

# George P Zograf

(Georgii Petrovich Zograf) Curriculum Vitae

## PERSONAL DETAILS

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*Birth* May 18, 1994  
*Address* 63/3/4 Engelsa ave, Saint-Petersburg, Russia  
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*Researchgate* [https://www.researchgate.net/profile/George\\_Zograf](https://www.researchgate.net/profile/George_Zograf)  
*SPIE* ID# 4111908  
*Google Scholar* <https://scholar.google.com/citations?user=PVuwyAgAAAAJ&hl=en&oi=sra>

## EDUCATION

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### PhD Optics

2017-present

*ITMO University*

Department of Nanophotonics and Metamaterials

Supervisor: Dr. Sergey Makarov (<https://metalab.ifmo.ru/people/~makarov>)

### MSc Optics

2015-2017

*ITMO University*

Department of Nanophotonics and Metamaterials. Resonant non-plasmonic nanoparticles for efficient temperature-feedback optical heating

Supervisor: Dr. Sergey Makarov (<https://metalab.ifmo.ru/people/~makarov>)

### BSc General Physics

2011-2015

*Peter The Great SPbPU*

Department of Physics, Nanotechnologies and Telecommunications. Shape memory alloys features

## WORK EXPERIENCE

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### Lab Assistant

2013-2016

*Ioffe Institute, Part-time*

Lab Assistant at Shaped Crystals Physics Laboratory.

### Engineer

2016-present

*ITMO University, Full-time*

Engineer at The International Research Centre for Nanophotonics and Metamaterials. The Metamaterials Laboratory. (Prof. Pavel Belov and Prof. Yuri Kivshar group)

web: [metalab.ifmo.ru](http://metalab.ifmo.ru)

## INTERNSHIPS

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Zhejiang University (Hangzhou, China). Prof. Min Qiu Group

04-05.2018

April-May 2018, Visiting PhD Student

Nanowelding of plasmonic and dielectric structures  
Fabrication of dielectric metasurfaces  
web: <http://ipnp.zju.edu.cn/>

## FTMC (Vilnius, Lithuania).

10-11.2017

October-November 2017, Visiting PhD Student

Non-linear spectroscopy (Coherent Anti-Stokes Raman Scattering)  
Ultrafast Photoluminescence detection (streak-camera)  
web: <https://www.ftmc.lt/en>

## SKILLS

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*Languages* Russian (mother tongue)  
English (fluent)  
German (brief)

*Software* COMSOL Multiphysics, MATLAB, L<sup>A</sup>T<sub>E</sub>X, Blender Render, CST MICROWAVE, MAPLE, AUTOCAD, FORTRAN, ORIGIN, MATHEMATICA

*Experimental* Dark-field scattering spectroscopy, Raman spectroscopy, Non-linear optics (SHG, THG), Photoluminescence, Femtosecond laser ablation, Multiple photon absorption luminescence

## PUBLICATIONS

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- [1] Zograf G.P., Petrov M.I., Zuev D.A., Dmitriev P.A., Milichko V.A., Makarov S.V., and Belov P.A. Resonant non-plasmonic nanoparticles for efficient temperature-feedback optical heating, **Nano Letters**, 17 (5), pp 2945–2952, (2017)
- [2] Makarov S.V., Petrov M.I., Zywietz U., Milichko V.A., Lopanitsyna N.Y., Kuksin A.Y., Mukhin I.S., Zograf G.P., Ubyivovk E., Smirnova D., Starikov S.V., Chichkov B., Kivshar Yu.S. Efficient Second-Harmonic Generation in Nanocrystalline Silicon Nanoparticle, **Nano Letters**, 17 (5), pp 3047–3053, (2017)
- [3] Tiguntseva, E. Y., Zograf, G. P., Komissarenko, F. E., Zuev, D. A., Zakhidov, A. A., Makarov, S. V., & Kivshar, Y. S. Light-Emitting Halide Perovskite Nanoantennas. **Nano Letters**, 18(2), 1185-1190, (2018)
- [4] Milichko, V.A., Zuev, D.A., Baranov, D.G., Zograf, G.P., Volodina, K., Krasilin, A.A., Mukhin, I.S., Dmitriev, P.A., Vinogradov, V.V., Makarov, S.V. and Belov, P.A. Metal-Dielectric Nanocavity for Real-Time Tracing Molecular Events with Temperature Feedback. **Laser & Photonics Reviews**, 12(1), p.1700227, (2018)
- [5] M. Aouassa, E. Mitsai, S. Syubaev, D. Pavlov, A. Zhizhchenko, I. Jadli, L. Hassayoun, G. Zograf, S. Makarov, and A. Kuchmizhak. Temperature-feedback direct laser reshaping of silicon nanostructures, **Applied Physics Letters**, 111(24), p.243103, (2017)
- [6] Zalogina, A. S., Savelev, R. S., Ushakova, E. V., Zograf, G. P., Komissarenko, F. E., Milichko, V. A., & Shadrivov, I. V. Purcell effect in active diamond nanoantennas. **Nanoscale**, 10(18), 8721-8727, (2018)
- [7] Zograf, G.P., Yu, Y.F., Baryshnikova, K.V., Kuznetsov, A.I. and Makarov, S.V. Local crystallization of a resonant amorphous silicon nanoparticle for the implementation of optical nanothermometry. **JETP Letters**, 107(11), pp.699-704, (2018)

## **CONFERENCE PROCEEDINGS (SELECTED)**

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- [1] Zograf G.P., Rybin M.V., Zuev D.A., Makarov S.V., Belov P.A., Lopanitsyna N.Y., Kuksin A.Y., Starikov S.V. Gap size impact on metal-dielectric nanocavity heater properties, AIP Conference Proceedings, 1874, 030043 (2017)
- [2] P. A. Dmitriev, D. G. Baranov, V. A. Milichko, I. S. Mukhin, Q. Li, S. Mondal, S. V. Makarov, A. K. Samusev, G. P. Zograf, D. A. Zuev, E. K. Makarova, M. I. Petrov, I. S. Sinev, M. A. Gorlach, K. S. Frizyuk, and P. A. Belov Resonant optical properties of crystalline silicon nanoparticles fabricated by laser ablation-based methods, AIP Conference Proceedings 1874, 040005 (2017)
- [3] Zograf G.P., Rybin M.V., Zuev D.A., Makarov S.V., Belov P.A., Lopanitsyna N.Y., Kuksin A.Y., Starikov S.V. Modeling of formation mechanism and optical properties of Si/Au core-shell nanoparticles, Proceedings of the International Conference Days on Diffraction 2016, pp. 460-463, (2016)
- [4] Zograf G.P., Zuev D.A., Milichko V.A., Mukhin I.S., Baranov M.A., Ubyivovk E., Makarov S.V., Belov P.A. Laser printing of Au/Si core-shell nanoparticles // Journal of Physics: Conference Series, Vol. 741, No. 1, pp. 012119, (2016)

## **CONFERENCES (SELECTED)**

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- [1] NANOP 2017, Barcelona, Spain (**oral**)
- [2] METANANO 2017, Vladivostok, Russia (**oral**)
- [3] Summer School 'Nicolas Cabrera' on Light-matter interaction at the nanoscale 2018, Miraflores de la Sierra, Madrid, Spain (**poster**)
- [4] METANANO 2018, Sochi, Russia (**oral**)

## **AWARDS AND SCHOLARSHIPS (SELECTED)**

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- [1] **UNESCO** International Year of Light 2015 masters students competition winner.
- [2] ITMO University increased scholarship for successful scientific research. (2015-2017)
- [3] Winner of the II annual conference for best student presentation 'Science of the Future - Science of the Young'. (2016)
- [4] Scholarship of The Russian Government. (2017)
- [5] Scholarship of The Russian President. (2018-2019)
- [6] 2nd place Award for the Best Master's thesis work in the field of Photonics (Program number 12.00.00) in Russian Federation (2017)
- [7] Winner of the Science Slam in Saint Petersburg (12.02.2018)
- [8] Winner of the RusNano Science Slam devoted to SPIEF'18 (24.05.2018)
- [9] Saint-Petersburg Committee for Science and Higher Education individual grants for graduated students 2018. Awarded to the series of works on 'Non-plasmonic optical heating and thermometry at nanoscale'