## PERSONALIA

## In memory of Vsevolod Feliksovich Gantmakher

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Academician V F Gantmakher, the outstanding Russian scientist and a great authority in the field of low-temperature solid-state physics, passed away on 5 March 2015. V F Gantmakher laid the foundation for several new scientific areas in our country and organized one of the most numerous and successfully working scientific schools. VF Gantmakher's dedication to scientific research was striking, as he strived to his last days to actively participate in scientific life: he headed the institute's seminar, made plans for new studies for students in his department at the Moscow Institute of Physics and Technology, and worked on the editorial board of the famous Letters to the Journal of Experimental and Theoretical Physics (JETP Letters). The fascination of his personality and scientific authority of V F Gantmakher spread far beyond our country, and his role in Russian and world science can hardly be overestimated.

Vsevolod Feliksovich Gantmakher was born in Moscow into the family of the well-known mathematician and professor at the Moscow Institute of Physics and Technology (MIPT), F R Gantmakher. Vsevolod Feliksovich received his higher education at MIPT (1954–1959). As a second-year student, like all the students in his group, he began practical research work at the Institute of Physical Problems (IPP). His supervisor was the prominent experimental physicist Yurii Vasil'evich Sharvin. The work under the guidance of Yu V Sharvin and A I Shal'nikov, who was at that time the head of the laboratory where Vsevolod Feliksovich was doing his graduate work and then candidate of science thesis, exerted a great influence on the formation of his scientific style.

After Vsevolod Feliksovich defended his candidate of science thesis in 1964, he moved on to work at the Institute of Solid State Physics (ISSP) of the USSR Academy of Sciences, which had been organized a year before. In spite of this, he pursued to work on his D.Sc. thesis at IPP for another three years. Precisely at that time, he discovered a new way to measure the parameters of degenerate fermion gas (the radiofrequency dimensional effect, also known as the Gantmakher effect) and the possibility of electromagnetic wave penetration into metals in a magnetic field by a chain of orbits (the Gantmakher-Kaner effect, registered later as a discovery). At the same time, he began teaching at MIPT, where he held the professor position beginning in 1971. In the first years after the foundation of ISSP, Vsevolod Feliksovich participated most actively in establishing at the new institute the principles of research work laid out in the Charter of the scientific community of ISSP. Further on, during almost a half century of work at the Institute, Vsevolod Feliksovich brilliantly embodied common sense, and in many arguable or crucial situations his opinion was decisive. As a man of highest scientific authority and outstanding personal qualities, Vsevolod Feliksovich promoted for many years the main-

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Vsevolod Feliksovich Gantmakher (08.10.1935-05.03.2015)

tenance of a friendly atmosphere and creative approach to scientific work at the Institute. In this sense, V F Gantmakher should rightfully be thought of as one of the founding fathers of today's ISSP.

Vsevolod Feliksovich defended his doctoral thesis in 1967, and beginning in 1968 he carried over his work completely to Chernogolovka, to the Laboratory of Low Temperature Physics in ISSP. This was not simply moving to a new place to continue his previous research. The first two or three years, Vsevolod Feliksovich actively sought for possible new areas of research for himself and his colleagues. In 1974, he founded the Laboratory of Electron Kinetics, which received part of the newly erected Magnetic building at ISSP. At that time, Vsevolod Feliksovich's range of scientific interests was surprisingly broad, from superconductivity to nonlinear properties of normal metals, quantum phenomena in the transport properties of semiconductors, and the problems of localization in disordered media. In later years, he experimentally demonstrated the possibility of Cooper pair localization in amorphous superconductors and the occurrence of

the related superconductor-insulator quantum phase transition.

Vsevolod Feliksovich's teaching activities deserve special attention. From the foundation of the Department of Solid State Physics (SSP) at MIPT in 1964 and up to 1989 he was the Deputy Head, and from 2008 the Head of the Department. The most important achievement of Vsevolod Feliksovich was organizing two original lecture courses embracing a wide range of problems in the physics of electron systems from normal metals to mesoscopic structures. Vsevolod Feliksovich constantly renewed the lecture courses and laboratory workshop, and attracted young specialists to the work at the SSP Department.

Vsevolod Feliksovich was known for his peculiar style of teaching, scientific tutorship, insistence on the highest standards, and fairness. These features of him not only made it possible to reveal the abilities of students and disciples, but also taught them to solve problems most efficiently. It is not accidental that V F Gantmakher's numerous disciples achieved success in science and in other fields of activities and now work both in Russia and in many other countries. Among his disciples there are at least a dozen D.Sc.'s researchers who represent the full-valued V F Gantmakher scientific school.

For many years, V F Gantmakher headed the lowtemperature physics seminar at ISSP. The broad mental outlook, inquisitive mind, and ability of Vsevolod Feliksovich to smooth over contradictions created a unique inner atmosphere of the seminar which had long before overstepped the frames of the laboratory.

V F Gantmakher's successful scientific work was widely acknowledged by his colleagues and the scientific community. Already for his studies in the field of radio-frequency dimensional effects he was awarded the Lenin Komsomol Prize. In 2009, he received the P L Kapitza Gold Medal of the Russian Academy of Sciences (RAS), and in 2011 he was elected Full Member of RAS. His books *Carrier Scattering in Metals and Semiconductors* (co-authored with I B Levinson) and *Electrons in Disordered Media* are very popular and have been translated in English.

Vsevolod Feliksovich made a noticeable contribution to the organization of Russian science. He was one of the originators of the grant system in our country, and for many years (from 1990 to 2011) was the Editor-in-Chief of the journal *Pis'ma v ZhETF (JETP Letters)*. As the editor-inchief, he had to fully reorganize the work of the editorial office and to get rid of the many-year traditions of dilatory work; he made the publication process perhaps the fastest in the world. It is a great merit of Vsevolod Feliksovich's that *Pis'ma v ZhETF* managed to keep the position of one of the leading physical journals in our country and in the world.

The brilliant achievements of Vsevolod Feliksovich Gantmakher in scientific, teaching, and organizational activities are inseparable from his prominent personal qualities, namely, wisdom, goodwill, honesty, sense of humor, and optimism. Vsevolod Feliksovich had a surprisingly bright and happy life and died surrounded by his close friends and relatives. His death is a great loss for his friends and colleagues and for all Russian science.

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