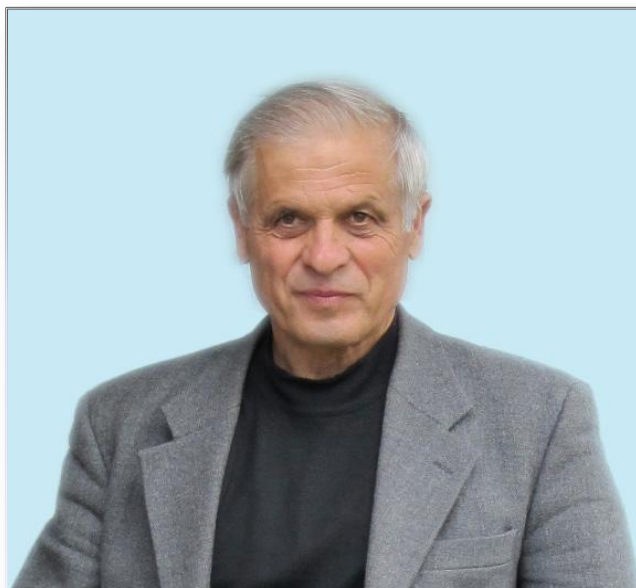


IN MEMORIAM OF ANDREI NICORICI



(December 23, 1947 – September 18, 2016)

We are deeply saddened by the passing away of one of the prominent physicists of the Republic of Moldova Dr. Andrei Nicorici on September 18, 2016.

Dr. Andrei Nicorici was born in Costiceni village, Noua Sulita district, Chernivtsi region, Ukraine on December 23, 1947. In 1965–1970 he was a student and completed his undergraduate degree at the Physics Department of the Faculty of Physical and Mathematical Sciences, Kishinev State University (at present, State University of Moldova). After graduation from the University, he was invited by Prof. I.C. Andronic to work at the Department of Electrophysics of the University, where he held the following positions: laboratory assistant, senior laboratory assistant, junior researcher, and senior researcher. As a laboratory staff member of the department, Andrei Nicorici improved the existing laboratory works and developed new ones; he designed a number of tools for the orientation, cutting, and machining of semiconductor crystals. He registered several innovation proposals.

In 1985, Andrei Nicorici successfully defended his thesis for the degree of candidate of physical and mathematical sciences (at present, doctor in physics and mathematics).

In 1987 he joined the Laboratory for low-temperature physics at the Institute of Applied Physics, Academy of Sciences of Moldova as a senior researcher; in 1995 he became a leading researcher. He proved to be a highly skilled specialist in the field of physics and technology of semiconductor materials. Andrei Nicorici successfully solved an intricate technological problem associated with the preparation of high-quality lead–tin chalcogenide crystals and films with controlled parameters.

Physicist Andrei Nicorici had the ability to solve extremely complex technological and scientific problems. His research was focused on physics of IV–VI semiconductors and device structures on its basis. He proposed a few fundamentally new technological processes and routes and introduced them into practice; these processes were used to synthesize A^4B^6 semiconductor materials and their solid solutions with record physical parameters at the international level.

In 2006, he was elected as the head of Laboratory for physics of solid-state structures. He held this position until 2011. Under his leadership, the laboratory's researchers developed some processes for preparing PbTe/CdTe thin films and multilayer structures, InSb semiconductor microwires, and bismuth-based semimetal microwires. The electrophysical, thermoelectric, and photoelectric parameters of these materials were studied with a view to using them as advanced elements in microdevices. Andrei Nicorici designed and prepared a PbMnTe:Ga compound exhibiting high light sensitivity at temperatures above 77 K and thereby opened up the possibility of developing a new type of photoconverters in the middle and far infrared spectral regions. A. Nicorici prepared some models of these photoconverters. His attention to detail during the design and construction of devices was clear, yet frequently subtle.

For more than 30 years, he had a close collaboration with Prof Dmitrii Khokhlov from the Moscow State University. He was one of the promoters of different bilateral projects with colleagues from Moscow. Andrei Nicorici was involved in many international and national projects concerning the development of different types of infrared and terahertz photodetectors. We were all very proud when Prof. Dmitrii Khokhlov delivering speeches at different conferences emphasized that the IR and terahertz photodetectors designed on the basis of PbTe and PbSnTe semiconductors had the highest sensitivity in the world. Several of these detectors are planned to be used in the near future in a new spatial missions for IR and terahertz monitoring of the extraterrestrial space.

Andrei Nicorici was a very enthusiastic person. In the last period, he was involved in the nanomaterials physics and development of a technology for the preparation of thin films of A^4B^4 compounds doped with group III elements and the preparation of nanostructured layers of A^4B^4 compounds. In addition, he was engaged in the high-temperature aerosol-assisted and liquid-phase synthesis of PbTe nanoparticles to obtain nanocomposites based on PbTe nanoparticles and in the study of their physical properties.

In addition, he gave a course of lectures in technology of semiconductor materials at the University of the Academy of Sciences of Moldova. He has published over 200 scientific papers in peer-reviewed journals in the country and abroad. Recently, one of the last collaborative papers with colleagues from Moscow concerning the magnetic-field-induced terahertz photogeneration in PbTe(Ga) has been published in JETP Letters (2016, vol. 104, pp. 64–67).

Doctor in physics and mathematics Andrei Nicorici will be remembered by his disciples and colleagues as a recognized highly skilled specialist in the field of physics and technology of semiconductor materials and a pleasant person to communicate with. In the person of talented researcher and teacher Andrei Nicorici we lost a friend, a colleague, and one of the important figures in our physics research community. Dr. Andrei Nicorici had two passions during his life—his laboratory and his family.

We express our sincere condolences and profound compassion for his family, relatives, and friends.

Academician Valeriu Kantser
Dr. Sofia Donu