

Basov Readings

DOI: <https://doi.org/10.3367/UFNe.2022.11.039660>

A solemn meeting (scientific session) of the Physical Sciences Division (PSD) and the Nanotechnology Division of the Russian Academy of Sciences (RAS), as well as the Scientific Councils of the P N Lebedev Physical Institute (LPI) RAS and the A M Prokhorov General Physics Institute (GPI) RAS, On the 100th Anniversary of the Birth of N G Basov: the ‘BASOV READINGS,’ was held in the Assembly Hall of the P N Lebedev Physical Institute on November 28, 2022.

Opening remarks were made by:

Kolachevsky N N (LPI), **Kveder V V** (PSD RAS), **Garnov S V** (GPI RAS)

The scientific program of the joint meeting, published on the website of the PSD RAS (www.gpad.ac.ru), included the following reports and speeches:

Session 1. Chair: Academician G A Mesyats

1. **Zubarev I G** (LPI, National Research Nuclear University (NRNU) Moscow Engineering Physics Institute (MEPhI), Moscow). *N G Basov: a pioneer and organizer of laser research in the USSR.*

2. **Kolachevsky N N** (LPI, Moscow). *From the first masers to optical frequency standards.*

3. **Pikhtin N A** (A F Ioffe Physico-Technical Institute (PTI) RAS, St. Petersburg). *High-power near-IR laser diodes: history, state of the art, and development prospects.*

4. **Konov V I** (Natural Science Research Center, GPI RAS, Moscow). *Modern micro- and nanotechnologies of laser processing of materials.*

Session 2. Chair: Academician I A Shcherbakov

5. **Gus'kov S Yu** (LPI, Moscow). *N G Basov: laser thermonuclear fusion and high energy density physics.*

6. **Mikaelyan G T** (LASSARD LLC, NPP Inzhekt LLC, Moscow). *One- and two-D diode laser arrays. Technology of production and application.*

7. **Starodubtsev M V** (FRC Institute of Applied Physics RAS, Nizhny Novgorod). *Research in the field of plasma physics and particle acceleration with the PEARL petawatt laser.*

8. **Evtikhiev N N** (STA IRE Polyus, NRNU MEPhI, Moscow). *On the application of laser technologies in industry and medicine.*

9. **El'tsov K N** (GPI RAS). *Surface physics for heterogeneous catalysis, quantum computing, and two-dimensional materials.*

10. **Zvorykin V D** (LPI, Moscow). *N G Basov's role in work on excimer laser research: a half-century history from the launch of the first Xe₂ laser at the LPI to modern laser systems.*

For the 100th anniversary of N G Basov's birth, scientific and biographical materials were published in the journal

Uspekhi Fizicheskikh Nauk (UFN) (see Refs [1–3]), as was a special issue of the journal *Quantum Electronics (QE)* [4]. Papers written on the basis of reports 1, 3, and 5 were published in *QE* (see [5–7]), and those written on the basis of reports 2 and 10 were published in *UFN* (see [8, 9]). A review written on the basis of the report 7 is published below in this issue of *UFN* (see [10]).

References

1. “Nikolai Gennadievich Basov (on the 100th anniversary of his birth)” *Phys. Usp.* **65** 1209–1210 (2022); “Nikolai Gennadievich Basov (k 100-letiyu so dnya rozhdeniya)” *Usp. Fiz. Nauk* **192** 1298–1298 (2022)
2. Kolachevsky N N, Savinov S Yu “Nikolai Gennadievich Basov (an insight into the life story of an outstanding physicist)” *Phys. Usp.* **65** 1212–1216 (2022); “Nikolai Gennadievich Basov (neskol'ko shtrikhov k biografii vydayushchegosya fizika)” *Usp. Fiz. Nauk* **192** 1300–1304 (2022)
3. Khabarova K Yu, Zalivako I V, Kolachevsky N N “Methods of quantum logic in ion frequency standards, quantum computers, and modern spectroscopy” *Phys. Usp.* **65** 1217–1223 (2022); “Metody kvantovoi logiki v ionnykh standartakh chastoty, kvantovykh vychislitelnykh i sovremennoi spektroskopii” *Usp. Fiz. Nauk* **192** 1305–1312 (2022)
4. “Spetsial'nyi vypusk, posvyashchennyi 100-letiyu so dnya rozhdeniya N G Basova” (“Special issue dedicated to the 100th anniversary of the birth of N.G. Basov”) *Kvantovaya Elektron.* **52** (12) 1064–1165 (2022)
5. Zubarev I G “N G Basov — pioner i organizator lazernykh issledovaniy v SSSR” (“N G Basov as a pioneer and organizer of laser research in the USSR”) *Kvantovaya Elektron.* **52** (12) 1064–1069 (2022)
6. Slipchenko S O, Veselov D A, Zolotarev V V, Lyutetskii A V, Podoskin A A, Sokolova Z N, Shamakhov V V, Shashkin I S, Kop'ev P S, Pikhtin N A “High-Power Laser Diodes Based on InGaAs(P)/Al(In)GaAs(P)/GaAs Heterostructures with Low Internal Optical Loss” *Bull. Lebedev Phys. Inst.* **50** (Suppl 4) S494–S512 (2023); “Moshchnye lazernye diody na osnove InGaAs(P)/Al(In)GaAs(P)/GaAs-geterostruktur s nizkimi vnutrennimi opticheskimi poteryami” *Kvantovaya Elektron.* **52** (12) 1152 (2022)
7. Gus'kov S Yu “Laser Thermonuclear Fusion and High Energy Density Physics” *Bull. Lebedev Phys. Inst.* **50** (Suppl. 4) S395–S404 (2023); “Lazernyi termoyadernyi sintez i fizika vysokikh plotnostei energii” *Kvantovaya Elektron.* **52** (12) 1070 (2022)
8. Belyaev A A, Voronov V G, Demidov N A, Khabarova K Yu, Kolachevsky N N “The legacy of N G Basov: from the first masers to optical frequency standards” *Phys. Usp.* **66** (10) 1026 (2023); “Nasledie N G Basova: ot pervykh mazerov k opticheskim standartam chastoty” *Usp. Fiz. Nauk* **193** (10) 1091 (2023)
9. Zvorykin V D “The role of N G Basov in the development of excimer lasers: a half-century history of the first launch of the Xe₂ laser at Lebedev Physical Institute to modern laser systems” *Phys. Usp.* **66** (10) 1037 (2023); “Rol' N G Basova v sozdanii eksimernykh lazerov: poluvekovaya istoriya ot zapuska pervogo Xe₂-lazera v FIAnE do sovremennykh lazernykh sistem” *Usp. Fiz. Nauk* **193** (10) 1103 (2023)
10. Soloviev A A et al. “Research in plasma physics and particle acceleration using the PEARL petawatt laser” *Phys. Usp.* **67** (3) 293 (2024); “Issledovaniya v oblasti fiziki plazmy i uskoreniya chastits na petavattnom lazere PEARL” *Usp. Fiz. Nauk* **194** (3) 313 (2024)