



## **FOTONICA PLUS CO**


**Health and Innovation: Our Path in 2024!**

**<http://www.fotonikaplus.com.ua/>**

## CERTIFICATION AND QUALITY STANDARDS

2024 has marked another milestone in the development of our enterprise.

 **February 20, 2024** – a supervisory online audit was conducted by representatives of the SE "Ukrmetrteststandart" to verify compliance with the DSTU EN ISO 13485:2018 standard.

 **February 22, 2024** – successful completion of a supervisory online audit by Quality Austria, confirming compliance with the ISO 13485:2016 standard.

**Outcome:** positive feedback from the auditors validated our production's compliance with international standards. This enables us to confidently operate both in domestic and international markets.

We continuously strive for the highest quality standards to provide our customers with modern and reliable laser equipment.



## CERTIFICATION AND QUALITY STANDARDS



- The fractional CO2 laser "LIKA-fracxel+" has successfully passed another certification in accordance with the Technical Regulations for Medical Devices, approved by CMU Resolution No. 753. This confirms its compliance with established quality and safety standards for medical equipment.



- The surgical diode laser "LIKA-surgeon+" has successfully passed another certification in accordance with the Technical Regulations for Medical Devices, approved by CMU Resolution No. 753. This confirms its compliance with the established quality and safety standards for medical equipment.

## STABILITY AND DEVELOPMENT DURING THE WAR



➤ **Production and Service of Laser Equipment and Fiber Optic Instruments by Fotonica Plus Co**

Despite the challenges caused by the war, **Fotonica Plus Co** continues to operate, delivering high-quality laser equipment and fiber optic instruments for medical and veterinary applications. We relentlessly improve our models, adapting them to modern treatment and rehabilitation needs.

**Model Enhancement:** Ongoing efforts to improve the efficiency, precision, and reliability of our equipment.

**Production Processes:** Implementing advanced technologies to ensure high quality at every stage of production—from design to assembly and testing.

**Service Support:** We provide a full range of services, including setup, repair, and technical support for our equipment.

**Our Mission:** To equip doctors and veterinarians with effective tools to assist their patients, even in the most challenging times.

## DEVELOPMENTS AND INNOVATIONS

- We have developed the "**LIKA SCAN**" device for high-intensity laser therapy. The "**LIKA SCAN**" is designed for performing high-intensity laser therapy using an automated laser beam scanning method to treat patients with orthopedic-traumatological conditions, including those with gunshot wounds affecting soft tissues, neurological conditions, and in sports medicine.
- We have also developed a **fluorescent visualization system** for near-infrared range diagnostics and cancer treatment – the **ICG NIR Portable Visualizer**. The **ICG NIR Portable Visualizer** allows the evaluation of the distribution and intensity of the ICG-induced signal at various depths of biological tissue during cancer diagnostics and treatment.
- Additionally, we have completed the development of the **LIKA LD** device with removable laser emitters for use in medical-biological research and educational programs in laser and optoelectronic technologies and bioengineering.





## PUBLIC ACTIVITY



- **Support for Ukrainian Sports at the International Level**  
Medical equipment manufactured by **Fotonica Plus Co** has been used for treating sports injuries and restoring athletes' physical conditions during the Olympic Games since the **27th Olympic Games** in **Sydney, 2000**. The **XXXIII Summer Olympic Games** were no exception: for the treatment of sports injuries and recovery of the Ukrainian national team athletes, we provided the **"LIKA-surgeon+"** laser device for laser thermotherapy.



- On **August 30, 2024**, a solemn award ceremony was held at the Ministry of Youth and Sports of Ukraine. Deputy Minister **Oleksiy Nikitenko** presented Honorary Certificates to the **team of Fotonica Plus Co** and its director **Volodymyr Kholin** for their long-term fruitful cooperation and contribution to the preparation for the **XXXIII Summer Olympic Games** in Paris. We thank them for the high recognition of our work and look forward to continued collaboration!

## *PUBLIC ACTIVITY*

### ➤ **Charity and Volunteering**

One of the key areas of our company's activity is the development and implementation of laser equipment for high-intensity laser therapy, which is used for the rehabilitation and recovery of patients with orthopedic-traumatological conditions, particularly those recovering from injuries, gunshot wounds, and polytrauma of varying severity.

As part of this initiative, **Fotonica Plus Co** runs a program providing temporary free use of "**LIKA-surgeon+**" and "**LIKA-surgeon**" laser diode devices for the treatment and rehabilitation of injured military personnel and civilians.

In 2024, we donated 5 devices (a total of 17 devices) to hospitals, military medical facilities, and sanatoriums that are focused on the recovery of both military personnel and civilians.



## *PARTICIPATION IN KEY EVENTS OF THE MEDICAL COMMUNITY*



➤ **PRO BEAUTY EXPO 2024.** Demonstration of cosmetic laser equipment for beauty and rejuvenation procedures.

➤ **InterCHARM-Ukraine 2024.** Presentation of cosmetic laser equipment for non-invasive dermatological and aesthetic procedures. Masterclasses were held for aesthetic medicine professionals on using lasers for skin correction, pigmentation treatment, and rejuvenation.

➤ **PUBLIC HEALTH 2024.** Presentation of laser equipment for treatment and rehabilitation. A series of demonstration sessions were conducted, attracting attention from representatives of medical institutions. The prospects of applying laser technologies in the rehabilitation of patients with chronic and post-traumatic conditions were discussed.



➤ **IVC 2024 (International Veterinary Conference).** Presentation of equipment for veterinary laser therapy. The exhibition served as a platform for establishing new partnerships with clinics and distributors of cosmetic equipment.



## PARTICIPATION IN KEY EVENTS OF THE MEDICAL COMMUNITY



## PARTNERSHIP WITH SCIENTIFIC INSTITUTIONS AND PARTICIPATION IN PROJECTS

- On **December 16, 2024**, according to Act No. 1-61 regarding the implementation of the scientific research and development project under the grant agreement No. 61/0135 dated **March 1, 2024**, the joint project with **Vinnitsia National Technical University (VNTU)** was completed. **Fotonica Plus Co**, together with **VNTU**, the **Institute of Physics of the NAS of Ukraine**, and the **Academy of Laser Medicine**, worked on the project titled "Development of a Laser - Photonic Treatment-Diagnostic Complex for the Medical Rehabilitation of Patients with Polytraumas of Various Degrees of Severity". **VNTU** received a grant from the **National Research Fund of Ukraine** to implement the project, which involves innovative medical rehabilitation using laser technologies.
- We continue our collaboration with the **State Institution "Institute of Geochemistry of the Environment of the National Academy of Sciences of Ukraine"**. We are finalizing a new project aimed at developing an **intelligent fluorescent probe for spectrofluorometric analysis of biological agents**.



## *PARTNERSHIP WITH SCIENTIFIC INSTITUTIONS AND PARTICIPATION IN PROJECTS*



- We continue our collaboration with **Cherkasy State Technological University**. Several meetings have taken place at **Fotonica Plus Co** with our scientific partners: **Doctor of Technical Sciences, Professor of the Department of Technology and Equipment of Machine Engineering Productions, Georgy Kanashevich**, and his students. During these meetings, we summarized the results of our collaboration and outlined the plans for further joint work.



- We also continue our cooperation with the **National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute"**. At **Fotonica Plus Co**, several meetings were held with our scientific partners: **Associate Professor Mykola Tereshchenko** from Igor Sikorsky Kyiv Polytechnic Institute and his students. The meetings served to summarize the outcomes of our collaboration and establish plans for future joint projects.



## PARTNERSHIP WITH SCIENTIFIC INSTITUTIONS AND PARTICIPATION IN PROJECTS

- **Cooperation with Igor Sikorsky Kyiv Polytechnic Institute and Cherkasy State Technological University: Student Internship Program.** As part of our partnership with **Igor Sikorsky Kyiv Polytechnic Institute (KPI)** and **Cherkasy State Technological University**, **Fotonica Plus Co** has created an opportunity for students from related specialties to undergo their production internships at our enterprise. This program provides students with valuable experience in the development and production of laser equipment, including:

**Physical Principles:** Studying the principles of laser operation, understanding the interaction between laser radiation and materials, and optimizing emission parameters for different tasks.

**Design:** Modeling laser beams and analyzing their characteristics, integrating optical, electronic, and mechanical components into systems, and developing software for controlling laser devices.

**Production:** Assembling and calibrating laser equipment, testing functionality at various stages, and certifying finished devices according to standards.

**Experiments:** Testing laser systems in real conditions, analyzing laser radiation characteristics, and researching new materials to improve laser technologies.

Such experience enables students to gain a deeper understanding of engineering processes, develop practical skills, and prepare for real-world work in the field of laser technologies.



## SCIENTIFIC PUBLICATIONS AND RESEARCH

In 2024, **Fotonica Plus Co** actively participated in scientific conferences and forums, presenting several abstracts of scientific works. A number of scientific papers were also published in domestic technical journals and international publications indexed in **SCOPUS**. These publications have become a significant outcome of the company's research activities and its collaboration with academic institutions. Below is a list of publications that were released during the year:

1. **Fluorescent Visualization System in the Near Infrared Range for the Diagnosis and Treatment of Benign and Malignant Tumors and Wound Processes:** Utility Model Application No. U 2024 04980; Applicants: Horobeiko M. B., Lurin I. A., Dinetz A. V., Negoduyko V. V., Pavlov V. S., Ivliev Y. O., Komarova O. S. – Submission Date: 21.10.2024, <https://sis.nipo.gov.ua/uk/search/detail/1824214/>.
2. **PHYSICAL MODELING OF OUTPUT CASCADES AND TERMINAL DEVICES OF LASER MEDICAL EQUIPMENT WITH A RECTANGULAR CROSS-SECTION OF THE OUTPUT OPTICAL BEAM.** Olha Komarova, Volodymyr Kholin, Yaroslav Ivliev, Anna Reva, Vitalii Lukasevych, Sergii Pavlov, Valerii Voytsehovich, Yury Zabulonov, Volodymyr Rozumenko, Andrii Savchenko, Dmytro Shynkarenko, Cezary Kaczmarek, Ainur Kozbakova. Photonics Applications in Astronomy, Communications, Industry, and High Energy Physics Experiments 2024. Vol. 13400. SPIE, 2024, <https://www.spiedigitallibrary.org/conference-proceedings-of-spie/13400/134000D/Physical-modeling-of-output-cascades-and-terminal-devices-of-laser/10.1117/12.3054916.full>.
3. **Laser and Health: Monograph.** А. V. Кипенський, L. Ya. Васильєва-Лінецька, Vuutysyk Valdemar [et al.]; Ed. by А. V. Кипенський; National Technical University "Kharkiv Polytechnic Institute". – Kharkiv: Miskaya Druckarnia, 2024. – 387 p.: ill. – (Physical and Biomedical Electronics), <https://repository.kpi.kharkov.ua/items/d6581393-a4e7-456c-af18-f15060c14c25>.



## SCIENTIFIC PUBLICATIONS AND RESEARCH

4. **Fluorescent Visualization System in the Near Infrared Range for the Diagnosis and Treatment of Cancer – Portable Visualizer ICG NIR.** Maksym Horobeyko, Volodymyr Kholin, Yaroslav Ivliev, Yurii Zabulonov, Serhii Pavlov, Olha Komarova. III All-Ukrainian Scientific-Practical Conference with International Participation "Medical-Technical Cooperation for Victory: Current Challenges of Medical, Biological Physics and Informatics," April 5-6, 2024, Vinnytsia. – Pp. 19-21.
5. **Experimental Studies of the Effect of Phonons on the Homogeneity of Output Optical Beams in Short Optical Fibers from Multi-Mode Optical Fibers.** Kholin V. V., Voytsehovich V. S., Komarova O. S., Reva A. V., Chepurna E. M., Pavlov S. V., Tereshchenko M. F. Proceedings of the XXIII International Scientific and Technical Conference "Instrumentation: Status and Prospects," PBFS, KPI named after Igor Sikorsky, May 14-15, 2024, Kyiv, Ukraine. – Pp. 182-187, <https://ela.kpi.ua/handle/123456789/68032> .
6. **Device for High-Intensity Laser Therapy "LIKA SCAN."** Yaroslav Ivliev, Anastasia Korunets, Olha Komarova, Andrii Kaplia, Volodymyr Kholin, Serhii Pavlov, Liliia Katjukova, Yurii Zabulonov. Modern Technologies in Biomedical Engineering: Proceedings of the III International Scientific-Technical Conference, May 8-10, 2024, National University "Odesa Polytechnic" / Ed. by I. V. Prokopovych, N. V. Manicheva. – Vinnytsia: VNTU, 2024. – Pp. 90-92, <http://dspace.opu.ua/jspui/handle/123456789/14420> .
7. **Construction and Investigation of the Peltier Element Model.** Kovalenko O. O., Hordiienko V. I., Vasylichenko V. Yu., Komarova O. S., Ivliev Y. O. *Abstracts of the VII International Scientific-Practical Conference "Information Technologies in Education, Science and Technology" (ITEST-2024)*, (Cherkasy, May 23-24, 2024) (2024): 238, [https://lib.iitta.gov.ua/id/eprint/743734/1/Conference-Proceedings-ITEST-2024\\_25\\_06.pdf#page=238](https://lib.iitta.gov.ua/id/eprint/743734/1/Conference-Proceedings-ITEST-2024_25_06.pdf#page=238) .

***WE ARE PLEASED TO COOPERATE AND BUILD MUTUALLY  
BENEFICIAL PARTNERSHIPS IN ANY AREA OF WORK!***

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