Victor Valentinovich Eremenko (1932–2017) in honor of his 85th birthday

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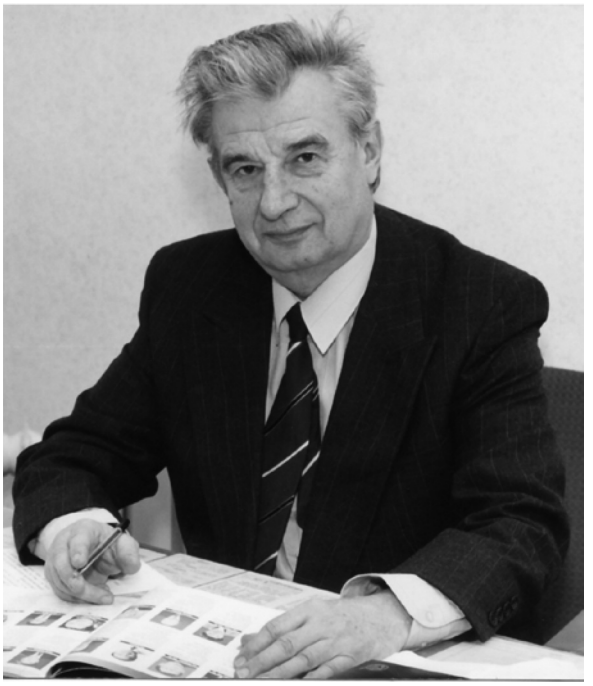

July 26th of this year would have been the 85th birthday of Victor Valentinovich Eremenko, an outstanding Ukrainian scientist and talented leader in science.

All of V. V. Eremenko's scientific activity was associated with low-temperature physics, magnetism, spectral and magneto-optical phenomena, magnetic phase transitions in antiferromagnets, superconductivity and galvanomagnetic phenomena in metals, and exciton processes in antiferromagnetic, semiconducting, and molecular crystals.

Victor Valentinovich was born in Kharkov. In 1955 he graduated from the Physics and Mathematics Department of Kharkov State University with a degree in "Low Temperature Physics." From 1955 to 1961 he studied in graduate school and worked at the Institute of Physics (Kiev), where in 1959 he defended his thesis on the "Optical and Photoelectric Phenomena in CdS Crystals at Low Temperatures," which demonstrated the existence of the exciton-impurity complexes and introduced the very understanding thereof.

In April of 1961 V. V. Eremenko was transferred to the Institute of Low Temperature Physics that was established in Kharkov, where he headed the Electroconductivity and Superconductivity Lab, and later the Magnetism and Magneto-Optics Department. In 1966 he defended his thesis for the degree of Doctor of Physics and Mathematical Sciences on the "Optical Spectroscopy of Antiferromagnets." In 1972 V. V. Eremenko became a Corresponding Member and in 1978 he became an Academician of the Academy of Sciences of the Ukrainian SSR. Starting in 1986 he headed the Department of Spectroscopy of Magnetic and Molecular Crystals at the ILTPE. Between 1991 and 2006 V. V. Eremenko was the director of the ILTPE. In recent years he was the chief research officer of the institute, and an advisor to the Directorate of the ILTPE.

Many scientific results were achieved under the guidance of V. V. Eremenko, and are highly appreciated and rewarded:

The State Prize of Ukraine for Science and Technology (1971) for the discovery, experimental and theoretical study of the intermediate state in antiferromagnets in first-order phase transitions induced by a strong magnetic field.

The Azerbaijan SSR State Prize in Science and Technology (1986) for outstanding results in the field of optical spectroscopy of antiferromagnets (observations and studies of resonance splitting of exciton light absorption bands and exciton-magnon excitations).

The Prize of the USSR Academy of Sciences and the Polish Academy of Sciences for magneto-optical studies of inhomogeneous magnetic states near the magnetic phase transition induced by an external magnetic field.

The K. D. Sinelnikov Prize of the National Academy of Sciences of Ukraine (1985) for optical visualization of collinear antiferromagnetic domains, and the development of methods of switching the collinear antiferromagnetic domains in crystals with different magnetic symmetries.

The L. V. Shubnikov Prize of the National Academy of Sciences of Ukraine (2004) for pioneering studies of magnetoelastic effects in Type II (Shubnkikov Phase) superconductors, especially the quantum magnetic oscillations of magnetostriction.

Other pioneering results heralded by V. V. Eremenko and his students include the observation of magnetic quantum oscillations of the chemical potential in semimetals (bismuth, antimony); observation and study of the exciton-magnon excitations in antiferromagnets, including antiferromagnetic solid oxygen; observation, experimental and theoretical investigation of the delocalization effect of magnetic impurity states; the study of new magneto-optical phenomena in antiferromagnets which have since become known as the "linear magneto-optical effect" and "quadratic magnetic rotation of the light polarization plane" in modern physics publications; the observation, experimental and theoretical study of the exchange modes of antiferromagnetic resonance; the observation, experimental and theoretical investigation of the excitation of magnetic fluctuations by an alternating electric field.

Between 2006 and 2011 V. V. Eremenko received tangible results in the field of high-temperature superconductivity; highly correlated electron systems and nanomagnetism.

V. V. Eremenko is the author of more than 500 publications, among which are three monographs: "Introduction to Spectroscopy of Magnets" (1975), "Magneto-optics and Spectroscopy of Antiferromagnets" (1989), "Magnetic and Magnetoelastic Phenomena in Antiferromagnets and Superconductors" (2004). The last two were reprinted in

English by Springer Publishing (1992) and Cambridge Scientific Publishers (2008).

For many years Professor V. V. Eremenko taught at the Kharkov State University (1966–1999) at the Department of Magnetism. V. V. Eremenko is the co-author of the textbook "Lectures on Magnetism" (1972) published in expanded form in Moscow (2006). His work as an educator was honored with the "Peter Mogila" medal from the Ministry of Education and Science of Ukraine.

For a quarter of a century, V. V. Eremenko was the editor-in-chief of the journal "Fizika Nizkih Temperatur" (Low Temperature Physics) (starting in 1990), a member of the editorial boards of the journals "Fizika Tverdogo Tela" (Solid State Physics) (St. Petersburg) and the "Kosmicheskaya Nauka i Technologiya" (Space Science and Technology) (Kiev), issued by Cambridge Scientific Publishers (England).

V. V. Eremenko is an Honored Scientist of Ukraine (1982).

V. V. Eremenko devoted a lot of attention to international scientific cooperation. He worked actively with the American Physical Society, American Institute of Physics, Institute of Physics of the Polish Academy of Sciences, the Grenoble High Magnetic Field Laboratory and the International Laboratory of High Magnetic Fields and Low Temperatures in Wroclaw (Poland), and many other scientific centers.

V. V. Eremenko is the founder of his own scientific school. His pupils include more than 50 Candidates of Sciences, 14 of which defended their doctoral dissertations, three were selected to the National Academy of Sciences of Ukraine. The students of V. V. Eremenko also include 12 laureates of the State Prizes of Ukraine for Science and Technology.

The editorial board of the Low Temperature Physics journal was preparing a jubilee issue in honor of Viktor Valentinovich's 85th birthday. No one could have imagined that he would leave us in May. We hope that the articles in this issue will serve the bright memory of this outstanding scientist, leader, and remarkable person.

The Editorial Board

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