



# Diana O. Gagarinova

Postgraduate student

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## EDUCATION

**Bachelor's Program, Infocommunication Technologies and Communication Systems (in Russian),** 2014 – 2018  
Faculty of Infocommunication Networks and Systems of SPbSUT, St. Petersburg, Russia

**Thesis:** Analysis of methods and devices for the parameters of passive optical components in production and incoming inspection

**Master's Programs, Technical Physics (in Russian),** Faculty of Laser photonics and optoelectronics of ITMO University, St. Petersburg, Russia 2018 – 2020

**Thesis:** Development and research of optic fiber protein concentration sensor

## RESEARCH

**Development of optic fiber biosensor for detecting sepsis markers** December 2022 – November 2023

- Development of optic fiber sensor samples based on the welding of multimode and single-mode fibers with gold plating for surface plasmon resonance generation
- Development of an optical scheme for experimental research
- Conducting calibration measurements to evaluate the sensitivity of the resulting optic fiber sensor samples
- Conducting C-reactive protein measurements after the functionalization step of gold-coated optic fiber sensor samples
- Processing of measurement results in OriginPro software

**Manufacturing optical amplifier units** December 2019 – April 2022

- Welding of optical fibers and optical pigtails
- Pouring the compound into the optical amplifier unit

## JOB

**Engineer** April 2019 – November 2022  
Lightguide Photonic Research Center of ITMO University, St. Petersburg, Russia

**Mentor** October 2022 – December 2022  
Support office of ITMO University, St. Petersburg, Russia

**Engineer** November 2022 – Present  
Faculty of Physics of ITMO University, St. Petersburg, Russia

**Mentor** February 2023 – Present  
Support office of ITMO University, St. Petersburg, Russia

## SKILLS

- Working with Tilted Fiber Bragg gratings, measuring the refractive index of the external environment with them.
- Polishing optical fibers to create a D-shaped structure, measuring the refractive index of the external environment with them
- Creating a heterostructure from optical fibers of different core diameters, measuring the refractive index of the external environment with them
- Spraying of metal coatings on the surface of optical fibers for generation surface plasmon resonance
- Data processing in OriginPro software
- Working in the Autocad program

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#### GRANTS

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Grant from the Gennady Komissaroff Foundation (Russia) 2020

Grant from the Committee on Science and Higher Education of St. Petersburg (Russia) 2022

#### PUBLICATIONS

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- Gushchin M., Gagarinova D., Pliastcov S.A., Vartanyan T.A. Design of a Fiber-Optic Refractometer Based on Surface Plasmon Resonance and Its Sensitivity // Optics and spectroscopy - 2021, Vol. 129, No. 11, pp. 1226-1230  
doi: 10.1134/S0030400X21090095