ARCHIVES OF ACOUSTICS
17, 1, 3–5 (1992)

Oswald Leroy – the h.c. doctor of the Gdańsk University

Photo: Piet Hellin, Kortrijk

The University of Gdańsk conferred the degree of doctor honoris causa on Oswald Leroy, the professor of mathematics and physics at the Catholic University in Leuven –the Kortrijk Campus (Belgium), a well-known specialist in the world and the authority especially in acousto-optics.

The solemn promotion was held on 8th February, 1991. Professor Antoni Śliwiński, who was the promotor, presented in his laudation the person and the scientific achievements of Professor Leroy, particularly emphasizing the theory of light and two-beam ultrasonic interaction. This theory was developed for a wide range of frequencies, intensities and phase shifts. As a result of twenty years co-operation with the University of Gdańsk, the theory was verified experimentally by acousto-optical group at the Institute of Experimental Physics (P. Kwiek, A. Markiewicz, A. Śliwiński).

The most important and well-known in the world achievements of Professor Leroy in acousto-optics are following:

– elaboration of the theory of light diffraction on complex systems of ultrasonic beams,

– explanation of the interaction mechanisms between light and ultrasounds, taking into account phase and amplitude relations,

– determination of symmetry conditions of acousto-optical spectra in various systems of the interaction between light and ultrasounds,

– determination of light intensity modulation by ultrasounds depending on evenness and oddness of the interacting components in two-beam systems,

– application of acousto-optical interactions for the determination of reflectivity and loss coefficients on boundary surfaces of real media. Professor Leroy has also great achievements in theoretical physics. His activity in this field is concerned with: examination of symmetry problems in physics, proofs of the existence of solutions to the problem of heavy particles movement in the field of the Earth, construction of self-coupling Hill operators having periodic eigen functions, new approach to the propagation of electromagnetic and elastic waves in non-homogeneous media, behaviour of waves on a statistically non-uniform liquid solid boundary, mechanism of bend wave reflection. Professor Leroy published more then eighty papers, which were several times cited by eminent research workers, and were also introduced to monographies and books. From among these papers, twelve were published in co-operation with the authors from the Gdańsk University.

Professor Leroy is a member of many Societies and Scientific Committees not only in Belgium but also abroad. He was a lecturer not only at European universities but in the USA and Japan as well.

Concluding, Professor Śliwiński emphasized that Polish physicists particularly those dealing with acousto-optics, greatly appreciated Professor Leroy's authority, scientific achievement and also his friendly attitude towards Poland.

In his speech, Professor Leroy thanked the Rector of the University of Gdańsk – Professor Grzonka, Senate and promotor – Professor Śliwiński for conferring on him the h.c. doctor of the University of Gdańsk. He also thanked the Rector of his university – Monseigneur Maertend, who was also present, for all his efforts in supporting the co-operation with the University of Gdańsk. He emphasized that during his each visit in acousto-optical laboratory at the University of Gdańsk he was surprised with the state of development of laboratory because certain investments were made in the proper apparatus, and the theory was not only for the first time experimentally verified here

but also he was inspired to further theoretical work.

He said: "After solving the diffraction problem, which took us about twenty years, now we are researching the inwerse problem. We want to 'see' ultrasound; in particular, we want to look at the ultrasound reflected and transmitted through an unknown medium. In general. I could say that we are researching image techniques based on acousto-optical interaction."

He also mentioned the relationship between Poland and Flanders, their similar cultural roots and way to freedom. In conclusion he said that he admired a great satisfaction because of the titule of the h.c. doctor of the Gdańsk University.

Stanisław Zachara