

## In Memoriam

### Professor Eugeniusz Kozaczka



1942 – 2025

Professor Eugeniusz Tadeusz Kozaczka, member of the Polish Academy of Sciences, passed away on May 27, 2025, in Gdynia. We write these words with profound sorrow and deep regret, mourning the loss of such an exceptional person as Professor Eugeniusz Kozaczka.

Eugeniusz Tadeusz Kozaczka was born on July 22, 1942, in Ćwików, Dąbrowa County, in the Lesser Poland Voivodeship. He completed his primary education in his hometown of Ćwików, then attended the Mining Vocational School in Katowice, after which he continued his studies at the Mining Technical Secondary School in Dąbrowa Górnicza.

While studying at the Technical School, one of his teachers encouraged him to pursue higher education, and he successfully passed the entrance examinations for both the AGH University of Science and Technology and the Jarosław Dąbrowski Military University of Technology in Warsaw (WAT). He chose the Military University of Technology, which he graduated from in 1971, earning a Master of Science in Engineering in the field of Technical Physics on the basis of a thesis entitled ‘Studies of Thin BiMn Layers’ (Bismuth-Manganese).

In 1976, at the Szewalski Institute of Fluid-Flow Machinery of the Polish Academy of Sciences, he obtained his PhD after defending his dissertation entitled ‘Studies of Hydroacoustic Disturbances in Bounded Media’.

In 1980, at the Faculty of Mechanical Engineering of the Military University of Technology, after presenting his dissertation ‘Study of Underwater Acoustic Disturbances Generated by a Ship Propeller’, he earned his habilitation degree. In 1990, he was awarded the title of Professor of Technical Sciences, conferred through a procedure conducted at the Polish Naval Academy in Gdynia.

He served with the rank of Commander in the Polish Navy and worked for many years at the Polish Naval Academy named after the Heroes of Westerplatte. Later, he was employed at several other universities, including the Faculty of Ocean Engineering and Ship Technology of the Gdańsk University of Technology, the Bydgoszcz University of Science and Technology, and the Koszalin University of Technology.

Eugeniusz Kozaczka was a specialist in hydromechanics and hydroacoustics, and a passionate explorer and observer of the marine environment.

He conducted research on the generation and propagation of elastic waves in water, including: underwater noise produced by a moving vessel; the transmission of mechanical energy from the hull into the water; the transfer of vibrations into the marine environment by rotating blade systems; hydroacoustic noise generated by a cavitating propeller; and the propagation of underwater noise produced by a moving ship in shallow seas. His work also encompassed methodologies

and systems for measuring underwater noise; nonlinear hydroacoustics; the theory of high-intensity waves propagating in the specific nonlinear medium of seawater, including low-salinity seawater; the development of unique measurement and research tools for exploring the marine environment; the study of seabed structure using methods of linear and nonlinear acoustics; the theory of waveguide (modal) propagation of waves in shallow seas; and variability in the propagation conditions of elastic waves in the southern Baltic, resulting in unique studies of the acoustic climate of this region of the Baltic Sea.

His major theoretical achievements included: developing the theory of underwater noise generation by a ship's propeller; advancing the theory of nonlinear interactions of elastic waves in low-salinity seawater; and contributing to the theory of wave propagation in bounded aquatic environments.

His most important practical achievements included: a series of solutions for reducing vibrations in ship machinery and the associated underwater noise, implemented in the production of mine sweepers for the Polish Navy (7 patents); the construction of a shore-based hydroacoustic control and measurement station for naval vessels, which was introduced into service in the Navy in 1991 and is still used today to measure underwater noise from ships; the development and construction of the first measurement hydrophone in Poland; and carrying out globally unique measurements of the seabed sediments in the Gulf of Gdańsk using nonlinear acoustic methods.

He reviewed 11 applications for professorships, 22 habilitation theses (including 6 publication-based ones), and 16 doctoral dissertations, and he supervised 18 PhD graduates himself.

He participated in numerous research projects funded by the Committee for Scientific Research, the Ministry of Science and Higher Education, and the National Center of Research and Development.

He was a member of numerous Scientific Councils: the Faculty of Navigation and Naval Weapons of the Polish Naval Academy, the Institute of Oceanology of the Polish Academy of Sciences, the Faculty of Mechanical Engineering of the Koszalin University

of Technology, the Faculty of Telecommunications and Electronics at ATR in Bydgoszcz, the Institute of Fluid-Flow Machinery of the Polish Academy of Sciences, and the Faculty of Ocean Engineering and Ship Technology of the Gdańsk University of Technology.

He was a member of numerous scientific societies and organizations, in which he held important positions. From 2002 to 2011, he served as Chairman of the Main Board of the Polish Acoustical Society; from 2003 to 2007, as Vice-Chairman of the Main Board of the European Acoustics Association; from 2007 to 2013, as a member of the board of the International Commission for Acoustics.

From 2011 to 2020, he was Chairman of the Acoustics Committee of the Polish Academy of Sciences, and since 2018 he has served as Chairman of the Scientific Commission of the PAS Branch in Gdańsk, 'Acoustics in Technology, Medicine, Marine Research, and Underwater Security Systems', actively contributing to the development of the national scientific community and international cooperation.

He was also a member of the Editorial Committee of Hydroacoustics and Chairman of the Editorial Board of Archives of Acoustics.

Professor Kozaczka, a corresponding member of the Polish Academy of Sciences since 2016, was awarded the Knight's Cross and the Officer's Cross of the Order of Polonia Restituta, as well as medals from the National Education Commission, the Ignacy Malecki Medal, and the Mikhail Lomonosov Medal. He also received numerous other awards, including those named after Xawery Czernicki, as well as awards from the Minister of Science and Higher Education, the Minister of National Defence, and the Rectors of the Gdańsk University of Technology and the Commandant of the Polish Naval Academy.

His scientific and educational accomplishments have left a lasting mark on Polish science. He will remain in our memory as a person of profound knowledge, devoted to his work, and service.

Professor Bogumił Linde, D.Sc.  
Dr. Iwona Kocharńska, D.Sc.