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About Yuriy

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Yuriy was born October 16, 1953 in Kiev, Ukraine. He passed away on October 8, 2016. He had a bright, fascinating, passionate life. He "built a house, planted a tree and raised a son" as the famous statement says. Yuriy created a group of colleagues and companions with whom he made a significant contribution to physics of liquid crystals. Yuriy is gone, but his legacy remains in the numerous students he mentored in the department of Physics of Crystals at the Institute of Physics of National Academy of Science of Ukraine (NASU).

Yuriy Reznikov was born into a family of scientists. His Mother, Nina Lejpunskaya – an archeologist with a Ph.D. in history, was a senior research fellow at the Institute of Archeology of NASU. Yuriy's step-father, Sergej Kryzhytsky, was also an archeologist, Doctor of Science, and professor. The family spent every summer in archeological expeditions in the ancient-Greek town Ol'via south of Ukraine. When Yuriy was young, he joined these summer expeditions with his friends. His father, Alexander Reznikov, Doctor of History, studied oriental history.

Yuriy's son – Mitya Reznikov, Ph.D. in physics, works in the USA in the Verily Life Sciences division of Google. Yuri's sisters, Tetiana Kryzhytskaya, lives in Kiev, and Viktoriya Reznikova, lives in Germany. His wife from the first marriage, Svitlana, is a scientists in Pukhov Institute for Modelling in Energy Engineering at NASU. His wife from the second marriage, Tetiana, is a patent expert who works in the Institute of Applied Optics of NASU.

Yuriy's grandparents, with whom he lived during his childhood and remained very close, had an enormous influence on his world view. Both grandparents were students of I.V. Obreimov at Leningrad Polytechnic Institute during the 1920s. They worked at the legendary Ukrainian Institute of Physics and Technology (KIPT) in Kharkiv and also at the Institute of Physics in Kyiv. Alexander Leypunski, a famous nuclear physicist, professor, academy member of Academy of Science of Ukrainian Soviet Republic (ASUSR), was the director of the largest institute of physics in the Soviet Union – KIPT in Kharkiv, Institute of Physics in Kyiv and Institute of Physics and Power Engineering in Obninsk. He was the first in the USSR, and second in the world, to split a nucleus. He formulated and realized the concept of a fast neutrons reactor and heat-transfer loop using liquid metals. He was a scientific leader behind the creation of nuclear reactor for marine and space equipment. During his childhood, Yuriy spent his summer breaks with his grandfather in Obninks. For Yuriy's entire life, he remembered their long conversations during hikes in the forests.

Yuriy's grandmother and a good friend, Antonina Prihotko, was the first woman Doctor of Science in physics and math in the Soviet Union in 1946. She was one of the leading experts in the field of physics of nonmetal crystals, professor, and academy member of ASUSR. Antonina Prihotko was the Director of the Institute of Physics of NASU and was the Head of the Department of Physics of Crystals, the position which Yuriy held after her.

Yuriy's former students, who later became his colleagues, work not only in Ukraine but in USA, Germany, and Italy. They are continuing scientific research, have common interests and maintain friendly relationships. Yuriy was a man of strong character and often expressed strong will to achieve his goals, but he was also a romantic person. He truly believed that this world is ruled by kindness, honesty, and love. Yuriy saw only the good in people and always thought well of them. If a person disappointed him, Yuriy never judged or reproached him. Those personal features impressed me, his wife, throughout our life together. Yuriy knew what he wanted from his life and career and always followed this ideal. Undoubtedly, he was a person of high integrity.

He didn't discuss subjects that were not important to him. One story shows a clear example. Once, in his young years during our walk along the river, we were discussing something passionately, and noticed a teenage boy who was in the water, struggling to get out. Without saying a word and not even taking off his backpack, Yuriy got into the water almost fully, caught the scared boy's hand, and got him out. After doing that, he calmly came back to the trail and continued our conversation without saying a word about the incident. We continued our walk as if nothing had happened. It was not a heroic action for him. Yuriy helped a person in need, and there was nothing else to discuss.

He acted the same way with his illnesses. He tried not to notice and talked about them as they didn't matter. He loved his work and that is what mattered a great deal to him. He worked everywhere; at his department at the Institute of Physics, at his desk at home, in his bed when he was sick, during the vacations, during the trips to conferences, during walks… How passionate was Yuriy about his scientific trips! He showed such excitement before giving a talk, meetings, and discussions with colleagues at conferences in different countries. Some places became his favorites. He admired red maples in the fall in Kent, Ohio, the smell of streets in downtown New York, hot summer aromas in Calabria, a favorite cup of espresso in a Rome café, clear air and the crunch of gravel under foot in Luxembourg Gardens in Paris. His work infused his life with this same beauty he found throughout the world.

After his tragic death, Yuriy's graduate student Dasha Lysenko wrote about his romantic character, "…how we, a young generation of graduate students, loved Yuriy. How we listened to each of his words, swallowed all his comments and followed his advice. Not only in science, where he was irreplaceable, but in life overall. As a result,

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0167-7322/

we spent nights repeating experiments, which did not always work. We read scientific papers, watched Woody Allen's movies and read the books he mentioned. We were determined to become a little bit better every day. I remember once Yuriy and his colleague were late to our celebration event at the department. As it turned out, they were arguing about Napoleon's hat, which he had when he entered Paris. I've told all my friends that I was so lucky to join the best group ever …"

A member of Yuriy's family, Ilya Lejpunski, said, "he was a multidimensional person with interests in literature, art, and music. During his childhood, youth and, practically all his life, he was surrounded by very interesting, beautiful, kind and multifaceted educated people, and became one of them himself. Yuriy had a hypertrophied sense of responsibility. I always was amazed how well and warm he spoke to all people. The fact that after the Soviet Union collapse, he managed to kept his scientific group and successfully established collaborations with South Korea, and then with many other world-known centers of liquid-crystal science, was critical in attracting young scientific minds to his group. I think he always was optimistic."

Appendix A. Curriculum vitae

Yuriy Reznikov

Research interests

- Optics and nonlinear optics of liquid crystals
- Liquid crystal nano-colloids; hybrid liquid crystal systems
- Surface phenomena in liquid crystals
- LCD development and application
- Optical recording, processing and storage of information

Education

2001 *Professor* of physics, Institute of Physics, Kyiv, Ukraine.

1994 *Doctor of Science*, Institute of Physics, Kyiv, Ukraine.
Thesis's title "Light Induced Impurities in Liquid Crystals"

1985 *PhD*, Institute of Physics, Kyiv, Ukraine.
Thesis's title "The study of the optical nonlinearity of liquid crystals near their electron absorption bands"

1976 *MSc*, Diploma of Kiev University, Radio-physics Department, Kyiv, Ukraine.

Work history and major scientific results

Since 1995 Chair of the Department of Physics of Crystals, Institute of Physics, Kyiv.

- Electric field-induced orientational order in colloidal suspensions of pigment nanorods (2016)
- Light manipulation of nanoparticles in arrays of topological defects (2015)
- Ultra-large cholesteric pitch was measured (2014)
- Strong orientational coupling in two-component suspensions of rod-like nanoparticles (2012)
- Strong thermal optical nonlinearity of liquid crystal metal nano-colloids was found. (2011)
- Stable liquid crystal ferromagnetic nano-colloids were developed (2010)
- High magnetic sensitivity of aggregated ferromagnetic nanocolloids was observed (2010)
- A surface mediated photorefraction of liquid crystal was found. (2006)
- Rollable bistable plastic LCD was developed and demonstrated. (2004)
- Unique properties of diluted liquid crystal ferroelectric nano-colloids were found. (2003)
- Surface bistability of liquid crystal on a photoalignment surface was found and studied. (1998)
- The effects of electrically-driven light scattering in filled nematic liquid crystals were studied. The effective control of their characteristics by a chemical modification of silica surface was achieved (1995).
- The control of anchoring parameters of liquid crystals with photoalignment technique was realized. (1995)
- The liquid crystal photoalignment technology was developed (1995–2000).

1989–1995 Senior Research Fellow, Institute of Physics, Department of Quantum Electronics, Kyiv.

- The effect of photoalignment of liquid crystals under the action of polarized light was discovered and applied for the alignment of liquid crystals in liquid crystal displays.
- The conformational optical nonlinearity in two-phase region of liquid crystal was found and studied.
- Surface driven reorientation effects in a liquid crystal cell with photosensitive orientant were found and studied.

1985–1989 Research Fellow, Institute of Physics, Department of Quantum Electronics, Kyiv

- The effects of action of liquid crystal anchoring on the parameters of small angle light scattering were found and studied.
- The method of the measurement of anchoring energy with light scattering technique was developed.
- The effect of a light-induced change of a cholesteric pitch under molecule phototransformations was found and studied.
- Light-induced conformational molecular transitions with the efficiency more than unit was found

1979–1984 Postgraduate student under supervision of Prof. M. Soskin, Institute of Physics, Kyiv.

- "Giant" optical nonlinearity of liquid crystals caused by phototransformation of their molecules ("conformational nonlinearity") was found and studied.
- The physical model of conformational nonlinearity was proposed.
- Conformational nonlinearity was applied for optical information processing and hologram recording.

1971–1977 Student of Kyiv State University, Radio-physics Department.

Teaching experience

Supervisor of 15 graduate students

Professional societies

- Ukrainian Physical Society
- International Liquid Crystal Society
- Member of Society of Informational Displays (SID)
- Member of International Society for Optical Engineering (SPIE)
- Ukrainian Scientific club

Selected awards

- F. Prikhot'ko award (National Academy of Sciences of Ukraine), 2012
- Freedericksz medal (Liquid Crystal Society "Commonwealth"), 2010

Selected invited and oral lectures at major conferences

2016 International Liquid Crystals Conference, Kent, USA
2015 Conference for Optics of Liquid Crystals, Sopot, Poland
2014 International Liquid Crystals Conference, Dublin, Ireland

2012 International Liquid Crystals Conference, Mainz, Germany
2012 The Royal Soc. Intern Meeting "New frontiers in anisotropic fluid-particle composites, Buckinghamshire, UK."
2011 International Conference for Optics of Liquid Crystals, Yerevan, Armenia
2010 International Liquid Crystals Conference, Krakow, Poland
2009 International Conference for Optics of Liquid Crystals, Erici, Italy
2008 International Liquid Crystals Conference, Jeju, Korea
2007 International Conference for Optics of Liquid Crystals, Mexico
2006 International Liquid Crystals Conference, Keystone, USA
2006 The 26-th International Display Research Conference, Kent, USA
2006 International Workshop on Liquid Crystals for Photonics, Ghent, Belgium
2006 Annual meeting of Italian Liquid Crystal Society, Castiglioncello, Italy
2005 International Meeting on Informational Displays, Seoul, Korea
2005 International Meeting on Informational Displays, Daegu, Korea
2004 International Liquid Crystals Conference, Slovenia
2003 International Meeting on Informational Displays, Daegu, Korea
2003 International Conference for Optics of Liquid Crystals, France
2001 International Conference for Optics of Liquid Crystals, Italy
2001 ALCOM Symposium on Nanostructured Liquid Crystals, USA
1999 International Conference for Optics of Liquid Crystals, USA
1998 International Liquid Crystals Conference, Strasbourg, France
1997 International Conference RadTech'97, Japan
1997 International Meeting on Photoalignment of Liquid Crystal, Japan
1996 World Conference on the Role of Advanced Materials in Sustainable Development, Korea
1996 ALCOM Symposium on Photoalignment of Liquid Crystals, USA
1995 International Conference for Optics of Liquid Crystals, France
1994 International Liquid Crystals Conference. Budapesht, Hungary
1993 International Conference for Optics of Liquid Crystals, Hungary
1989 International Conference for Optics of Liquid Crystals, Italy

Publications, patents, conference, and editorial activity

h-index: 38, citation index: 5623 (Google Scholar, May 2018)
More than 200 papers in peer-reviewed journals and more than 15 US patents
More than 20 invited lectures at International Conferences
Member of Advisory Committees of 10 International Conferences
Member of Editorial Board of "Liquid Crystals Today"
Associate Editor of "Optics Express"

Appendix B. Memories in photos

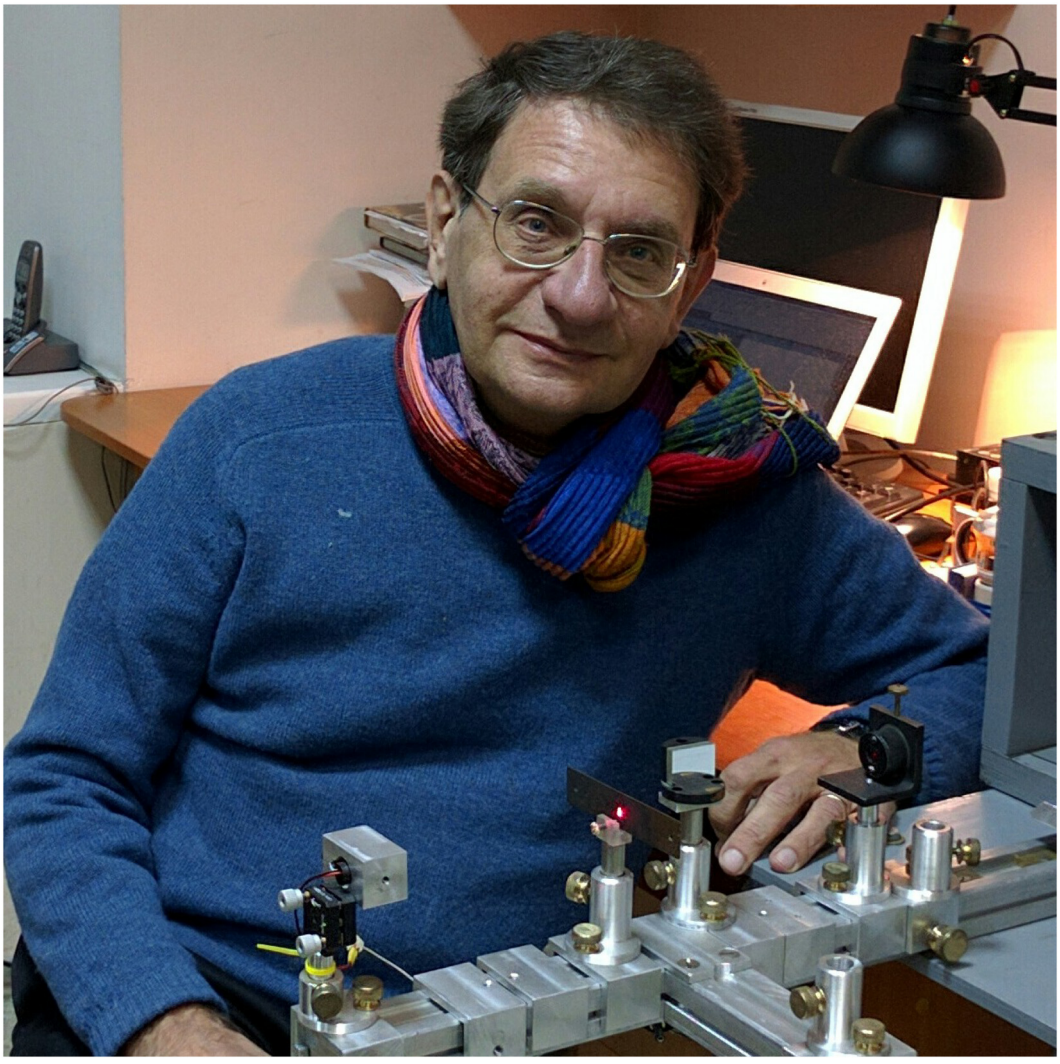

Fig. 1. Professor Yuriy Reznikov at work.

Fig. 2. Giving a conference talk.

Fig. 3. Visiting the lab (Grenoble).

Fig. 4. Sunday walk (Kyiv).

Fig. 5. Visiting Montmartre.

Fig. 6. With wife.

Fig. 7. With wife.

Fig. 8. Professor Yuriy Reznikov and his son Mitya.

Fig. 9. In between the conference talks.

Fig. 10. On vacation.