

ANATOLY V. KOZAR

(to 75th anniversary of birth)

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On January 11, 2022 turned 75 years old of Anatoly Viktorovich Kozar, Doctor of Physical and Mathematical Sciences, Professor of the Department of Photonics and Microwave Physics, Faculty of Physics, Lomonosov Moscow State University, a full member of the Russian Academy of Natural Sciences, a well-known specialist in the field of radiophysics, optics and condensed matter physics.

A.V. Kozar was born on January 11, 1947 in Moscow into a military family. In 1954 he went to school. Love for physics, mathematics, chess, sports, music from early childhood was instilled by his father. From the 9th to the 11th grades, Kozar studied at a school with a physical “bias”, which was patronized by the Faculty of Physics of Lomonosov Moscow State University, and schoolchildren underwent “internship” at the Faculty of Physics, and after graduation, everyone received the qualification “laboratory physicist”. In 1965, after graduating from high school, Anatoly Viktorovich entered the Faculty of Physics of Lomonosov Moscow State University. From the 1st year, Kozar was enrolled in the central section of MSU in gymnastics (he completed the standard of a master of sports by the 10th grade) and, at the same time, was selected for the musical group of Sergei Nikitin, actively participated in amateur art activities of the faculty. During his studies at the faculty, in addition to the usual work for students of that time in construction teams, A.V. Kozar participated in geophysical expeditions.

In the 3rd year, Anatoly Viktorovich was assigned to the Chair of Radiophysics (then Radio Engineering) and ended up in the scientific group of Associate Professor A.I. Kostienko to the direct supervision of

Yu.A. Pirogov, then an assistant. Kozar was invited to experimentally study the phenomenon of cross-modulation from the infrared to the microwave range during the interaction of these radiations with semiconductors. After the first experimental attempts to obtain the effect, it became clear that without a detailed theoretical study of all physical mechanisms that cause this phenomenon and finding the optimal combination of structural and wave parameters of semiconductor materials, one cannot count on a positive result. So, in addition to microwave electrodynamics, optics and mathematical methods for solving inverse problems, he had to study in depth the physics of solids, in particular, semiconductors. The result of this approach was not long in coming. And already in his diploma work, a number of new theoretical, experimentally confirmed results were obtained.

In 1971, after graduating from the faculty, Anatoly Viktorovich was left to work at the Chair of Radiophysics as a senior laboratory assistant. In 1972, Kozar became a junior research fellow, in 1987 a research fellow, in 1987 a senior lecturer, in 1991 an associate professor in the Chair of Radiophysics, and in 2005 a professor in the Chair of Radiophysics.

In 1987, Anatoly Viktorovich Kozar became the Deputy Dean of the Physics Faculty for economic, administrative-financial work. From the very beginning of the difficult period of our higher education and science until 2017, Anatoly Viktorovich led this complex, responsible work. In the successful development of the faculty during this period, one cannot overestimate the contribution of Anatoly Viktorovich. A.V. Kozar was a member of the Academic Council of the faculty (1987-2017), is a member of the dissertation council of MSU D 501.001.67 and MSU 01.08, a member of the SAC and SEC, a member of the Editorial and Publishing Council of the Physics Faculty (1987-2017), member of the editorial board of the journal RENSIT.

It is surprising and admirable how, with such a colossal administrative burden, Anatoly Viktorovich managed to engage in pedagogical and scientific work. Throughout all the years of work at the faculty, Anatoly Viktorovich Kozar, in addition to scientific and teaching work, constantly performed various public and administrative assignments: he was the secretary of the komsomol organization of his chair, Department

of Faculty, party organizer of his cheer, member of the party bureau of the Department of Radiophysics, head of the cheer laboratory, chairman of various administrative commissions of the faculty. Moreover, everyone who had the opportunity to interact with Anatoly Viktorovich notes his goodwill, sensitive attitude towards employees, calmness, desire to help in solving sometimes the most difficult task. In 1975, he defended Ph.D. thesis on the topic "Investigation of a photoresistive receiver with a microwave bias with waveguide inclusion of a photosensitive element." In 1987, a doctoral dissertation was almost ready, but due to the new responsible administrative burden, its technical design had to be postponed indefinitely.

Anatoly Viktorovich pays great attention to teaching work. He graduated more than 40 diploma students, conducts practical classes with students, reads special lecture courses ("Waves in layered media", "Modern problems of photonics and microwave physics"), accept entrance exams to the Faculty of Physics and exams of the candidate minimum. Diploma students of Anatoly Viktorovich took 1st places at faculty and all-Russian competitions of diploma works. Many undergraduate and graduate students recall with gratitude his sensitive guidance.

The main scientific interests of A.V. Kozar are in the field of physics of the processes of propagation and interaction of waves with inhomogeneous media. He is the author of over 150 scientific publications in radiophysics, electronics, optics and medical physics. He participated in and supervised a number of research projects on government and special topics. In 1975-1982 participated in the work on cooperation between MSU and automobile plant ZIL on the development of devices for non-contact temperature control during induction and laser heat treatment of parts in in-line industrial production. He theoretically predicted and experimentally studied the phenomenon of complete absorption of wave energy in spatially inhomogeneous media, the phenomenon of laser stimulation of nonstationary absorption of microwave energy in semiconductors, the phenomenon of nonstationary reflection of electromagnetic waves with varying amplitude and (or) phase from layered inhomogeneous media. A theory of a new class of multilayer interference structures (π -structures) with unique invariant wave and structural properties has been developed. A.V. Kozar developed the theory of equivalent wave representations for weakly and strongly spatially inhomogeneous media, discovered

and determined the long-wave boundary for the existence of interference phenomena in spatially inhomogeneous media. The results of theoretical and experimental studies obtained by Kozar are widely used in practice: a number of unparalleled instruments and devices have been created and introduced into various branches of the domestic industry. He is the author of a number of patents and inventions

In 2004, at the insistence of colleagues and friends, Anatoly Viktorovich Kozar defended his doctoral thesis "Interference phenomena in layered structures and their application in problems of signal reception and diagnostics of inhomogeneous media." In a review of Kozar thesis Corresponding Member RAS D.I. Trubetskov wrote: "Not every dissertation autor can boast of discovering a new physical phenomenon... This is a rare work for today, in which theory and experiment, analytical and numerical methods are equally presented, in which constant striving to bring the results to practical applications and implementation".

In 2006, for the series of works "Nonlinear wave phenomena in layered structures, media with space-time dispersion and their applications in photonics", A.V. Kozar was awarded the M.V. Lomonosov Prize for scientific activity.

For many years of fruitful scientific and pedagogical activity and a great contribution to the training of highly qualified specialists, A.V. Kozar was awarded the medal of the Order "For Merit to the Fatherland" II degree, the silver medal of VDNKh of the USSR, the medal "In memory of the 850th anniversary of Moscow", the jubilee breastplate sign "250 years of Lomonosov Moscow State University", badge and honorary title "Honorary Metrologist", medal "For Valiant Labor", anniversary medal "70 Years of Victory in the Great Patriotic War of 1941-1945", Prize of the Ministry of Higher Education of the USSR, Certificate of Honor of the Ministry of Education of the Russian Federation, marked with thanks from the Rector of Lomonosov MSU.

Friends, colleagues and students sincerely congratulate Anatoly Viktorovich on his jubilee and wish him good health and further creative success for the benefit of the higher school, his native Physics Faculty and our Russian science.

The editorial board of RENSIT journal of the Department of the Russian Academy of Natural Sciences cordially joins these wishes.

Editorial board RENSIT journal