

# Georgii Zmaga

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My research interests cover a wide range of topics in the field of applied nanophotonics, with a particular focus on the statistical analysis and applications of information theory for use in surface-enhanced Raman spectroscopy. To this date, I have already co-authored several scientific contributions published in peer reviewed journal papers.

## Education

2021-date **School of Physics, ITMO University, Russia**  
Fourth year bachelor student

### Educational courses

Classical electrodynamics, Quantum electrodynamics, Quantum mechanics, Physics of the solid state, Optics of waveguides and resonators

## Work

2023-date **Optical Laboratory, School of Physics, ITMO University, Russia**  
Laboratory assistant

### Collaborators

Prof. Song Yanlin's research group at the Institute of Chemistry, Chinese Academy of Sciences

## Skills

Languages Strong reading, writing and speaking competencies for Russian, English  
Experiments Dark-field, Raman, reflection, transmission  
Simulations CST Microwave Studio – scattering, near-field distribution, radiation pattern; Comsol – waveguide modes  
Programming Matlab, Python,  $\LaTeX$  typesetting

## Scholarships

2021-2023 University scholarship  
2024-date University scholarship  
Russian government scholarship  
Increased state academic scholarship for achievements in scientific research activities

## Publications

### Journal articles

- 2023 Huadong Wang, Yali Sun, Zeying Zhang, Xu Yang, Bobing Ning, Pavel Senyushkin, Bogdan Bogdanov, **Georgii Zmaga**, Yonggan Xue, Jimei Chi, Hongfei Xie, Sisi Chen, Tingqing Wu, Zewei Lian, Qi Pan, Bingda Chen, Zhiyu Tan, Xiangyu Pan, Meng Su, and Yanlin Song, "Molecular Recognition-Modulated Hetero-Assembly of Nanostructures for Visualizable and Portable Detection of Circulating miRNAs", *Analytical Chemistry* 2023 95 (31), 11769-11776
- 2024 Pan, Xiangyu; Zhang, Zeying; Yun, Yang; Zhang, Xu; Sun, Yali; Zhang, Zixuan; Wang, Huadong; Yang, Xu; Tan, Zhiyu; Yang, Yaqi; Xie, Hongfei; Bogdanov, Bogdan; **Zmaga, Georgii**; Senyushkin, Pavel; Wei, Xuemei; Su, Meng; Song, Yanlin, "Machine learning-assisted high-throughput identification and quantification of protein biomarkers with printed heterochains", *J. Am. Chem. Soc.* 2024, 146, 28, 19239–19248

### Conference proceedings

- 2024 **G.V. Zmaga**, A.A. Kuzmin, Y. Sun, Q. Pan, M. Su, Y. Song, D.A. Zuev, P.A. Belov, "Molecular detection using plasmonic nanostructures of particular geometry," 2024 International Conference Laser Optics (ICLO), Saint Petersburg, Russian Federation, 2024, pp. 356-356

## Conferences

- 2024 21st International Conference Laser Optics ICLO 2024  
Resonant Nanophotonics Educational Workshop 2024, Skoltech  
School on Biophotonics 2024, ITMO University