**Sergey Makarov**

*ITMO University*

*Date of birth: 25 April 1988*

*Place of birth: Vladivostok, Russia*

***e-mail: s.makarov@metalab.ifmo.ru***

**Education:**

**2005-2008:** Far East Federal University (Vladivostok);

**2008-2011**: National Research Nuclear University “MEPhI”, Moscow, Russia

Specialty: Solid state physics and photonics.

**2011 – 2014** PhD in P.N. Lebedev Physics Institute (LPI) of the Russian Academy of Sciences (Moscow).

**2018** **–** Habilitation (Doctor of Sciences) in ITMO University (St Petersburg, Russia).

### ****Job experience:****

### **04.2008 –** 12.2008: assistant in laboratory of NRNU “MEPhI”

### 05.2013 – 09.2013 and 08.2014: visiting researcher in Vienna University of Technologies.

09.2011 – 01.2015**:** Research Assistantin P.N. Lebedev Physics Institute (LPI) of the Russian Academy of Sciences (Moscow, Russia).

### Since 01.2015 in ITMO University (St Petersburg, Russia).

### Since 03.2017 Head of Laboratory of Hybrid Nanophotonics and Optoelectronics in ITMO University (St Petersburg, Russia).

### 05.2019-06.2019: **Invited Visiting Professor at University of Lorraine in France (Nancy, France)**

**Research areas**:

Nanophotonics, halide perovskites, nanolasers, laser-matter interaction, ultrafast and nonlinear phenomena at nanoscale.

### Visiting scholar:

### Australian National University (Australia) group of Prof. Yuri Kivshar

### Texas University at Dallas (USA) group of Prof. Anvar Zakhidov

### Laser Zentrum Hannover (Germany) group of Prof. Boris Chichkov

### City University of New York (USA) group of Prof. Alexander Khanikaev

**Honors and Awards:**

**2019 - Medal of Russian Academy of Sciences for Young Researchers,**

**2019 -** President’s of Russian Federation Grant,

**2018 - Winner of competition for Invited Professor Position at University of Lorraine in France (2018);**

**2016 - Alferov’s Foundation Medal for Young Researchers,**

**2016 - Saint-Petersburg Government Award in the field of technology,**

**2015 -** President’s of Russian Federation Scholarship,

**2014 - "The ITMO University Fellowships Program",**

**2014 and 2012 -** N.G. Basov’s name awards,

2012 - President’s of Russian Federation Scholarship for Studying Abroad,

2012 - Award related to N.G. Basov 90-years anniversary,

2011 - **SPIE Scholarship in Optics and Photonics,**

2011 - Winner of Scholarship of Foundation for Promotion of Small companies in Science and Technology,

2007 - **Gubernatorial Scholarship for excellent studying**.

**Grants:**

Received as a PI or co-PI six Russian research grants with a total budget around 5 million USD (for the period 2015-2022).

**Teaching:**

Lectures within the course “Experimental methods in nanophotonics”.

**Mentoring:**

**PhD thesis advisor of 4 students.**

Ekaterina Tiguntseva, PhD 2017-2020

Georgy Zograf, PhD 2017-2020

Alexander Berestennikov, PhD 2017-2021

Alexandra Furasova, PhD 2017-2021

**Mentored** >5 Master students.

**Invited University Seminars, Colloquia and Lectures:**

**Stanford University** (USA), Geballe Laboratory for Advanced Materials – May 2019

**Denmark Technical University** (Denmark), Department of Photonics Engineering – May 2019

**Texas University at Dallas** (USA), NanoTech Institute – May 2019

**Johannes Kepler University Linz** (Austria), Institute of Physical Chemistry – March 2019

**Sejong University** (Korea), Department of Physics and Astronomy – August 2018

**RIKEN** (Tokyo, Japan), Theoretical Quantum Physics Laboratory - August 2018

**City University of Hong Kong** (SAR Hong Kong), Centre for Functional Photonics – December 2017

**Chalmers University of Technology** (Sweden), Department of Physics – November 2017

**ETH Zurich** (Switzerland), Optical Nanomaterial Group – April 2017

**EPFL** (Switzerland), BioEngineering Department – April 2017

**University of Virginia** (USA), Department of Materials Science and Engineering – April 2016

**City University of New York** (USA), Physics Department – April 2016

**Texas University at Austin** (USA), Department of Electrical and Computer Engineering – March 2016

**INVITED CONFERENCE TALKS:**

Invited – FLAMN-2019 (St Petersburg, Russia, 2019, <https://flamn.ifmo.ru/> )

Invited – POEM2019 (London, UK, April 2019) <https://www.poem2019.com/speakers>

Invited – PIERS (Focus Session: “Nonlinear Optics at the Nanoscale”, Rome, Italy, June 2019) <http://piers.org/piers2019Rome/session.php?session_id=S101>

Invited – Photonics West (Section: “Colloidal Nanoparticles for Biomedical Applications XIV”, San Francisco, 2019) <https://spie.org/PWB/conferencedetails/colloidal-nanoparticles-biomedical-applications>

Invited – Nanomaterials Trends - Hybrid nanocomposites and nanogranular materials (Brescia, Italy, 2018, <https://brescia.unicatt.it/eventi/evt-nanomaterialstrends-hybrid-nanocomposites-and-nanogranular-materials> )

Invited – METANANO’2018 (Sochi, Russia, 2018, <https://metanano.ifmo.ru/2018/> )

**Plenary** – ICNMP-2018 (Santiago de Cuba, Cuba, 2018, <http://interconf.pro> )

Invited – STRANN-2016 (St Petersburg, Russia, 2016, <http://www.strann.org/> )

Invited – FLAMN-2016 (St Petersburg, Russia, 2016, <http://lpc.ifmo.ru/flamn16/> )

Invited – PIERS-2013 (Stockholm, Sweden, 2013, <http://www.piers.org/piers2013Stockholm/>)

Invited – PIERS-2012 (Kuala Lumpur, Malaysia, 2012, <http://www.piers.org/piers2012kualalumpur/>)

**Reviewer:**

**Advanced Materials, Nano Letters, ACS Nano, Advanced Functional Materials, Small, Nanoscale, Scientific Reports, Optics Express, Applied Surface Science, etc.**

**Referee for grant agency Russian Science Foundation (since 2017)** <http://rscf.ru/en>

**Conferences organizer:**

Member of Program Committee of International Conference “PLMCN-20” (Moscow, Russia 2019) <https://events.mifp.eu/PLMCN-2019/>

**Chair** of Program Committee of International Conference “METANANO’17” (Vladivostok, Russia 2017) <https://metanano.ifmo.ru/2017/>

Member of Program Committee of International Conference “METANANO’19” (Sochi, Russia 2018) <https://metanano.ifmo.ru/2019/>

**Languages:** English – fluent, Russian – native

**Major publications**

**(find more at** <https://scholar.google.com/citations?user=9sE8LrMAAAAJ&hl=en> **):**

**\*impact factors for 2017**

1. D.A. Zuev, S.V. Makarov, V.A. Milichko, S.V. Starikov, I.S. Mukhin, I.A. Morozov, I. I Shishkin, A. E Krasnok, P. A Belov «Fabrication of Hybrid Nanostructures via Nanoscale Laser‐Induced Reshaping for Advanced Light Manipulation» **Advanced Materials** 28(16), 3087–3093 (2016) <http://onlinelibrary.wiley.com/doi/10.1002/adma.201505346/abstract> [Impact Factor=**18.37\***]
2. V. A. Milichko, S.V. Makarov, A. V. Yulin, A.V. Vinogradov, A.A. Krasilin, E. Ushakova, and P.A. Belov, “van der Waals Metal‐Organic Framework as an Excitonic Material for Advanced Photonics”. **Advanced Materials** 29(12), 1606034 (2017) <http://onlinelibrary.wiley.com/doi/10.1002/adma.201606034/full> [IF= **18.37**]
3. A. Zhizhchenko, S. Syubaev, A. Berestennikov, A.V. Yulin, A. Porfirev, A. Pushkarev, I. Shishkin, K. Golokhvast, A.A. Bogdanov, A.A. Zakhidov, A.A. Kuchmizhak, Y.S. Kivshar, S.V. Makarov “Single-Mode Lasing from Imprinted Halide-Perovskite Microdisks” **ACS Nano** 10.1021/acsnano.8b08948 (2019) <https://pubs.acs.org/doi/10.1021/acsnano.8b08948> [IF=**13.709**]
4. S. V. Makarov, S. I. Kudryashov, I. Mukhin, A. Mozharov, V. Milichko, A. Krasnok and P. A. Belov, «Tuning of magnetic optical response in a dielectric nanoparticle by ultrafast photoexcitation of dense electron-hole plasma», **Nano Letters** 15, 6187–6192 (2015). <http://dx.doi.org/10.1021/acs.nanolett.5b02534> [IF = **12.08**]
5. SV Makarov, MI Petrov, U Zywietz, V Milichko, D Zuev, N Lopanitsyna, et al. “Efficient Second-Harmonic Generation in Nanocrystalline Silicon Nanoparticles” **Nano Letters** 17(5), 3047-3053 (2017) <http://pubs.acs.org/doi/abs/10.1021/acs.nanolett.7b00392> [IF = **12.08**]
6. G.P. Zograf, M.I. Petrov, D.A. Zuev, P.A. Dmitriev, V.A. Milichko, S.V. Makarov, P.A. Belov “Resonant Nonplasmonic Nanoparticles for Efficient Temperature-Feedback Optical Heating” **Nano Letters** 17 (5), 2945-2952 (2017) <http://pubs.acs.org/doi/abs/10.1021/acs.nanolett.7b00183> [IF = **12.08**]
7. SV Makarov, IS Sinev, VA Milichko, et.al “Nanoscale generation of white light for ultrabroadband nanospectroscopy” **Nano Letters** 18 (1), 535-539 (2018). [IF = **12.08**]

<https://pubs.acs.org/doi/abs/10.1021/acs.nanolett.7b04542>

1. E Tiguntseva, GP Zograf, FE Komissarenko, DA Zuev, AA Zakhidov, S.V.Makarov, Y.Kivshar “Light-Emitting Halide Perovskite Nanoantennas” **Nano Letters** 18 (2), pp 1185–1190 (2018). [IF = **12.08**]

<https://pubs.acs.org/doi/10.1021/acs.nanolett.7b04727>

1. EY Tiguntseva, DG Baranov, AP Pushkarev, B Munkhbat, F Komissarenko, M. Franckevicius, A.A Zakhidov, T. Shegai, Yu.S Kivshar, S.V. Makarov “Tunable Hybrid Fano Resonances in Halide Perovskite Nanoparticles” **Nano Letters** 18 (9), 5522-5529 (2018). [IF = **12.08**] <https://pubs.acs.org/doi/abs/10.1021/acs.nanolett.8b01912>
2. Jongpil Ye, Dmitry Zuev and Sergey Makarov «Dewetting mechanisms and their exploitation for the large-scale fabrication of advanced nanophotonic systems» **International Materials Reviews** (2018) [IF = **12.703**] <https://doi.org/10.1080/09506608.2018.1543832>
3. S.V. Makarov, A.S. Zalogina, M. Tajik, D.A. Zuev, M.V. Rybin, A.A. Kuchmizhak, S. Juodkazis, and Y. Kivshar “Light-Induced Tuning and Reconfiguration of Nanophotonic Structures” **Laser & Photonics Reviews** 11(5), 1700108(2017) doi: 10.1002/lpor.201700108 [IF= **8.51**]
4. S. V. Makarov, V. A. Milichko, I. S. Mukhin, et al. "Controllable Femtosecond Laser-Induced Dewetting for Plasmonic Applications" **Laser & Photonics Reviews** 10(1), 91-99 (2016) <http://onlinelibrary.wiley.com/doi/10.1002/lpor.201500119/full> [IF= **8.51**]
5. D. G. Baranov, S. V. Makarov, A. E. Krasnok, P. A. Belov, and A. Alù, “Tuning of near‐and far‐field properties of all‐dielectric dimer nanoantennas via ultrafast electron‐hole plasma photoexcitation” **Laser & Photonics Reviews**, 10(6), 1009-1015 (2016). <http://onlinelibrary.wiley.com/doi/10.1002/lpor.201600164/full> [IF= **8.51**]
6. I.S. Sinev, A.A. Bogdanov, F.E. Komissarenko, K.S. Frizyuk, M.I. Petrov, I.S. Mukhin, S.V. Makarov, A.K. Samusev, A.V. Lavrinenko, and I.V. Iorsh “Chirality driven by magnetic dipole response for demultiplexing of surface waves” **Laser & Photonics Reviews,** 11(5) 1700168(2017) <http://onlinelibrary.wiley.com/doi/10.1002/lpor.201700168/full> [IF= **8.51**]
7. VA Milichko, DA Zuev, DG Baranov, GP Zograf, K Volodina, AA Krasilin , S.V. Makarov, P.A. Belov, “Metal‐Dielectric Nanocavity for Real‐Time Tracing Molecular Events with Temperature Feedback” **Laser & Photonics Reviews**, 12(1), 1700227 (2018) <https://onlinelibrary.wiley.com/doi/full/10.1002/lpor.201700227> [IF= **8.51**]
8. Sun, Y., Sinev, I., Zalogina, A., Ageev, E., Shamkhi, H., Komissarenko, F., Morozov, I., Lepeshov, S., Milichko, V., Makarov, S. and Mukhin, I., “Reconfigurable Near‐field Enhancement with Hybrid Metal‐Dielectric Oligomers” **Laser & Photonics Reviews**, p.1800274 (2019) <https://onlinelibrary.wiley.com/doi/abs/10.1002/lpor.201800274> [IF= **8.51**]
9. X Wang, A Kuchmizhak, D Storozhenko, SV Makarov, S Juodkazis “Single-step laser plasmonic coloration of metal films” **ACS Appl. Mater. Interfaces**, 10(1), 1422-1427 (2018) <https://pubs.acs.org/doi/abs/10.1021/acsami.7b16339> [IF= **8.5**]
10. Pushkarev A., Korolev V., Markina D., Komissarenko F., Naujokaitis A., Drabavičius A., Pakštas V., Franckevičius M., Khubezhov S., Sannikov D., Zasedatelev A., P. Lagoudakis, A.A. Zakhidov, and S.V. Makarov “A Few-Minute Synthesis of CsPbBr3 Nanolasers with a High Quality Factor by Spraying at Ambient Conditions” **ACS Applied Materials & Interfaces** 11 (1), pp 1040–1048 (2019) <https://pubs.acs.org/doi/abs/10.1021/acsami.8b17396> [IF= **8.5**]
11. A Rudenko, K Ladutenko, S Makarov, TE Itina «Photogenerated Free Carrier‐Induced Symmetry Breaking in Spherical Silicon Nanoparticle» **Advanced Optical Materials** 6 (7), 1701153 (2018) <https://onlinelibrary.wiley.com/doi/abs/10.1002/adom.201701153> [IF= **7.43**]
12. S Makarov, A Furasova, E Tiguntseva, A Hemmetter, A Berestennikov, et al. “Halide‐Perovskite Resonant Nanophotonics” **Advanced Optical Materials**, 1800784 (2018) <https://onlinelibrary.wiley.com/doi/full/10.1002/adom.201800784> [IF= **7.43**]
13. A Furasova, E Calabró, E Lamanna, E. Tiguntseva, Ushakova E., Ubyivovk E., Mikhailovskii V., Zakhidov A., Makarov S., A and Di Carlo “Resonant Silicon Nanoparticles for Enhanced Light Harvesting in Halide Perovskite Solar Cells” **Advanced Optical Materials** 6 (21), 1800576 (2018) <https://onlinelibrary.wiley.com/doi/full/10.1002/adom.201800576> [IF= **7.43**]
14. E.Mitsai, M.Aouassa, L.Hassayoun, D.Storozhenko, Mironenko, S.Bratskaya, S. Juodkazis, S.Makarov, A.Kuchmizhak “SiGe nanoantennas with tailored Raman response and light-to-heat conversion for advanced sensing applications” **Nanoscale**, (2019) [IF= **7.85**]
15. S. V. Makarov, A. N. Tsypkin, T. A. Voytova, V. A. Milichko, I. S. Mukhin, A. V. Yulin, and P.A. Belov, “Self-adjusted all-dielectric metasurfaces for deep ultraviolet femtosecond pulse generation”. **Nanoscale**, 8(41), 17809-17814 (2016).<http://pubs.rsc.org/en/content/articlelanding/2016/nr/c6nr04860a#!divAbstract> [IF= **7.85**].
16. P.A. Dmitriev, D.G. Baranov, V.A. Milichko, S.V. Makarov, et al. «Resonant Raman scattering from silicon nanoparticles enhanced by magnetic response» **Nanoscale**, 8(18), 9721-9726 (2016). <http://pubs.rsc.org/en/content/articlelanding/2016/nr/c5nr07965a> [IF= **7.85**].
17. P. A. Dmitriev, S. V. Makarov, V. A. Milichko, et al. "Laser fabrication of crystalline silicon nanoresonators from an amorphous film for low-loss all-dielectric nanophotonics" **Nanoscale** 8, 5043-5048 (2016) <http://pubs.rsc.org/en/content/articlelanding/2015/nr/c5nr06742a> [IF= **7.85**].
18. A. Kuchmizhak, O. Vitrik, Yu. Kulchin,D. Storozhenko, A. Mayor, A. Mirochnik, S. Makarov, et al. «Laser printing of resonant plasmonic nanovoids» **Nanoscale** 8, 12352-12361 (2016) <http://pubs.rsc.org/en/content/articlelanding/2016/nr/c6nr01317a/> [IF= **7.85**].
19. E. Tiguntseva, A. Chebykin, A. Ishteev, R. Haroldson, B. Balachandran, E. Ushakova, F. Komissarenko, H. Wang, V. Milichko, A. Tsypkin, D. Zuev, W. Hu, S. Makarov and A. Zakhidov “Si on perovskite metasurface” **Nanoscale** doi: 10.1039/C7NR01631J (2017) <http://pubs.rsc.org/en/content/articlehtml/2017/nr/c7nr01631j> [IF= **7.85**].
20. S Makarov, L Kolotova, S Starikov, U Zywietz, B Chichkov «Resonant Silicon Nanoparticles with Controllable Crystalline State and Nonlinear Optical Response» **Nanoscale** 10, 11403-11409 (2018) <https://pubs.rsc.org/en/content/articlehtml/2018/nr/c8nr02057d> [IF= **7.85**].
21. AS Zalogina, RS Savelev, EV Ushakova, GP Zograf, FE Komissarenko, A Milichko, SV Makarov, DA Zuev, IV Shadrivov “Purcell effect in active diamond nanoantennas” **Nanoscale** 10 (18), 8721-8727 (2018) <https://pubs.rsc.org/en/content/articlehtml/2018/nr/c7nr07953b> [IF= **7.85**]
22. D. Baranov, S. Makarov, V. Milichko, S. Kudryashov, A. Krasnok, P. Belov «Nonlinear Transient Dynamics of Photoexcited Resonant Silicon Nanostructures» **ACS Photonics**, 2016 <http://pubs.acs.org/doi/abs/10.1021/acsphotonics.6b00358> [IF= **6.756**]
23. S. V. Makarov, V. Milichko, E.V. Ushakova, M. Omelyanovich, A. Cerdan Pasaran, R. Haroldson, B. Balachandran, H. Wang, W. Hu, Yu. S. Kivshar, A.A. Zakhidov **ACS Photonics** (2017) <http://pubs.acs.org/doi/abs/10.1021/acsphotonics.6b00940> [IF= **6.756**]
24. Zyuzin MV, Baranov DG, Escudero A, Chakraborty I, Tsypkin A, Ushakova EV, Kraus F, Parak WJ, Makarov SV. “Photoluminescence quenching of dye molecules near a resonant silicon nanoparticle.” **Scientific Reports** 8(1), 6107 (2018) <https://www.nature.com/articles/s41598-018-24492-y> [IF = **4.122**]
25. Kuchmizhak A, Gurbatov S, Vitrik O, Kulchin Y, Milichko V, Makarov S, Kudryashov S. Ion-beam assisted laser fabrication of sensing plasmonic nanostructures. **Scientific reports** 6, 19410 (2016) <https://www.nature.com/articles/srep19410> [IF = **4.122**].
26. E.V. Golosov, A.A. Ionin, Yu. R. Kolobov, S.I. Kudryashov, A.E. Ligachev, S.V. Makarov, et al. «Near-threshold femtosecond laser fabrication of one-dimensional subwavelength nanogratings on a graphite surface» **Physical Review B** 83(11), 115426 (2011) <http://journals.aps.org/prb/abstract/10.1103/PhysRevB.83.115426> [ IF=**3.736** ]
27. A.A. Kuchmizhak, A.A. Ionin, S.I. Kudryashov, S.V. Makarov, A.A. Rudenko «Flash-imprinting of intense femtosecond surface plasmons for advanced nanoantenna fabrication», Optics Letters 40 (8), 1687-1690 (2015). <https://www.osapublishing.org/ol/abstract.cfm?uri=ol-40-8-1687>,[IF= **3.292**]
28. S.I. Kudryashov, S.V. Makarov, A.A. Ionin, et al. “Dynamic polarization flip in nanoripples on photoexcited Ti surface near its surface plasmon resonance” Optics Lett. 40 (21), 4967-4970 (2015) (<https://www.osapublishing.org/ol/fulltext.cfm?uri=ol-40-21-4967>) [IF=**3.292**]
29. A. Krasnok, S. Glybovski, M. Petrov, S. Makarov, et al., «Demonstration of the enhanced Purcell factor in all-dielectric structures». Applied Physics Letters, 108(21), 211105 (2016). <http://scitation.aip.org/content/aip/journal/apl/108/21/10.1063/1.4952740> [IF=**3.142**]
30. M Aouassa, E Mitsai, S Syubaev, D Pavlov, A Zhizhchenko, I Jadli, G Zograf, S Makarov, A. Kuchmizhak. “Temperature-feedback direct laser reshaping of silicon nanostructures” **Applied Physics Letters** 111 (24), 243103 (2017) [IF=**3.142**]
31. C.S.R. Nathala, A.Ajami, A.A. Ionin, S.I. Kudryashov, S.V. Makarov, T. Ganz, A. Assion, and W. Husinsky “Experimental study of fs-laser induced sub-100-nm periodic surface structures on titanium”, Optics express 23 (5), 5915-5929 (2015). <https://www.osapublishing.org/oe/abstract.cfm?uri=oe-23-5-5915>, [ IF=**3.488** ]
32. Y.N. Kulchin, O.B. Vitrik , A.A. Kuchmizhak , A.V. Nepomnyashchii , A.G. Savchuk , A.A. Ionin , S.I. Kudryashov , S.V. Makarov “Through nanohole formation in thin metallic film by single nanosecond laser pulses using optical dielectric apertureless probe”, Optics Letters 38, 1452 (2013). <http://iopscience.iop.org/1612-202X>, [ IF=**3.292** ]
33. T Apostolova, BD Obreshkov, AA Ionin, SI Kudryashov, SV Makarov, et al. “Ultrafast photoionization and excitation of surface-plasmon-polaritons on diamond surfaces” Applied Surface Science (2017) doi.org/10.1016/j.apsusc.2017.07.263 [**IF = 3.39**]
34. A.A. Ionin, S.I. Kudryashov, S.V. Makarov, N.N. Mel’nik, P.N. Saltuganov et al. «Ultrafast femtosecond laser ablation of graphite», Laser Physics Letters 12 (7), 075301 (2015). <http://iopscience.iop.org/article/10.1088/1612-2011/12/7/075301/meta>, **[IF=3.39]**
35. A. Kuchmizhak, S. Gurbatov, A. Nepomniaschiy, A. Mayor, Yu. Kulchin, O. Vitrik, S. Makarov, S. Kudryashov, A. Ionin “Hydrodynamic instabilities of thin Au/Pd alloy film induced by tightly focused femtosecond laser pulses”, Applied Surface Science 337, 224-229 (2015). <http://www.sciencedirect.com/science/article/pii/S0169433215004134>, [**IF=3.39**]
36. A.A. Ionin, S.I. Kudryashov, S.V. Makarov, et al. “Femtosecond laser fabrication of sub-diffraction nanoripples on wet Al surface in multi-filamentation regime: High optical harmonics effects”, Applied Surface Science 292, 678–681 (2014). <http://www.sciencedirect.com/science/article/pii/S0169433213023027> [ **IF=3.39** ]
37. A.A. Ionin,S.I. Kudryashov, S.V. Makarov , A.A. Rudenko, L.V. Seleznev,D.V. Sinitsyn, E.V. Golosov, Y.R. Kolobov, A.E. Ligachev “Beam spatial profile effect on femtosecond laser surface structuring of titanium in scanning regime”, Applied Surface Science 284, 634 (2013). <http://www.sciencedirect.com/science/article/pii/S0169433213014554> [**IF=3.39**]
38. KA Ivanov, DA Gozhev, SP Rodichkina, SV Makarov, SS Makarov, et al. “Nanostructured plasmas for enhanced gamma emission at relativistic laser interaction with solids” Applied Physics B 123 (10), 252 (2017) <https://link.springer.com/article/10.1007/s00340-017-6826-4> [IF= 1.696]
39. SV Starikov, NY Lopanitsyna, DE Smirnova, SV Makarov Computational Materials Science “Atomistic simulation of Si-Au melt crystallization with novel interatomic potential” 142, 303-311 (2018) [IF=2.5]
40. A.A. Ionin S.I. Kudryashov, A.A. Rudenko, L.V. Seleznev, D.V. Sinitsyn, and S.V. Makarov, Nonlinear optical feedback for nano-and micropatterning of silicon surface under femtosecond laser irradiation. Optical Materials Express, 7(8), pp.2793-2807 (2017). <https://www.osapublishing.org/ome/abstract.cfm?uri=ome-7-8-2793> [IF = 2.591]
41. A.A. Ionin, S.I. Kudryashov, S.V. Makarov, et al. "Electron emission and ultrafast low-fluence plasma formation during single-shot femtosecond laser surface ablation of various materials" JETP Letters 101 (5), 308-312 (2015) <http://www.jetpletters.ac.ru/ps/2073/article_31193.shtml> [ IF= 1.359 ]
42. DA Zayarny, AA Ionin, IV Kiseleva, SI Kudryashov, SV Makarov et al. "Surface enhanced infrared absorption of a dye on a metallic diffraction grating" JETP Letters 100(5) 295-298 (2014) <http://www.jetpletters.ac.ru/ps/2053/article_30904.shtml> [ IF= 1.359 ]
43. P.A. Danilov, A.A. Ionin, S.I. Kudryashov, S.V. Makarov, N.N. Mel’nik et al. «Femtosecond laser ablation of single-wall carbon nanotube-based material», Laser Physics Letters 11 (10), 106101 (2014). <http://iopscience.iop.org/article/10.1088/1612-2011/11/10/106101/meta>, [ IF=2.458 ]
44. K.A. Ivanov, A.V. Brantov, S.I. Kudryashov, S.V. Makarov, et al. “Enhanced relativistic laser–plasma coupling utilizing laser-induced micromodified target”, Laser Physics Letters 12 (4), 046005 (2015). <http://iopscience.iop.org/article/10.1088/1612-2011/12/4/046005/meta>, [ IF=2.458 ]
45. A.A. Ionin, S.I. Kudryashov, S.V. Makarov, et al. “Nonlinear optical dynamics during femtosecond laser nanostructuring of a silicon surface”, Laser Physics Letters 12, 025902 (2015). <http://iopscience.iop.org/article/10.1088/1612-2011/12/2/025902/meta>, [IF=2.458]
46. Yu.R. Kolobov , E.V. Golosov, T.N. Vershinina, M.V. Zhidkov, A.A. Ionin, S.I. Kudryashov, S.V. Makarov, L.V. Seleznev, D.V. Sinitsyn “Structural transformation and residual stresses in surface layers of α+β titanium alloys nanotextured by femtosecond laser pulses”, Applied Physics A 119 (1), 241-247 (2015). [http://link.springer.com/article/10.1007%2Fs00339-014-8954-6](http://link.springer.com/article/10.1007/s00339-014-8954-6) [ IF=1.704]
47. P.N. Saltuganov, A.A. Ionin, S.I. Kudryashov, A.A. Rukhadze, A.I. Gavrilov, S.V. Makarov, A. A. Rudenko, D.A. Zayarny “Fabrication of Superhydrophobic Coating on Stainless Steel Surface by Femtosecond Laser Texturing and Chemisorption of an Hydrophobic Agent”, Journal of Russian Laser Research 36 (1), 81-85 (2015). [http://link.springer.com/article/10.1007%2Fs10946-015-9480-5](http://link.springer.com/article/10.1007/s10946-015-9480-5), [ IF=0.546 ]
48. S.G. Bezhanov, A.A. Ionin, A.P. Kanavin, S.I. Kudryashov, S.V. Makarov, et al. “Reflection of a probe pulse and thermal emission of electrons produced by an aluminum film heated by a femtosecond laser pulse”, Journal of Experimental and Theoretical Physics 120 (6), 937-945 (2015). [http://link.springer.com/article/10.1134%2FS1063776115050106](http://link.springer.com/article/10.1134/S1063776115050106) [IF=1.359 ]
49. D.A. Zayarnyi, A.A. Ionin, S.I. Kudryashov, S.V. Makarov, A.A. Rudenko, E.A. Drozdova, S.B. Odinokov, “Specific features of single-pulse femtosecond laser micron and submicron ablation of a thin silver film coated with a micron-thick photoresist layer”, Quantum Electronics 45 (5), 462 (2015). <http://www.mathnet.ru/php/archive.phtml?wshow=paper&jrnid=qe&paperid=16177&option_lang=eng> [ IF=1.887 ]
50. IA Artyukov, DA Zayarniy, AA Ionin, SI Kudryashov, SV Makarov, et al. "Relaxation phenomena in electronic and lattice subsystems on iron surface during its ablation by ultrashort laser pulses" JETP letters 99 (1), 51-55 (2014) <http://www.mathnet.ru/php/archive.phtml?wshow=paper&jrnid=jetpl&paperid=3635&option_lang=rus>, [ IF= 1.359 ]
51. M.A. Gubko, W. Husinsky, A.A. Ionin, S.I. Kudryashov, S.V. Makarov, et al. “Enhancement of ultrafast electron photoemission from metallic nano antennas excited by a femtosecond laser pulse”, Laser Physics Letters 11, 065301 (2014). [IF=2.458 ]
52. P.A. Danilov, D.A. Zayarnyi, A.A. Ionin, S.I. Kudryashov, S.V. Makarov, et al “Mechanisms of formation of sub-and micrometre-scale holes in thin metal films by single nano-and femtosecond laser pulses”, Quantum Electronics 44, 540 (2014). <http://iopscience.iop.org/article/10.1070/QE2014v044n06ABEH015426/meta>, [IF=1.887]
53. V.I. Emel’yanov, D.A. Zayarniy, A.A. Ionin, I.V. Kiseleva, S.I. Kudryashov , S.V. Makarov,T.H. T. Nguyen, A.A. Rudenko “Nanoscale hydrodynamic instability in a molten thin gold film induced by femtosecond laser ablation”, JETP letters 99, 518 (2014). [http://link.springer.com/article/10.1134%2FS0021364014090057](http://link.springer.com/article/10.1134/S0021364014090057) [ IF= 1.359 ]
54. Yu.N. Kulchin, O.B. Vitrik, A.A. Kuchmizhak, V.I. Emel'yanov, A.A. Ionin, S.I. Kudryashov, and S.V. Makarov “Formation of crownlike and related nanostructures on thin supported gold films irradiated by single diffraction-limited nanosecond laser pulses”, Physical Review E 90, 023017 (2014). <http://journals.aps.org/pre/abstract/10.1103/PhysRevE.90.023017> [ IF=2.288]
55. A.A. Ionin, S.I. Kudryashov , S.V. Makarov, N.N. Mel’nik, A.A. Rudenko, P.N. Saltuganov,L.V. Seleznev, D.V. Sinitsyn, I.A. Timkin “Structural and electrical characteristics of a hyperdoped silicon surface layer with deep donor sulfur states”, JETP Letters 100, 55 (2014). [http://link.springer.com/article/10.1134%2FS0021364014130062](http://link.springer.com/article/10.1134/S0021364014130062) [ IF= 1.359 ]
56. V.I. Emel’yanov, D.A. Zayarnyi, A.A. Ionin, S.I. Kudryashov, S.V. Makarov, P.N. Saltuganov “On the possibility of increasing lifetime of a neutron generator target through laser-induced nanorelief generation at the film–substrate interface”, Quantum Electronics 44, 829 (2014). <https://istina.msu.ru/publications/article/7392205/> [ IF=1.887]
57. Y.R. Kolobov, M.Yu. Smolyakova, A.Yu. Kolobova, A.A. Ionin, S.I. Kudryashov, S.V. Makarov, et al.“Superhydrophylic textures fabricated by femtosecond laser pulses on sub-micro-and nano-crystalline titanium surfaces”, Laser Physics Letters 11, 125602 (2014), <http://iopscience.iop.org/article/10.1088/1612-2011/11/12/125602/meta>, [IF=2.458 ]
58. A.A. Ionin, S.I. Kudryashov , S.V. Makarov, L.V. Seleznev, D.V. Sinitsyn “Electron dynamics and prompt ablation of aluminum surface excited by intense femtosecond laser pulse”, Applied Physics A 117, 1757 (2014). [http://link.springer.com/article/10.1007%2Fs00339-014-8826-0](http://link.springer.com/article/10.1007/s00339-014-8826-0) [ IF=1.704]
59. A.A. Ionin, Y.M. Klimachev, A.Y. Kozlov, S.I. Kudryashov , A.E. Ligachev, S.V. Makarov, et al. “Direct femtosecond laser fabrication of antireflective layer on GaAs surface”, Appl. Phys. B 111, 419 (2013). [http://link.springer.com/article/10.1007%2Fs00340-013-5350-4](http://link.springer.com/article/10.1007/s00340-013-5350-4) [ IF=1.856 ]
60. A.A. Ionin, S.I. Kudryashov, S.V. Makarov, et al. “Femtosecond laser modification of titanium surfaces: direct imprinting of hydroxylapatite nanopowder and wettability tuning via surface microstructuring”, Laser Phys. Lett. 10, 045605 (2013). <http://iopscience.iop.org/article/10.1088/1612-2011/10/4/045605/meta> [ IF=2.458 ]
61. A.A. Ionin, S.I. Kudryashov, A.E. Ligachev, S.V. Makarov, N.N. Mel'nik, A.A. Rudenko, L.V. Seleznev, D.V. Sinitsyn and R.A. Khmelnitskii “Local field enhancement on metallic periodic surface structures produced by femtosecond laser pulses”, Quant. Electr 43, 304 (2013). <http://iopscience.iop.org/article/10.1070/QE2013v043n04ABEH015105/pdf>, [IF=1.887]
62. A.A. Ionin , S.I. Kudryashov , S.V. Makarov , et al. “Sub-100 nanometer transverse gratings written by femtosecond laser pulses on a titanium surface”, Laser Physics Letters 10, 056004 (2013). <http://dspace.bsu.edu.ru/handle/123456789/4894>, [ IF=2.458 ]
63. M.A. Gubko, A.A. Ionin, S.I. Kudryashov, S.V. Makarov , et al. “Focusing of intense femtosecond surface plasmon-polaritons”, JETP letters 97, 599 (2013). [http://link.springer.com/article/10.1134%2FS0021364013100056](http://link.springer.com/article/10.1134/S0021364013100056) [ IF= 1.359 ]
64. V.N. Lednev, S.M. Pershina, A.A. Ionin, S.I. Kudryashov, S.V. Makarov, A.E. Ligachev, A.A. Rudenko, R.A. Chmelnitsky, A.F. Bunkin “Laser ablation of polished and nanostructured titanium surfaces by nanosecond laser pulses”, Spectrochimica Acta B 88, 15 (2013). <http://www.sciencedirect.com/science/article/pii/S0584854713002024> [ IF=3.176 ]
65. A.A. Kuchmizhak , Y.N. Kulchin, O.B. Vitrik, A.G. Savchuk, S.V. Makarov, S.I. Kudryashov, A. A. Ionin “Optical apertureless fiber microprobe for surface laser modification of metal films with sub-100nm resolution”, Optics Communications 308, 125 (2013). <http://www.journals.elsevier.com/opticscommunications/> [ IF=1.449 ]
66. AA Ionin, SI Kudryashov, AE Ligachev, SV Makarov, NN Mel'nik, et al. "Local field enhancement on metallic periodic surface structures produced by femtosecond laser pulses" Quantum Electronics 43 (4), 304-307 (2013) <http://www.quantum-electron.ru/php/paper_rus.phtml?journal_id=qe&paper_id=15105>, [ IF= 0.886 ]
67. A.A. Ionin, S.I. Kudryashov , S.V. Makarov , et al. “Heterogeneous” versus “homogeneous” nucleation and growth of microcones on titanium surface under UV femtosecond-laser irradiation», Applied Physics A 116, 1133 (2013). [http://link.springer.com/article/10.1007%2Fs00339-013-8196-z](http://link.springer.com/article/10.1007/s00339-013-8196-z) [ IF=1.704]
68. A.A. Ionin, S.I. Kudryashov , S.V. Makarov , et al. “Femtosecond laser color marking of metal and semiconductor surfaces”, Appl. Phys. A 107, 301 (2012). [http://link.springer.com/article/10.1007%2Fs00339-012-6849-y](http://link.springer.com/article/10.1007/s00339-012-6849-y) [ IF= 1.694 ]
69. A.A. Ionin, S.I. Kudryashov , S.V. Makarov, et al. “Ultrafast electron dynamics on the silicon surface excited by an intense femtosecond laser pulse”, JETP Letters 96, 375 (2012). [http://link.springer.com/article/10.1134%2FS002136401218004X](http://link.springer.com/article/10.1134/S002136401218004X) [ IF= 1.359]
70. E.V. Golosov, A.A. Ionin, Y.R. Kolobov, S.I. Kudryashov , A.E. Ligachev, S.V. Makarov,et al. “Topological evolution of self-induced silicon nanogratings during prolonged femtosecond laser irradiation”, Appl. Phys. A 104, 701 (2011). [http://link.springer.com/article/10.1007%2Fs00339-011-6323-2](http://link.springer.com/article/10.1007/s00339-011-6323-2) [ IF=1,704 ]
71. E.V. Golosov, A.A. Ionin, Yu.R. Kolobov, S.I. Kudryashov, A.E. Ligachev, S.V. Makarov, et al. “Formation of periodic nanostructures on aluminum surface by femtosecond laser pulses”, Nanotechnology in Russia 3-4, 237 (2011). [http://link.springer.com/article/10.1134%2FS199507801102008X](http://link.springer.com/article/10.1134/S199507801102008X) [ IF = 0.495 ]
72. A. A. Ionin, S. I. Kudryashov , S. V. Makarov, L. V. Seleznev, D. V. Sinitsyn “Generation and detection of superstrong shock waves during ablation of an aluminum surface by intense femtosecond laser pulses”, JETP Letters 94, 34 (2011). [http://link.springer.com/article/10.1134%2FS002136401113008X](http://link.springer.com/article/10.1134/S002136401113008X) [IF= 1.359]
73. A.A. Ionin, S.I. Kudryashov , A.E. Ligachev, S.V. Makarov, L.V. Seleznev, D.V. Sinitsyn “Nanoscale cavitation instability of the surface melt along the grooves of the one-dimensional nanorelief gratings on an aluminum surface”, JETP Letters 94, 266 (2011). [http://link.springer.com/article/10.1134%2FS0021364011160065](http://link.springer.com/article/10.1134/S0021364011160065) [ IF= 1.359 ]
74. A.A. Ionin, E.V. Golosov, Yu.R. Kolobov, S.I. Kudryashov, A.E. Ligachev, S.V. Makarov, et al. “Formation of quasi-periodic nano-and microstructures on silicon surface under IR and UV femtosecond laser pulses”, Quant. Electr. 41 829 (2011). <http://iopscience.iop.org/article/10.1070/QE2011v041n09ABEH014530/meta> [ IF=1.887]
75. V.S. Gorelik , A.A. Ionin, S.I. Kudryashov, S.V. Makarov, et al. “Nanocomposites based on globular photonic crystals grown by laser ablation using femtosecond laser pulses”, Bulletin of the Lebedev Physics Institute 38, 328 (2011). [http://link.springer.com/article/10.3103%2FS1068335611110030](http://link.springer.com/article/10.3103/S1068335611110030) [ IF=0.246 ]
76. P.A. Danilov et al. "Specific features of single-pulse femtosecond laser micron and submicron ablation of a thin silver film coated with a micron-thick photoresist layer"Quantum Electronics 45(5), 462 (2015)) <http://www.quantum-electron.ru/php/paper_rus.phtml?journal_id=qe&paper_id=15760>, [IF= 0.886]
77. A. Krasnok, S. Makarov, M. Petrov, R. Savelev, P. Belov, Y. Kivshar «Towards all-dielectric metamaterials and nanophotonics» (Review), SPIE Optics+ Optoelectronics 950203-950203-17 (2015). <http://proceedings.spiedigitallibrary.org/proceeding.aspx?articleid=2291516>, [ IF= 0.954]
78. R.S. Savelev, S.V. Makarov, A.E. Krasnok, P.A. Belov "From optical magnetic resonance to dielectric nanophotonics (A review)" Optics and Spectroscopy 119(4), 551 (2015). [ IF = 0.723 ].
79. D.A. Zayarny, S.V. Makarov, et al. "Nanoscale boiling during single-shot femtosecond laser ablation of thin gold films" JETP Letters 101(6), 394 (2015) <http://www.jetpletters.ac.ru/ps/2074/article_31210.shtml>, [ IF= 1.359 ]