Сведения об официальных оппонентах
по диссертации *Дьяконова Ивана Викторовича*.
«Интегральные оптические структуры для задач линейно-оптических квантовых вычислений»

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1. Kuzin, A., Chernyshev, V., Kovalyuk, V., An, P., Golikov, A., Ozhegov, R., Gorin, D., Gippius, N., Goltsman, G., "Hybrid nanophotonic-microfluidic sensor for highly sensitive liquid and gas analyses", (2022) Optics Letters, 47 (9), pp. 2358-2361, DOI: 10.1364/OL.457309.

2. Lazarenko, P., Kovalyuk, V., An, P., Prokhodtsov, A., Golikov, A., Sherchenkov, A., Kozyukhin, S., Fradkin, I., Chulkova, G., Goltsman, G., "Size effect of the Ge2Sb2Te5cell atop the silicon nitride O-ring resonator on the attenuation coefficient", (2021) APL Materials, 9 (12), DOI: 10.1063/5.0066387.

3. Gayduchenko, I., Xu, S.G., Alymov, G., Moskotin, M., Tretyakov, I., Taniguchi, T., Watanabe, K., Goltsman, G., Geim, A.K., Fedorov, G., Svintsov, D., Bandurin, D.A., "Tunnel field-effect transistors for sensitive terahertz detection", (2021) Nature Communications, 12 (1), DOI: 10.1038/s41467-020-20721-z.

4. Shcherbatenko, M., Elezov, M., Manova, N., Sedykh, K., Korneev, A., Korneeva, Y., Dryazgov, M., Simonov, N., Feimov, A., Goltsman, G., Sych, D., "Single-pixel camera with a large-area microstrip superconducting single photon detector on a multimode fiber", (2021) Applied Physics Letters, 118 (18), DOI: 10.1063/5.0046049.

5. Morozov, P., Lukina, M., Shirmanova, M., Divochiy, A., Dudenkova, V., Gol'tsman, G.N., Becker, W., Shcheslavskiy, V.I., "Singlet oxygen phosphorescence imaging by superconducting single-photon detector and time-correlated single-photon counting", (2021) Optics Letters, 46 (6), pp. 1217-1220, DOI: 10.1364/OL.415229.

6. Zvagelsky, R.D., Chubich, D.A., Kolymagin, D.A., Korostylev, E.V., Kovalyuk, V.V., Prokhodtsov, A.I., Tarasov, A.V., Goltsman, G.N., Vitukhnovsky,

A.G., "Three-dimensional polymer wire bonds on a chip: morphology and functionality", (2020) Journal of Physics D: Applied Physics, 53 (35), DOI: 10.1088/1361-6463/ab8e7f.

7. Ferrari, S., Kovalyuk, V., Vetter, A., Lee, C., Rockstuhl, C., Semenov, A., Gol'tsman, G., Pernice, W., "Analysis of the detection response of waveguide-integrated superconducting nanowire single-photon detectors at high count rate", (2019) Applied Physics Letters, 115 (10), DOI: 10.1063/1.5113652.

8. Tretyakov, I., Shurakov, A., Perepelitsa, A., Kaurova, N., Svyatodukh, S., Zilberley, T., Ryabchun, S., Smirnov, M., Ovchinnikov, O., Goltsman, G., "Room Temperature Silicon Detector for IR Range Coated with Ag2S Quantum Dots", (2019) Physica Status Solidi - Rapid Research Letters, 13 (9), DOI: 10.1002/pssr.201900187.

9. Korneeva, Y.P., Vodolazov, D.Y., Semenov, A.V., Florya, I.N., Simonov, N., Baeva, E., Korneev, A.A., Goltsman, G.N., Klapwijk, T.M., "Optical Single-Photon Detection in Micrometer-Scale NbN Bridges", (2018) Physical Review Applied, 9 (6), DOI: 10.1103/PhysRevApplied.9.064037.

10. Gayduchenko, I.A., Fedorov, G.E., Moskotin, M.V., Yagodkin, D.I., Seliverstov, S.V., Goltsman, G.N., Yu Kuntsevich, A., Rybin, M.G., Obraztsova, E.D., Leiman, V.G., Shur, M.S., Otsuji, T., Ryzhii, V.I., "Manifestation of plasmonic response in the detection of sub-terahertz radiation by graphene-based devices", (2018) Nanotechnology, 29 (24), DOI: 10.1088/1361-6528/aab7a5.

11. Bandurin, D.A., Gayduchenko, I., Cao, Y., Moskotin, M., Principi, A., Grigorieva, I.V., Goltsman, G., Fedorov, G., Svintsov, D., "Dual origin of room temperature sub-terahertz photoresponse in graphene field effect transistors", (2018) Applied Physics Letters, 112 (14), DOI: 10.1063/1.5018151.

12. Bandurin, D.A., Svintsov, D., Gayduchenko, I., Xu, S.G., Principi, A., Moskotin, M., Tretyakov, I., Yagodkin, D., Zhukov, S., Taniguchi, T., Watanabe, K., Grigorieva, I.V., Polini, M., Goltsman, G.N., Geim, A.K., Fedorov, G., "Resonant terahertz detection using graphene plasmons", (2018) Nature Communications, 9 (1), DOI: 10.1038/s41467-018-07848-w.

13. Kovalyuk, V., Ferrari, S., Kahl, O., Semenov, A., Shcherbatenko, M., Lobanov, Y., Ozhegov, R., Korneev, A., Kaurova, N., Voronov, B., Pernice, W., Gol'tsman, G., "On-chip coherent detection with quantum limited sensitivity", (2017) Scientific Reports, 7 (1), DOI: 10.1038/s41598-017-05142-1.

14. Kahl, O., Ferrari, S., Kovalyuk, V., Vetter, A., Lewes-Malandrakis, G., Nebel, C., Korneev, A., Goltsman, G., Pernice, W., "Spectrally multiplexed single-photon detection with hybrid superconducting nanophotonic circuits", (2017) Optica, 4 (5), pp. 557-562, DOI: 10.1364/OPTICA.4.000557.

15. Ferrari, S., Kovalyuk, V., Hartmann, W., Vetter, A., Kahl, O., Lee, C., Korneev, A., Rockstuhl, C., Gol'tsman, G., Pernice, W., "Hot-spot relaxation time current dependence in niobium nitride waveguide-integrated superconducting

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1. Voloshin A. S. et al. Dynamics of soliton self-injection locking in optical microresonators //Nature communications. – 2021. – Т. 12. – №. 1. – С. 1-10.
2. Danilin A. et al. Magneto-optical effects in a high-Q whispering-gallery-mode resonator with a large Verdet constant //Optics Letters. – 2021. – Т. 46. – №. 10. – С. 2509-2512.
3. Shitikov A.E. et al. Self-Injection Locking of a Gain-Switched Laser Diode //Phys. Rev. Applied. – 2021. – Т. 15. – С. 064066.
4. Lobanov V. E., Kondratiev N. M., Bilenko I. A. Thermally induced generation of platicons in optical microresonators //Optics Letters. – 2021. – Т. 46. – №. 10. – С. 2380-2383.
5. Shitikov A. E. et al. Microresonator and Laser Parameter Definition via SelfInjection Locking //Physical Review Applied. – 2020. – Т. 14. – №. 6. – С. 064047.
6. Galiev R. R. et al. Optimization of laser stabilization via self-injection locking to a whispering-gallery-mode microresonator //Physical Review Applied. – 2020. – Т. 14. – №. 1. – С. 014036.
7. Lobanov V. E. et al. Two-color flat-top solitonic pulses in χ (2) optical microresonators via second-harmonic generation //Physical Review A. – 2020. – Т. 101. – №. 1. – С. 013831.
8. Lobanov V. E. et al. Generation and dynamics of solitonic pulses due to pump amplitude modulation at normal group-velocity dispersion //Physical Review A. – 2019. – Т. 100. – №. 1. – С. 013807.

9. Shitikov A. E. et al. Billion Q-factor in silicon WGM resonators //Optica. – 2018. – Т. 5. – №. 12. – С. 1525-1528.
10. Lobanov V. E. et al. Dynamics of platicons due to third-order dispersion //The European Physical Journal D. – 2017. – Т. 71. – №. 7. – С. 1-5.

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1. A. Okhrimchuk, A. Pryamikov, V. Likhov, D. Dobrovolsky, A. Shestakov, G. Orlova, A. Lipatiev, A. Zhiltsova, and A. Romanov, "Inscription of a Waveguide in YAG:Nd Crystal With a Cladding Composed by Crystalline Hollow Channels," Opt. Mater. Express 12, 1609–1616 (2022).
2. M. Ponarina, A. Okhrimchuk, T. Dolmatov, and M. Rybin, "Intracavity losses effect on mode-locking in a waveguide laser with graphene saturable absorber," Laser Phys. Lett. 19, 01501 (2022).
3. A. G. Okhrimchuk, V. V. Likhov, S. A. Vasiliev, and A. D. Pryamikov, "Helical Bragg gratings: experimental verification of light orbital angular momentum conversion," J. Light. Technol. (2021).
4. M. Ponarina, A. Okhrimchuk, G. Alagashev, G. Orlova, T. Dolmatov, M. Rybin, E. Obraztsova, V. Bukin, and P. Obraztsov, "Wavelength-switchable 9.5 GHz graphene mode-locked waveguide laser," Appl. Phys. Express 14, 72001 (2021).
5. A. G. Okhrimchuk, A. D. Pryamikov, K. N. Boldyrev, L. N. Butvina, and E. Sorokin, "Collective phenomena in Dy-doped silver halides in the near- and mid-IR," Opt. Mater. Express 10, 2834 (2020).
6. S. S. Fedotov, A. S. Lipatiev, M. Y. Presniakov, G. Y. Shakhgildyan, A. G. Okhrimchuk, S. V. Lotarev, and V. N. Sigaev, "Laser-induced cavities with a controllable shape in nanoporous glass," Opt. Lett. 45, 5424–5427 (2020).
7. A. G. Okhrimchuk, A. D. Pryamikov, A. V. Gladyshev, G. K. Alagashev, M. P. Smayev, V. V. Likhov, V. V. Dorofeev, S. E. Motorin, and Y. P. Yatsenko, "Direct Laser Written Waveguide in Tellurite Glass for Supercontinuum Generation in 2 μ m Spectral Range," J. Light. Technol. 38, 1492–1500 (2020).

8. S. S. Fedotov, A. G. Okhrimchuk, A. S. Lipatiev, A. A. Stepko, K. I. Piyanzina, G. Y. Shakhgildyan, M. Y. Presniakov, I. S. Glebov, S. V. Lotarev, and V. N. Sigaev, "3-Bit Writing of Information in Nanoporous Glass By a Single Sub-Microsecond Burst of Femtosecond Pulses," Opt. Lett. 43, 851 (2018).
9. M. V Ponarina, A. G. Okhrimchuk, M. G. Rybin, M. P. Smayev, E. D. Obraztsova, A. V Smirnov, I. V Zhluktova, V. A. Kamynin, T. V Dolmatov, V. V Bukin, and P. A. Obraztsov, "Dual-wavelength generation of picosecond pulses with 9.8 GHz repetition rate in Nd:YAG waveguide laser with graphene," Quantum Electron. 49, 365–370 (2019).
10. S. S. Fedotov, A. G. Okhrimchuk, A. S. Lipatiev, A. A. Stepko, K. I. Piyanzina, G. Y. U. Shakhgildyan, M. Y. U. Presniakov, I. S. Glebov, S. V. Lotarev, and V. N. Sigaev, "3-bit writing of information in nanoporous glass by a single sub-microsecond burst of femtosecond pulses," Opt. Lett. 43, 851–854 (2018).
11. A. G. Okhrimchuk, A. S. Lipatiev, E. V Zharikov, G. O. Orlova, V. M. Mezentsev, and P. G. K. Kazansky, "Phase transformation under direct laser writing in a YAG single crystal," Opt. Mater. Express 7, 3408–3421 (2017).
12. V. V Kononenko, E. V Zavedeev, A. G. Okhrimchuk, and V. I. Konov, "Excitation of an electronic subsystem of YAG crystal with femtosecond laser pulses," Laser Phys. Lett. 14, 066002 (2017).
13. Y. P. Yatsenko, E. N. Pleteneva, A. G. Okhrimchuk, A. V. Gladyshev, A. F. Kosolapov, A. N. Kolyadin, and I. A. Bufetov, "Multiband supercontinuum generation in an air-core revolver fibre," Quantum Electron. 47, 553–560 (2017).
14. A. S. Lipatiev, T. O. Lipateva, S. V Lotarev, A. G. Okhrimchuk, A. S. Larkin, M. Y. Presnyakov, and V. N. Sigaev, "Direct Laser Writing of LaBGeO5 Crystal-in-Glass Waveguide Enabling Frequency Conversion," Cryst. Growth Des. 17, 4670–4675 (2017).
15. A. Okhrimchuk, S. Fedotov, I. Glebov, V. Sigaev, and P. Kazansky, "Single shot laser writing with sub-nanosecond and nanosecond bursts of femtosecond pulses," Sci. Rep. 7, 16563 (2017).

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