adverse political situation after the years 1968/69 in Czechoslovakia. This event was organized by the newly established Czechoslovak Spectroscopic Society of the Czechoslovak Academy of Science in Prague, together with the Slovak House of Technique in Žilina. The number of home participants was only 87 and 13 participants came from abroad (Hungary, Poland, GFR, GDR, France and Australia).

The IIIrd Slovak spectroscopic event and simultaneously the 7th CANAS were represented by the VIth Czechoslovak spectroscopic conference in Nitra (1980) organized mainly by the Department of Physics of the Teacher's Training College in Nitra. The number of participants was 164 domestic and 46 foreign (Hungary, Poland, GFR, GDR, Yugoslavia, and Bulgaria). The number of lectures was 83.

The next Czechoslovak Spectroscopic Conferences were organized exclusively in Czech Countries (České Budejovice and Třeboň), up to 1989 when the 6th Czechoslovak Seminar of Atomic Spectroscopy was organized near the lake Šírava in Kamenec. It can be considered as the IVth Slovak Spectroscopic Event. The number of home participants was 127 and 16 foreign participants came from Hungary, Poland, GFR, GDR and Austria.

Very important and determining for the development of the Slovak spectroscopy were the series of Seminars on Atomic Spectrography with selected topics (Hrabušice 1970, 1972, 1974, Košické Hámre 1976, 1980, Šarpanec 1981, 1986, Hrádok 1983, Šírava-Kamenec 1988, Stará Lesná 1990, 1992, Štrbské Pleso 1994, Podbanské 1996, 1998). These events raised from the necessity of the development of more narrow contacts between the researchers

working on spectroscopic projects of the state research program. The main objective of the seminars was to discuss problems of use of computers for evaluation of spectroscopic data, problems of determination of optimal homology of analytical line pairs, problems of determination and elimination of matrix effects and determination of the values of figures of merit. Besides the problems with the character of fundamental research the application problems aimed on actual industrial projects were also discussed. In the 80^{-ties} the scientific problems of the seminars were broadened by complex questions of AAS-methods, especially those of atomization in a W-tube. At the same time an adequate possibility to discuss the problems of XRFS and mass spectroscopy was created.

The specific thematic Seminars on the Spectroscopy of Non-Conducting Materials in Smolenice (1963, 1966, and 1969), and High Tatras (1979, 1981) had a similar influence. In the scope of these seminars, complex problems of AES and AAS excitation and atomization of electric non-conducting materials were discussed followed by problems of evaporation processes, elimination of the influence of matrix effects, and optimization of analytical methods for ores and specific ceramic materials. Expressive priority of these seminars was in their international character. The first seminar in Smolenice (1963) with participation of spectroscopists from Hungary, Poland, former German Democratic Republic, German Federal Republic, France, Holland and Austria expressively enlarged the contacts with West-European scientists. Thanks to these contacts more Slovak scientists obtained foreign fellowships, what remarkably broadened our scientific horizons, and the know-how of the latest analytical methods. The scientific materials of these seminars were published partially in the form of separate Proceedings and in special numbers of scientific journals. Namely, the materials of the Symposium in Smolenice (1963) were partially published in the form of separate proceedings book "*Rozpravy Nár. Techn. Musea - Praha (1964)*" and in the special number of the journal "*Collection Czech. Chem. Commun. Vol. 30 (1965)*". The material of the second symposium was published in the journal "*Acta Geol.-Geograph. Univ. Comeniana - Geologica No. 15 (1966)*", and the material of the third symposium was published in the form of separate proceedings book "*Symposium on the methods of determination of trace elements in raw materials*" edited by Komensky University Press, Bratislava (1970). From other symposia only books of abstracts were published.

Slovak spectroscopists reacted very quickly to the discovery of novel spectroscopic excitation sources and already in 1986 they organized the 1th Seminar on spectrometry of inductively coupled plasma in Banská Štiavnica. In 1988, the 2nd Seminar in Stará Turá took place already with international participation (Hungary, GFR). Finally, the 3rd Seminar on ICP and the development trends in atomic spectroscopy took place in Smolenice (1990). The numbers of home participants were 53 and 18 came from abroad (Australia, Bulgaria, Hungary, GFR, India, Turkey and China). Total of 54 oral lectures and posters were presented at this symposium

The Slovak spectroscopists took advantage on organization of international CSI (1967) in Debrecen, Hungary, in Grenoble, France (1975), and in Prague (1977). In connection with these events the Summer University on Atomic Spectroscopy with international participation (Hungary, Poland, GDR, GFR, Yugoslavia and Austria) was organized firstly in Košice on the Technical University. This Summer University determined the further heading of the atomic emission spectrochemistry in Slovakia. This scientific and applied spectrochemical tendency can be defined as follows:

- a) research of fundamental problems of excitation of emission atomic spectra;
- b) study of arc and spark sources inclusive their construction;
- c) study of excitation processes in discharge tubes;
- d) study of flame and plasma sources.

Similarly in 1977, in connection with the CSI in Prague, a specialized spectroscopic symposium was organized near the lake Štrbské Pleso in High Tatras. This symposium was devoted to evaluation problems of spectroscopic data, especially to solid sampling materials. The number of participants was 109, most of them were foreign spectroscopists (Hungary, Poland, GFR, GDR, England, Soviet Union, USA, Yugoslavia, France, Holland, Belgique, and Sweden). Far before the CSI in Grenoble (France) the Slovak organizers oriented their attention to chemometrical problems. Therefore, a special event in Slovak Paradise-Čingov was organized in 1975. The international participation was representative enough (Hungary, Poland, GDR, GFR, Yugoslavia, Soviet Union).

Besides the above-mentioned spectroscopic events, Slovak spectroscopists participated actively and gave lectures at the Congresses of Czechoslovak Chemists (Žilina 1962, Banská Štiavnica 1974), and at the Seminars of Novel Chemical Methods (Piešťany 1982, 1984, Vinianské jazero 1985, High Tatras - Račková dolina 1994).

The main advantage of the above mentioned events is the fact that the whole scientific material from the congresses and conferences was published, partially in foreign languages, in form of complete Proceedings (Tatranská Lomnica 1959, Smolenice 1963, 1966, 1969, Podbanské 1996, 1998), and from all other events in the form of Books of Abstracts.

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