

# Nikolai Gennadievich Basov (on the 100th anniversary of his birth)

(Joint scientific session of the Physical Sciences Division, the Nanotechnology Division of the Russian Academy of Sciences (RAS), and the Scientific Councils of the P N Lebedev Physical Institute of the RAS (LPI) and the A M Prokhorov General Physics Institute of the RAS Academy of Sciences (LPI, November 28, 2022))

DOI: <https://doi.org/10.3367/UFNe.2022.11.039345>

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](http://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 Xe<sub>2</sub> 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 are published below in this issue of *UFN* (see [8, 9]).

## 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, posvyashchenniy 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); “Lazerniy termoyaderniy sintez i fizika vysokikh plotnostei energii” *Kvantovaya Elektron.* **52** (12) 1070 (2022)
8. Belyaev A A, Voronzov 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 perykh 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 Xe<sub>2</sub> laser at Lebedev Physical Institute to modern laser systems” *Phys. Usp.* **66** (10) 1027 (2023); “Rol' N G Basova v sozdaniy eksimernykh lazerov: poluvekovaya istoriya ot zapuska pervogo Xe<sub>2</sub>-lazeru v FIANE do sovremennykh lazernykh sistem” *Usp. Fiz. Nauk* **193** (10) 1103 (2023)