

IN MEMORIAM OF PROFESSOR TEODOR MUNTEANU



(15 August 1942 – 22 May 2022)

December 17, 2018 was my first day as a trainee researcher in the Cryogenics laboratory at Ghiu Institute of Microelectronics and Nanotechnologies. I was greeted by a gray-haired man with a quiet voice and a cordial look; he was calm and benevolent. That man was university professor, doctor habilitated Teodor Maftei Munteanu. Our first discussion about science began with his question, “What is your subject of research, young man?” I proudly answered, “It is superconductivity!!!” Whereat he exclaimed, “What a coincidence, I also study superconductivity, except that I do it at a theoretical level, rather than at a practical level!” From that discussion, I understood that I was talking to a person who was highly skilled in the fundamentals of crystallography, superconductivity of bicrystals, magnetoresistive effects, semiconductor–semimetal electronic phase transitions, quantum oscillations, and thermomagnetic effects. In addition, he told me about the growth of glass-insulated thin wires and magnetothermoelectromotive oscillations in electron-irradiated AsSb alloys in detail.

Teodor Maftei Munteanu was born on August 15, 1942 in Hârbovăț commune of the Anenii Noi district of the Republic of Moldova. He attended primary school in his native village and continued his studies at Pedagogical Institute in Tiraspol (1958–1964).

He defended his doctorate thesis in 1972 and became a doctor of physics and mathematics in 1987. After that, on June 21, 2001, the didactic title of university professor was conferred to

him.

He contributed to the writing of 250 scientific papers; two of the books were published here, in the Republic of Moldova. He participated with 96 reports at various international scientific conferences and symposiums, such as International Conference on Low-Temperature Physics, European Conference on Physics of Magnetism, and Balkan Physics Conference.

He cooperated with many institutions from the former Soviet Union, Poland, Romania, Bulgaria, Germany, and other countries.

A special field of activities of Teodor Maftei Munteanu was his research at the International Laboratory of Low Temperatures and Strong Fields in Wroclaw, where researchers used to study the behavior of semimetals, narrow-band-gap semiconductors, and superconductors at low temperatures and in extremely strong stationary magnetic fields of 18 T at a pulse of up to 45 T.

Teodor Maftei Munteanu made a quite interesting discovery: he discovered two superconducting phases at nanometric bicrystalline interfaces, which do not exhibit superconductivity under normal conditions. He emphasized that, at these interfaces, superconductivity coexists with weak ferromagnetism.

He was a scientific supervisor of six postgraduate students who defended their doctorate theses.

He worked as editor-in-chief of the Encyclopedia at the Academy of Sciences of the Republic of Moldova in the period of 1972–1974; after that, he was a senior researcher, an interim head of laboratory, and later—in 1986–2004—head of the Laboratory of Physics of Semimetals of Institute of Applied Physics of the Academy of Sciences of the Republic of Moldova. Since 2004, he was the head of the Transport Phenomena Laboratory of the International Laboratory of Superconductivity and Solid State Electronics.

By decisions of the Government of the Republic of Moldova no. 53 of January 27, 1999 and no. 1437 of November 11, 2002, Teodor Maftei Munteanu was appointed as a vice-president of the Higher Attestation Commission of the Republic of Moldova. Since 2005, he was the head of the General Attestation Directorate of the National Council for Accreditation and Attestation.

On March, 2002, by order of the Government of the Republic of Moldova no. 22, the degree of qualification of public official—Counselor of State of rank I, class III—was conferred to Teodor Maftei Munteanu.

In 2012, Teodor Maftei Munteanu was awarded the Glory of Labor order for outstanding merits in research.

He was a personality worthy of admiration and scientific honors.

Vladimir Boian

*Ghitu Institute of Electronic Engineering and Nanotechnologies, Chisinau, MD-2028
Republic of Moldova*