



Andrej Šalak – 80 years

For everyone who has been active in ferrous powder metallurgy for some decades mainly in formerly Czechoslovakia and in present Slovakia, the name ‘Šalak’ is a familiar one. Note by chance, the book authored by him ‘Ferrous Powder Metallurgy’ in 1995 has become a standard reference book in a special field of powder metallurgy.

Andrej Šalak was born in 1924 in Kamenica nad Cirochou, district Humenné. His father was a small agriculturist. After passing elementary school he passed secondary school (8-year real gymnasium) in Michalovce by daily travel 33 km from the native village. After final examination (Matura) in 1944 he was intermediately teacher on an elementary school due to the interruption the university activities before the end of the Second World War. After the end of the world war, he passed 2 semesters at the Faculty of Mechanical Engineering at TU Bratislava. Then he began to study at Czech Technical University in Prague. In 1948, after the communist putsch, he was not admitted to the final ‘2nd state examine’ to receive diploma ‘Ing.’ as person not having a positive relationship to the worker class because he was before active in a faculty student organization as a representative of a political ‘People party’. Since the autumn 1948 he was employed in ‘Škoda Works’ in Prague as designer of ship engines. In 1949 he was admitted to the ‘2nd state examine’ on the recommendation of the Škoda Works. He passed also 25 month a military service. At the end of 1952 due to the problems with the family accommodations in Prague, he was employed in ‘Křižík Works’ (plant for the production of electrical devices) in Prešov as a leader of the department with ~150 co-workers for the technological preparation of the devices production. At the end of 1959 on the basis of a competition he began to be employed at present Institute of Materials Research of Slovak Academy of Sciences (IMR SAS) in Košice.

This change in character of the job was deciding for his further research activity. He became the leader of a new formed department for the research of the properties of deep drawing steels produced from the large ingots orientated for the need of new established ‘Eastern Slovak Iron Works’ in Košice beside the department for powder metallurgy existing at the institute since 1955. In 1965 he sustained the PhD thesis ‘Effect of chemical and structural heterogeneity of deep drawing strips on mechanical properties’. Because the investigation of wrought steels was stopped at the institute, he became in 1966 the leader of a department for ferrous powder metallurgy. The first object of the research was the production of sponge iron powder by the reduction of mill scale. This project was perfected in 1970 by the installation of the equipments for the production of 1000 t/y of sponge iron powder in ZVL Dolný Kubín.

After this work he was with the co-workers interesting in the investigation of the properties of sintered iron mainly of the relations between the porosity and mechanical properties. The cooperation with ZVL Dolný Kubín was the part of the research works. The tasks as magnetic soft materials for the application for the production of magnetic brakes for asynchronous electric engines and the PM production of sintered gears for hydrogenerators were for industry performed. In the last mentioned materials the

replacement of nickel as alloying element by manganese was by him firstly realized. In 1978 his employment contract at the institute from the political reasons (person inimical to the regime) was not renewed and he had to leave also Košice. Andrej Šalak accepted then the offer to investigate the powder forging of rolling bearing rings in 'Research Institute for the Production of Rolling Bearings' (VURAL ZVL) in Žilina. In the department formed by him with 12 co-workers were developed and successfully tested the PF bearing rings for all types of rolling bearings and an automatic forging line with the capacity of 1200 pcs/h was developed. The installation of the equipments in the 1990 due to the political followed by some economical changes was not realized and the project was finished. During this work period he elaborated and published the knowledge concerning the manganese in powder metallurgy based on his original knowledge about the sublimation and self-cleaning effect of manganese of the sintering atmosphere.

Andrej Šalak was active since 1974 in the organization of four yearly International Powder Metallurgy Conferences in Czechoslovakia. In 1973 was co-initiator of the start-up of the section of Powder Metallurgy in the frame of the 'Czechoslovak Scientific Technological Society' (ČSVTS) which was active in the organization of the mentioned conferences. Beside them he was the organizer of the national three yearly seminars on powder metallurgy. His activity in ČSVTS was awarded by many medals and diplomas.

Andrej Šalak after the political rehabilitation in 1990 began to work again as emeritus at the IMR SAS Košice. He was scientifically interesting in the projects granted by Slovak Grant agency, by the Austria-Slovakia grants in low alloyed (Mn, Cr, Mo) sintered steels, in sinter boriding of PM steels and in a NATO project (manganese steel).

In 1996 he sustained the DrSc. thesis 'Manganese in Powder Metallurgy' and received the title 'Doctor of Sciences' (big doctor).

Andrej Šalak is the author of more than 400 scientific publications in journals and in proceedings and of number of patents. He is the author of two university PM textbooks and of a book 'Sintered and Powder Forged Steels' in Slovak, and he lectured in PM at the Technical University of Bratislava and Košice. The works of him were orientated always beside the science to the industry, as can be seen also from the above mentioned book 'Ferrous Powder Metallurgy' which was awarded the Prize of Slovak Academy of Sciences and as will be seen also from the book 'Machinability of Powder Metallurgy Steels' elaborated with the co-authors M. Selecká and H. Danninger which will be edited at the beginning of 2005.

He was in 1995 awarded the 'Gold Medal' of the Slovak Academy of Sciences and in 2004 the 'Distinguished Service Award' of EMPA.

We hope that he will still retain his links to his institute at which he worked from 1959, with the mentioned interruption, up to the end of 2004, and keeps himself informed about the work done here.

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