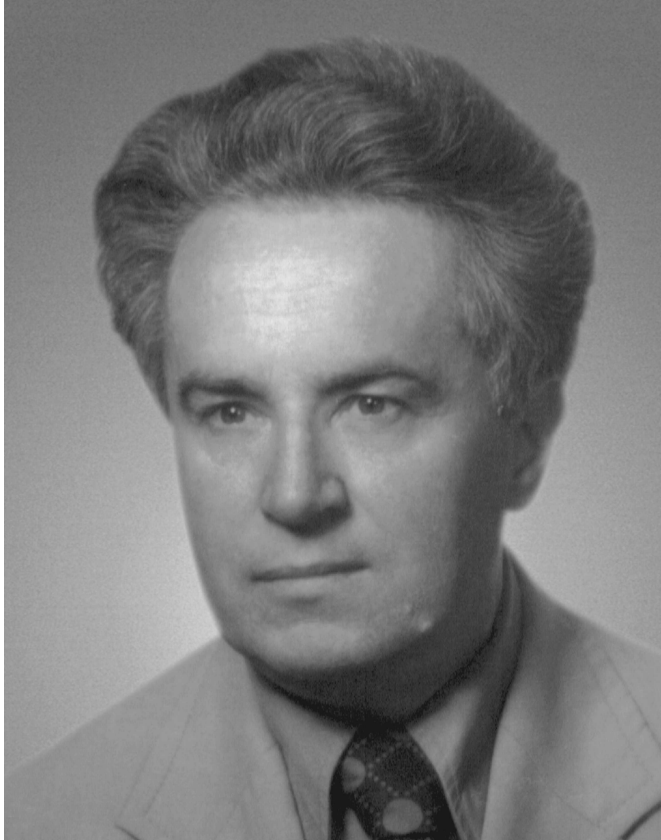


PROFESSOR STEFAN CZARNECKI  
(1925–1982)



On September 1-st 2007 it would have been 25 years from the death of Professor Stefan Czarnecki, a well-known Polish acoustic engineer. Some of his achievements should be reminded here. First of all, it should be remembered that it was his initiative to organize in Poland conferences on noise reduction and that he was a founder of “Archiwum Akustyki” the journal, which later was changed into “Archives of Acoustics”.

Current, 14-th International Conference NOISE CONTROL 07 continues works of Stefan Czarnecki. The most important papers from the conference will be published in “Archives of Acoustics”.

Professor Stefan Czarnecki was born in Warsaw on September 20-th 1925. Since 1945 he studied in the Department of Electrical Engineering of Gdańsk University of Technology. He obtained M. Eng. Diploma in electrical engineering in 1949 after presentation of the thesis "Scaling of dynamic microphones by reciprocity method". He worked for a couple of years in the Central Laboratory of the Polish Radio and in the Warsaw University of Technology. In 1953 he started working in the Institute of Fundamental Technological Research of the Polish Academy of Sciences (IPPT PAN) in Warsaw.

The Ph. D. title in technical sciences granted by the Scientific Council of the IPPT PAN he achieved in 1959 after defending the thesis: "Unevenness of acoustic sounds in closed spaces". The Ph. D. DSc. title he obtained in 1965, also in the Institute of Fundamental Technological Research, PAN in Warsaw on the basis of the thesis: "Cooperation of Helmholtz resonators with the surrounding environment".

On the basis of fundamental mathematical dependencies concerning laws of reflection and radiation of acoustic waves, S. Czarnecki presented analytically problems of cooperation of resonators with the surrounding environment. Taking into account the obtained dependencies he theoretically examined an influence of the surrounding medium on absorptive properties of Helmholtz resonators in the field of two-dimensional wave. His experimental tests fully confirmed the theoretical calculations. The obtained results enabled explanations of several phenomena accompanying the resonance operations and are still useful in acoustics of interiors and in noise control.

He was appointed assistant professor in 1966 and associate professor in 1972 (by the State Council). In 1980 he became the full professor.

Professor Stefan Czarnecki left a very wide scientific attainment as the result of more than 30 years of scientific activity.

He published more than 100 papers, which topics were related to technical acoustics and mechanical vibrations. Professor S. Czarnecki was mainly dealing with problems of aeroacoustics, acoustics of industrial interiors, and identification of routes of vibroacoustic energy transfer.

He co-operated scientifically with several institutions in Poland, among others: Institute of Mechanics and Vibroacoustics of AGH University of Science and Technology in Kraków, Fryderyk Chopin Academy of Music in Warsaw, Central Institute of Labour Protection, Building Research Institute, Adam Mickiewicz University in Poznań, and Central Mining Institute. The co-operation took various forms, such as: joint investigations, seminars, lectures, jointly written publications.

I was one of his closest coworkers. Our investigations performed in the Institute of Mechanics and Vibroacoustics, AGH comprised problems concerning identification of vibroacoustic energy transmission as well as identification of sources of this energy in machines, devices and industrial objects.

Stefan Czarnecki developed a new system of identification of sound sources, based on the application of the near field method with the correlation technique and phase method, with using the impulse method, which allowed to divide practically the energy propagation routes in simple technological systems. He developed and disseminated the energy methods of assessment of the surface sound sources radiation, especially by plate systems, showing significant dependences between radiated acoustic energy and

normal vibrations of the source surface. As one of the first in the world he was dealing with the quantitative estimation of acoustic field distribution at conditions of partially reverberate field. Introduced by him the method of decreasing sound level intensity was successfully applied for the quantitative evaluation of an acoustic power radiation by sources, eliminating the necessity of measuring the reverberation time.

Specially important and fruitful was his activity in noise and vibration control in our country. The nation-wide program of noise control – prepared with his active participation – contributed significantly to diminishing hazards in industrial environment. He organised National Conferences on noise control (from 1964), at first every four years and later every three years. Such Conferences, with the participation of people from several countries, took place in 1964, 1970, 1973, 1976, 1979 (together with the Inter-Noise Congress). Since 1976 those conferences were International ones and their official name was “NOISE CONTROL”.

Wide international cooperation of Professor Czarnecki should be also highlighted. He represented Poland during various scientific Conferences and Congresses. At the 1-st Congress of the Federation of European Scientific Associations, FASE in 1975 in Paris, he had a plenary lecture: “Acoustic Silencers of Exhaust Noise in Industrial Installations”. Professor Czarnecki personally participated in various international scientific meetings. The most important achievement in this field was the organization of the 2-nd FASE Congress in Warsaw in 1976 and the International INTER NOISE Conference in 1979.

Prof. S. Czarnecki actively participated – as a member of the management board – in works of the “International Institute of Noise Control Engineering”. He was a member of the Scientific Council of the International Center of Building Acoustics, RWPG in Bukarest. In 1980 he was chosen the “Fellow” of the Acoustical Society of America.

Professor Stefan Czarnecki was often appointed a Session Chairman during Congresses and Conferences, e.g. ICA Congresses in Sydney and Madrid, Inter Noise Conferences in Zurich, San Francisco, Amsterdam, Miami.

Professor Czarnecki was the founder and from 1966 the editor-in-chief of the Polish Academy of Sciences quarterly “Archiwum Akustyki”, and from 1976 also the editor-in-chief of its English version “Archives of Acoustics”.

Since year 1964, from the very moment of formation of the Acoustic Committee of the Polish Academy of Sciences, he hold a function of the Scientific Secretary and in 1972 he became the Deputy President of the Committee. He was also one of the founding members of the Polish Acoustic Association (in 1964), in which he was for many years the Deputy Chairman.

Among numerous functions of Professor Stefan Czarnecki the memberships in the National Council of Environment Protection and in several scientific councils should be mentioned here. For many years he was the Deputy Chairman of the Scientific Council in the Institute of Mechanics and Vibroacoustic, AGH. He held several managerial posts, e.g. in the Aeroacoustic Division in the Institute of Fundamental Technological Research, PAN.

As can be seen from this short resume of the activities of Professor Stefan Czarnecki, he was always in the very centre of events in the Polish acoustics. He was considered the real “spiritus movens” of the acoustic circle and enjoyed an immense authority in this circle.

Not only the scientific activity but also properties of his character contributed to his high authority. The basic virtue of his character was righteousness and kindness for people and problems. He participated in every action, which he considered the right one and, in which he anticipated the possibility for him to be effective. He always tried to help people, who needed help, always was ready to sacrifice his time for other persons.

He used to speak about himself: “That was not an accident that I decided to deal with acoustics. Acoustics originates from physics and mechanics and a typical feature of mechanics is motion. Thus, motion is my element”. Really Stefan Czarnecki was a personification of a motion. He was always very active, fast in decisions and in moving from place to place.

Full of inventions, ready to undertake and perform every difficult task, he carried away others with his enthusiasm.

This enthusiasm and invention featured him also in a private life. He was passionately fond of tourism and sports. When he was young, he practiced mountain climbing. He took part in several alpine expeditions, among others into the Caucasus Mountains. He was so much fond of Pieniny, where he often wandered, that he even wrote a guide-book for them.

All of his life he used to ski and swim regularly.

He was interested in all events of public and cultural life and was always fully familiar with the newest happenings. A special time balance, which allowed him for all this activities, was his strictest secrecy and a subject of friends’ envy.

During his stay in the United States he suffered a serious sickness in the result of which his both kidneys were removed. People, who thought that this would weaken him totally, were wrong. Even during the convalescence and later during a long period, when each week was shorter by two days spent on dialysis in hospital, he was professionally active. After a successful implantation of a kidney he completely returned to the previous life style and was again extremely active scientifically and organisationally. His optimistic approach to life was seen.

Scientific and organisational attainment of Professor Stefan Czarnecki, his extraordinary activity, kindness for everybody and virtues commanded respect and admiration in scientific circles not only in Poland.

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