

Preface: XVII International Conference on Luminescence and Laser Physics Devoted to the 50th Anniversary of the First Summer School on Luminescence in Irkutsk

This collection of conference proceedings contains written versions of some of the articles presented at the Seventeenth International Conference on Luminescence and Laser Physics, which was held from July 1 to July 6, 2019 in the city of Irkutsk. The conference provided an opportunity for participants to discuss the latest technological advances and research results in the field of luminescence and laser physics, including applied laser physics, laser luminescence micro- and nanoscopy, manufacturing technologies, radiation and luminescence properties of optical materials.

For more than fifty years, scientific schools, seminars and conferences on luminescence and laser physics have been held in the Irkutsk region. The main organizers of these conferences in recent decades were the Irkutsk Branch of the Institute of Laser Physics of the Siberian Branch of the Russian Academy of Sciences, the Irkutsk State University and the Institute of Geochemistry of the Siberian Branch of the Russian Academy of Sciences. The XVII International Conference on Luminescence and Laser Physics, held in 2019, was dedicated to the fiftieth anniversary of the first Summer School on Luminescence in 1969. The first luminescence school was a significant scientific event with numerous participants from various republics and regions of the Soviet Union. The work of this school began in Irkutsk and then continued for two weeks in a picturesque place at the tourist base "Peschanaya Bay" on the coast of Lake Baikal.

This event took place in Irkutsk due to the fact that by that time a scientific team of researchers working in the field of luminescence and radiation physics of crystalline compounds had formed at Irkutsk State University. This team was already known for its scientific results and publications in Soviet and international scientific journals. Irkutsk State University was founded in 1918. The Faculty of Physics and Mathematics was founded in 1919. Already in the first years of the university's work, experienced professors S.A. Artsybyshhev, V.K. Abold, T.P. Kravets were engaged in teaching physical disciplines. They created and equipped educational and scientific laboratories, carried out scientific research and attracted students to scientific work. In 1926, the talented student Iosif Antonovich Parfianovich, the future long-term dean of the Faculty of Physics, the organizer of the scientific school on luminescence and radiation physics of ionic crystals, finished his studies. In the 60s, the faculty gave lectures, engaged in scientific research and trained highly qualified professors: Andrei Alekseevich Treskov (theoretical physics, electrodynamics and seismology), Yakov Davidovich Raikhbaum (atomic physics and optical spectroscopy), Vladimir Vladimirovich Vasiliev, (mathematical disciplines), Nikolay Fomich Losev (X-ray fluorescence analysis), Iosif Antonovich Parfianovich, (optics, luminescence), Mikhail Stepanovich Metsik (general physics, solid state physics), Vasily Vasilyevich Plastinin (optics, spectral analysis), Valery Mikhailovich Polyakov (radiophysics ionosphere, radio wave propagation). The Department of Radio Electronics was headed by a talented lecturer, Associate Professor Konstantin Nikitich Pogodaev. The qualifications of the scientific and pedagogical personnel who provided training for specialists in physical specialties were quite high. Scientific research in the areas of optics and spectroscopy, radiation physics of solids, radiophysics, physics of the ionosphere and radio wave propagation, theoretical physics were carried out at an advanced level. All this provided a favorable environment for the formation and creative growth of research teams in promising areas of physical sciences at Irkutsk University.



Participants of the LLPh-2019 conference



Taking pictures with the winners and prize-winners of the scientific reports competition and pull-up competitions on the horizontal bar.

For the development of research in the field of luminescence, by order of the Minister of Higher and Secondary Specialized Education of the RSFSR V.N. Stoletov No. 487 of June 27, 1964, the Problem Laboratory of Luminescence and Electroluminescence of Crystalline Substances was established at Irkutsk State University. The dean of the faculty, Professor I.A. Parfianovich, was appointed the scientific supervisor of this laboratory. The creation of this laboratory was an important stage in the organization of luminescence research at ISU. It made it possible to significantly strengthen the experimental base of scientific research. Modern scientific instruments were purchased. The allocated financial resources made it possible to form the optimal staffing of scientific, engineering and technical personnel.

To organize the work of the Summer School and participate in it, the closest associates of Professor I.A. Parfianovich went to the Peschanaya Bay: Evgenia Ivanovna Shuraleva, Evgenia Petrovna Alekseeva, Viktor Krongauz, Emilia Penzina, Valery Pologrudov, Alexander Nepomnyashchikh, Lyudmila Smolskaya, Boris Lobanov, Evgeny Karnaukhov, Evgeny Martynovich, Alexander Sidorovsky, Pavel Yarovoy, Petr Alekseev, Galina Sotserdotova, Lyudmila Makarova, Tamara Baskaeva, Konstantin Ermakovich, Boris Rogalev, Mikhail Tikhanov and others. Mostly they were young people. The conditions at the tourist base were difficult, the electricity was autonomous and supplied with great interruptions, there were other problems that the organizers had to solve. In the course of this organizational work, a group of young leaders was formed, capable of solving emerging technical and organizational problems. Alexander Nepomnyashchikh became such an undoubted leader, recognized among the youth.

The qualifications of the school's lecturers and the main audience were high. The author of this publication remembered the lectures and dialogues in the discussions of many participants. The following participants were especially remembered: Professor Maria Vladimirovna Savostyanova (Leningrad), Corresponding Member of the USSR Academy of Sciences Petr Petrovich Feofilov (Leningrad), Academician of the Academy of Sciences of the Estonian SSR Karl Karlovich Rebane (Tartu), Lyubov Aleksandrovna Rebane (Tartu), Ilmar Karlovich Vitol (Riga), Professor Mark Lvovich Katz (Saratov), Corresponding Member of the Academy of Sciences of the Ukrainian SSR Kirill Borisovich Tolpygo (Donetsk), Alexey Borisovich Lyskovich (Lvov), Shavkat Akhadovich Vakhidov (Tashkent) - future Uzbek academician, Nikanor Grigorievich Politov (Tbilisi), Garegin Oganessian Karapetyan (Leningrad), Vitaly Mikhailovich Belous (Odessa), David Izrailevich Vaysburd (Tomsk), Peeter Maanuevich Saari (Tartu) - future Estonian academician, Marina Nikolaevna Popova (Moscow), Ilya Mikhailovich Obodovsky (Moscow), Yuri, Svetlana Zazubovich (Tartu) and many others.

Of great importance for the communication of young participants of the School with experienced researchers and famous scientists were various events held in their free time from the scientific program. Volleyball competitions, fishing and evening meetings around the fire were very popular. The organizers of these meetings were the Irkutsk guitarists, singers of bard songs Valery Pologrudov and Evgeny Karnaukhov. A brilliant addition to this team was the Muscovite Oksana Kirichenko, the wife of Ilya Obodovsky. She was a bright, sociable young woman with undoubted artistic abilities. She effectively performed popular songs with a guitar. Her repertoire included new songs that had not yet reached Eastern Siberia. The guitar passed from hand to hand, many sitting around the fire sang along. Then the songs of Yuri Kukin, Bulat Okudzhava, Alexander Gorodnitsky, Ada Yakusheva, Yuliy Kim, Yuri Vizbor, Vladimir Vysotsky and many other authors and performers were very popular.

The summer school on luminescence at Lake Baikal in 1969 was of great importance for the subsequent development of research in the field of luminescence and radiation physics in Irkutsk and other regions of the country. Young employees, who made up the bulk of the research team of Professor I.A. Parfianovich, made sure that the directions of their scientific research, the expected and already obtained scientific results are relevant and fully correspond to the general level of research in the country.

Since then, sixteen more schools, seminars and conferences on luminescence and laser physics have been held, including the XVII International Conference on Luminescence and Laser Physics Devoted to the 50th Anniversary of the First Summer School on Luminescence in Irkutsk. This conference was successful, the planned program was fully implemented.

We would like to thank all speakers and listeners for their active participation and for sending their scientific papers for publication. Many thanks to all members of the Conference Organizing Committee for their efforts in organizing the event. We would like to express our gratitude to the Chairman of the Scientific Council of the Russian Academy of Sciences for Optics and Laser Physics, Academician of the RAS Sergei N. Bagaev and the Chairman of the Scientific Council on Luminescence, Professor Alexei G. Vitukhnovsky for coordinating the work of the conference. We express our special gratitude to the rector of the Irkutsk State University, Professor Alexander F. Schmidt and the director of the Institute of Geochemistry named after V.I. Vinogradov SB RAS Alexander B. Perepelov for financial support of the conference.

We also express our sincere gratitude to Mr. Filipp A. Stepanov for his help in proofreading the submitted documents and preparing this collection of works.

We are looking forward to the XVIII International Conference on Luminescence and Laser Physics, which will be held on July 5-10, 2021 in Irkutsk.

E. F. Martynovich