

Optics in the Ukraine

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Optical science and engineering in the Ukraine were formed in the framework of the former Soviet Union. Investigations were coordinated on both the Union level and the Ukrainian level. The main directions of optical research in the Ukraine were formed during this period, including spectroscopy, nonlinear optics and quantum electronics, holography and correlation optics, optical information processing and recording materials, and optoelectronics. During the last few years, investigations in optical methods in biology and medicine have received an impetus.

The leading centers of optical science and industry in the Ukraine are the following: the Institute of Physics of the National Academy of Sciences (NAS) and the Institute of Semiconductor Physics of the NAS (both in Kiev); universities in Kiev, Chernovtsy, Kharkov, Dnepropetrovsk, Lvov, Odessa, and Uzhgorod; the Kiev Polytechnical Institute; and the scientific and production associations "Arsenal" and "Kvant" (both in Kiev), "Kvartz" in Chernovtsy, "Polaron" in Lvov, and Izyum's plant of optical devices.

A consistent system of optical education in both technical schools and institutions of higher learning has been created in the Ukraine. Optical education is concentrated in universities in Kiev, Chernovtsy, Lvov, Kharkov, and Uzhgorod, as well as in the Kiev Polytechnical Institute, and is oriented toward the needs of the corresponding regions. Besides traditional specializations such as "engineer/optical researcher" and "engineer/optical designer/technologist," training in the specialization "devices of optical and laser medicine" has begun.

The unification of Ukrainian optical engineers in professional societies has occurred during the last few years, as well as the search for a means of intensifying communications with our foreign colleagues. Thus, the Ukrainian Optical Society (UOS) (president Prof. A. I. Khizhnyak) and the SPIE Ukraine Chapter (president Prof. M. Ya. Valakh) were established in 1991 and 1993, respectively. Issues dealing with the acceptance of the UOS into the European Optical Society are in the final stages of agreement. SPIE Ukraine has good connections with other SPIE chapters in Russia, Belarus, and Poland. In a short time, organization of the territorial board of the International Commission for Optics will be finished.

Efforts to organize international conferences in optics in the Ukraine have been successful. For example, an international workshop on "Laser Microtechnology and Laser Diagnostics of Surfaces" was held in Chernovtsy in 1991, and international conferences on "Photorefractive Materials, Effects, and Devices" in Kiev and "Holography, Correlation Optics, and Recording Materials" in Chernovtsy took place in 1993. Proceedings of the SPIE and OSA have been published with contributions of these and some other forums.

Ukrainian optical scientists publish results of their investigations in the FSU's journals, such as *Optics and Spectroscopy*, *Quantum Electronics*, *Reports of Russian Academy of Sciences*, *Physics and Technique of Semiconductors*, *Ukrainian Physical Journal*, and others.

As the guest editor of this special section, I have tried to give the readers of *Optical Engineering* an idea of both research directions and the margin of investigations that have been performed in the Ukraine. Representatives of different scientific schools and areas were called upon to contribute to this special section. This is especially important for us now, when our scientific research is going through hard times, and interested foreign partners could help maintain the current level of investigations and development by Ukrainian optical scientists. In my opinion, I met with understanding in most cases. I'm grateful to the Editor of *Optical Engineering*, Brian J. Thompson, as well as to the Managing Editor, Lorretta Palagi, for the possibility to publish this special section and for their help in my work.



Oleg V. Angelsky received the BS degree from Chernovtsy University and the PhD from the Saratov University, both in physics, in 1979 and 1990, respectively. He joined the Physical Department of Chernovtsy University in 1983, where he currently holds the position of professor of physics. He also heads the Department of Correlation Optics at the same institution. He is the author of more than 140 scientific papers in correlation optics. His current

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