

CONFERENCES AND SYMPOSIA

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Photonics and optics
Scientific session of the Reporting Meeting of the Physical Sciences Division of the Russian Academy of Sciences, May 22, 2023

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A scientific session of the Reporting Meeting of the Physical Sciences Division of the Russian Academy of Sciences (RAS) entitled "Photonics and Optics" was held in the Red Hall of the main building of the RAS (Moscow, Leninskii prospekt 32A) on May 22, 2023.

The meeting agenda announced on the website www.gpad.ac.ru of the Physical Sciences Division (PSD) of the RAS contained the following reports:

(1) **Fedyanin A A** (M V Lomonosov Moscow State University (MSU), Moscow) "Dielectric nanophotonics and optical metamaterials";

(2) **Semerikov I A** (Optics of Complex Quantum Systems Laboratory of the P N Lebedev Physical Institute (LPI), RAS, Moscow) "Quantum calculations on ultracold ions using ququarts";

(3) **Korenskii M Yu, Veselovskii I A** (A M Prokhorov General Physics Institute, RAS, Moscow) "Use of fluorescent lidar to study atmospheric aerosol";

(4) **Sokolovskii G S** (Laboratory of Integrated Optics on Heterostructures, A F Ioffe Physical-Technical Institute (PTI), St. Petersburg) "Quantum cascade lasers in the mid-IR range with record output power";

(5) **Khaidukov E V** (Laboratory of Laser Biomedicine, Federal Scientific Research Center, Crystallography and Photonics, RAS, Moscow) "Crystalline nanomaterials with anti-Stokes photoluminescence for solving nanomedicine problems";

(6) **Mironov S Yu** (Laboratory of Spatiotemporal Profiling of Femtosecond Laser Radiation, A V Gaponov-Grekhov Institute of Applied Physics (IAP), RAS, Nizhny Novgorod) "Nonlinear compression of petawatt laser pulses";

(7) **Babin S A** (Institute of Automation and Electrometry, Siberian Branch, RAS, Novosibirsk) "Spatial-spectral evolution of light in structured multimode/multicore fibers: nonlinear effects and their applications."

Review [1], partially similar in contents to the first report, was published in the December 2023 issue of the *Phys. Usp.* (*UFN*) journal.

Published further in this issue of *Phys. Usp.* (*UFN*) are papers written on the basis of report 4 [2] and report 6 [3].

Uspekhi Fizicheskikh Nauk **194** (1) 97 (2024)
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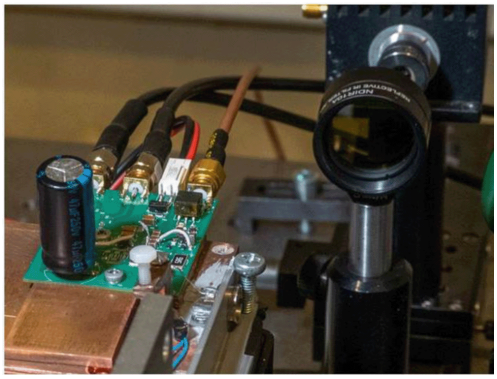
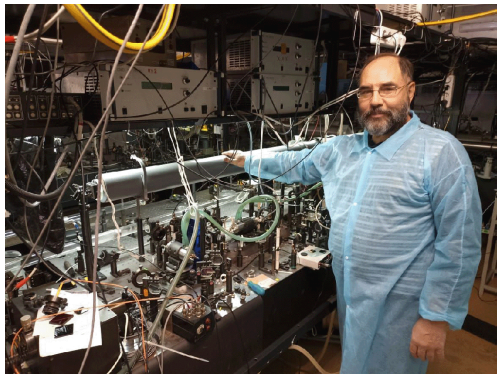


Short-pulse pumping unit for a quantum cascade laser (QCL) in the Laboratory of Integrated Optics on Heterostructures of the Ioffe Physico-Technical Institute. The use of strained heteropairs in the active region of the QCL and short-pulse pumping provides a maximum output power of more than 21 W, which is a world record for a QCL for a spectral range of 8 μm with one working strip (see Ref. [2]). (Photo by S N Losev.)



Subpetawatt PEARL laser (see Ref. [3]) at the Institute of Applied Physics, RAS. Responsible for dispersion devices at the complex (stretching, compressor) is Senior Researcher I V Yakovlev. (Photo by S Yu Mironov.)

References

1. Musorin A I et al. *Phys. Usp.* **66** 1209 (2023); *Usp. Fiz. Nauk* **193** 1284 (2023)
2. Dyudelev V V et al. *Phys. Usp.* **67** 96 (2024); *Usp. Fiz. Nauk* **194** 98 (2024)
3. Mironov S Yu, Khazanov E A *Phys. Usp.* **67** 104 (2024); *Usp. Fiz. Nauk* **194** 106 (2024)