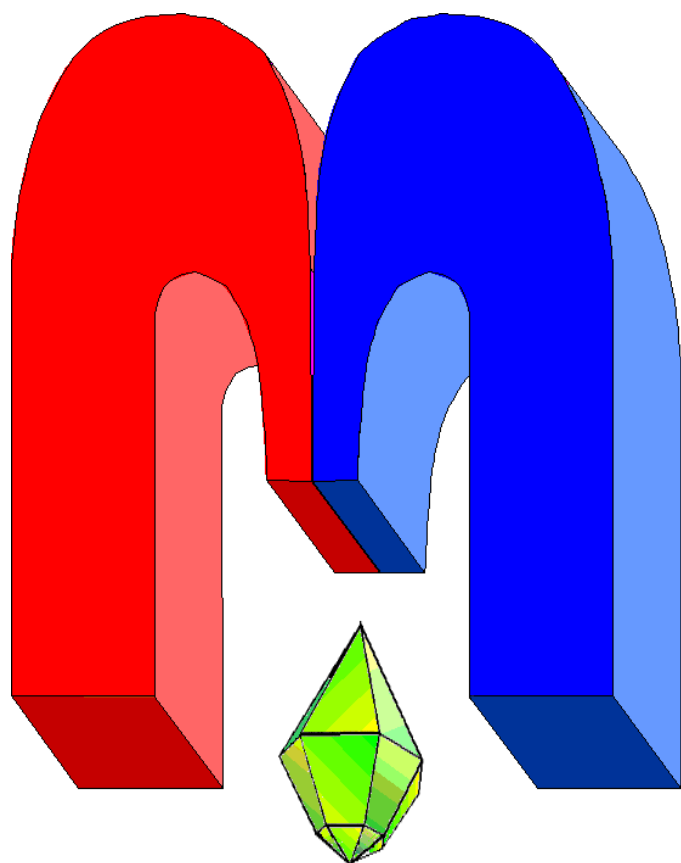


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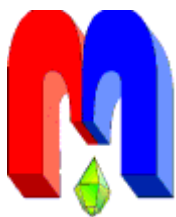
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* In Kazan University the Electron Paramagnetic Resonance (EPR) was discovered by Zavoisky E.K. in 1944.

70 year anniversary of Professor Valentine A. Zhikharev

On March 10, 2017, we have celebrated the 70-th birthday of the well-known physicist-theoretician Valentine Alexandrovich Zhikharev*.

He graduated from the Department of Theoretical Physics of Physics Faculty of Kazan State University in 1970. During his student years he was known in the students community, and not only, as the author and singer of guitar poetry.

His diploma work was done at the Kazan Physics-Technical Institute (KIPT) of the Academy of Sciences of the USSR under Professor Kessel A.R. supervisory in close cooperation with the experimenters of the Metal Physics Laboratory headed by Professor E.G. Kharakhashyan. In the diploma, he calculated the manifestation of the Kondo effect in the width of the MR line in superconductors. Since 1970, he has been working at the Soviet Union Academy of Sciences of the USSR.



Further Valentine closely cooperated with F.G. Cherkasov and Yu.I. Talanov. The main result of this cooperation was the construction of the theory of the spin echo of the conduction electrons of metals (expressions were obtained that describe the dependence of the amplitude of the echo and induction signals in bulk samples, the phenomenon of spin transparency of metals in the pulsed mode and the effect of modulation of the electron echo amplitude in small metal particles were studied, the contribution of surface spin scattering was calculated). In 1975 Valentine has defended the Ph.D. thesis. One year later he was awarded the Musa Jalil Komsomol Prize of the Tatarstan in the field of science and technology.

The scientific activity of V.A. Zhikharev in 1975-1990 was devoted to:

- Theoretical consideration of the combined resonance of electrons held near the surface of the metal in the potential of image charges and the explanation of experiments on the pulsed microwave effect on the metal surface conducted at the KIPT;
- Study of the anomaly of the tunnel conductivity of contacts containing paramagnetic impurities and the establishment of the fact that the contact conductivity depends radically on the degree of saturation of the resonance of the impurity centers. The effect makes it possible to use the tunnel contact as a detector of resonance of impurities in the contact;
- Theoretical study of transient processes in the nuclear spin system of "dirty" conductors and the

* The photo was taken by Natalia Zhikhareva, the wife of the hero.

discovery that the specific features of the electronic structure (localization effect) lead to the logarithmic law of the restoration of nuclear magnetization after a pulse influence.

After the move in 1990 to the Laboratory of Radiation Physics headed by I.B. Khaybullin Zhikharev's activity changed to:

- Mathematical modeling of fast ion implantation processes in various matrices, explanation of the anomalous distribution of iron and cobalt ions in the surface layer of the silicon matrix during their simultaneous implantation, calculation of the effect of radiation acceleration of diffusion on the formation of iron silicides in ion-beam synthesis;
- Construction of a model of pore formation in thin films of semiconductors under ion irradiation;
- Investigation of the magnetic properties of thin granular metal films obtained by implanting iron and cobalt in silicon, polymer matrices.

Twenty years of hard work have realized in the defense of the doctoral thesis "*Non-stationary processes of spin resonance in disperse metal systems*" in 1996. In 1997 the important event has happened. In collaboration with Professor Tagirov M.S. Valentine participated in the reviving of the famous Scrotzkii Scientific School for young scientists specializing in magnetic resonance. Since 1997, for twenty years already, the annual School for Young Scientists "*Actual problems of magnetic resonance and its applications*" is working. Being a vice-rector, Valentine Alexandrovich is a responsible person for the publication of the works of young "schoolchildren".

In 1999 Valentine Alexandrovich became the "big boss": the Head of the Higher Mathematics Department of Kazan National Research Technological University (KNITU-KHTI).

In spite of a lot of new organizational activities he continued his collaboration with the Physics and Technology Department of the Russian Academy of Sciences. His achievements in this period were:

- Mathematical modeling of the formation of quasi-two-dimensional magnetic clusters in the process of implantation;
- A model was proposed and computer experiments were carried out to form particles of complex (magnetic) silicides when iron was implanted into a silicon matrix in the presence of an external magnetic field.

For 15 years he has been the Chairman of the State Attestation Commission for Masters and Bachelors of the KFU Institute of Physics, Member of doctoral dissertational councils at KIPT RAS and KFU.

Professor Zhikharev did a lot to ensure that the journal "*Magnetic Resonance in Solids*" (MRSej), published by Kazan University, was included in the world-leading databases Web of Science and Scopus, and now he is one of the full members of the MRSej editorial board.

Valentine Alexandrovich has a unique talent to clearly and understandably explain the essence of complicated problems to the students and amateurs. He is a very easy to communicate and benevolent man. We wish Valentine Alexandrovich many years of fruitful scientific activity, good health and happiness, new scientific results and discoveries!

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