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**IN MEMORY
OF YURI OLEKSANDROVYCH REZNIKOV
(1953–2016)**



Yuri Oleksandrovych Reznikov, Professor, the Head of the Crystal Physics Department at the Institute of Physics of the National Academy of Sciences of Ukraine (IP NASU) passed away on October 8, 2016 in Kyiv. Yuri Oleksandrovych was a leading scientist in optics and condensed matter physics, whose researches gained him status as a world-recognized scientist in the domain of liquid crystals both in Ukraine and abroad.

Yuri Reznikov was born in Kyiv on October 16, 1953. The members of his family were actively engaged in science. His mother Nina Leipunska, Ph.D., was an archeologist and worked all her life at the Institute of Archeology of the NASU. His father was Oleksandr Reznikov, an orientalist, Dr. Sci. in history, a translator from Farsi. When Yuri was a child, his parents divorced. His father moved to the town of Obninsk (Moscow region, Russia), where he lived and worked. Nina Leipunska married Serhii Kryzhyts'kyi, who became Yuri's stepparent since his childhood. S. Kryzhytskyi was an archeologist, Corresponding Member of the NASU, and the Head of Department at the Institute of Archeology of the NASU.

When a child, Yuri was strongly influenced by his grandparents, Oleksandr Illich Leipunskyi and An-

tonina Fedorivna Prikhot'ko, with whom he was in a close contact. The both were the disciples of Academician I.V. Obreimov at the Physico-Technical Institute in Leningrad. Later, they moved to Kharkiv, where they worked at the newly created Ukrainian Physico-Technical Institute; then to Kyiv, to the IP NASU. Oleksandr Illich Leipunskyi, Academician of the NASU, was a world-recognized scientist in nuclear physics. He was involved in the creation of the Institute for Nuclear Power Engineering in Obninsk and headed the construction and exploitation of a fast-neutron nuclear reactor. Antonina Fedorivna Prikhot'ko was the first female Doctor of Science in physics and mathematics in Ukraine (1946), and Academician of the NASU. For a long time, she supervised researches in condensed matter physics at the IP NASU and headed this Institute and the Department of Crystal Physics.

Yuri is survived by his wife Tatiana Nadeina, the patent engineer, and son Dmytro Reznikov, a physicist, who is currently working at the US company Google.

Yuri obtained his Master's degree in radio-physics at the Taras Shevchenko National University of Kyiv in 1976. He was employed by the IP NASU, and all his professional career was associated with this Institute. Having started in 1979 as a laboratory assistant at the Department of Quantum Electronics headed by Prof. M.S. Soskin, he rose to a position of the Head of the Crystal Physics Department, which he held from 1995. Yuri obtained his Ph.D. in physics and mathematics in 1985. His thesis was entitled "The study of the optical nonlinearity of liquid crystals near their electron absorption bands". In 1979–1984, he discovered and studied a "Giant" optical nonlinearity of liquid crystals caused by the photo-transformation of their molecules (the so-called "conformational nonlinearity"). In his condolences for the death of Yuri, Prof. F. Simoni from the Università Politecnica delle Marche (Ancona, Italy) wrote: "This nonlinearity is considered as a milestone for researches that followed and

had many consequences as the ones related to effects of photo-isomerization on the liquid crystalline state carried out by several groups over the world and leading to the exciting research of photomobile materials". The conformational nonlinearity was applied for the optical information processing and hologram recording. After defending his Ph.D. thesis, Yurii developed a method to measure the liquid crystal anchoring energy using the light scattering technique. In 1985–1989, he also studied the effect of the light-induced change of cholesteric pitch under molecular photo-transformations. Later, in 1989–1995, Yurii obtained significant results, which included the development of photo-alignment technology, the control over the liquid crystal anchoring parameters by the photo-alignment technique, as well as the study of a conformational optical nonlinearity in the two-phase region of liquid crystals and surface-driven reorientation effects in liquid crystal cells with a photosensitive aligning layer. In 1995, Yurii got his Doctor of Science degree after defending the thesis entitled "Light-induced impurities in liquid crystals". Yurii's main achievements after 1995 included the light manipulation of nanoparticles in arrays of topological defects, the development of a technique to measure the ultra-large cholesteric pitch, the study of the orientational coupling in two-component suspensions of rod-like nanoparticles, the discovery of the strong thermal optical nonlinearity in liquid-crystalline metal nanocolloids, the development of stable liquid-crystalline ferromagnetic nanocolloids, the observation of a high magnetic sensitivity in aggregated ferromagnetic nanocolloids, researches of the surface-mediated photorefractive in liquid crystals, the development of rollable bistable plastic liquid-crystal displays, the study of diluted liquid-crystalline ferroelectric nanocolloids, and the discovery of a surface bistability in liquid crystals sandwiched between photo-aligning surfaces.

According to the Google Scholar, Yurii's H-factor equals 37, and his citation index exceeds 4700. He published about 200 papers in scientific journals and registered more than 15 US and European patents. He is one of the top 100 most-cited researchers in Ukraine. Yurii was an invited visiting scientist at many universities in Europe, Asia, and North America. He delivered more than 20 invited lectures at the most prestigious international conferences. He was a member of Advisory boards at 10 international conferences, a member of the Editorial board of "Liquid Crystals Today", an assistant editor of "Optical Express", and a member of a number of professional societies: Ukrainian Physical Society, "Commonwealth" International Liquid Crystal Society, Society of Informational Displays (SID), International Society for Optical Engineering (SPIE), and Ukrainian Scientific Club. In recognition of his pioneering achievements in the field of liquid crystals, Yurii Reznikov was awarded the Fredericksz medal by the "Commonwealth" International Liquid Crystal Society in 2010 and the A.F. Prikhot'ko prize by the NASU in 2012. The school of liquid crystals at the IP NASU has flourished due to Yurii's talent of discovery, his pervasive enthusiasm, and his capability as a teacher. Yurii had supervised 15 Ph.D. theses.

Yurii's interests were not confined to physics only. In particular Yurii enjoyed sports such as lawn tennis and badminton. His friends, colleagues, and disciples admired him for his simplicity in social intercourse, thoughtfulness, kindness, humor, and extensive knowledge of science.

We will remember Yurii Oleksandrovykh Reznikov with the great fondness as a prolific scientist always willing to help, open to people, and ready to exchange ideas, a person who was kind and careful to everyone around him.

COLLEAGUES, FRIENDS, DISCIPLES