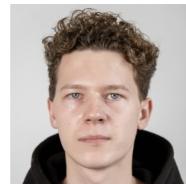


# PAVEL SMIRNOV



## BASIC INFORMATION

9, Lomonosova st., Saint-Petersburg, Russia  
pavel.smirnov@metalab.ifmo.ru, +7 (965) 508-84-26

## EDUCATION

**Antenna Engineering** September 2021 – Present  
ITMO University, St. Petersburg, Russia  
Title of qualification: PhD  
Thesis: Thesis: New generation devices for wireless power transfer and energy harvesting systems  
Supervisor: Dr. Polina Kapitanova

**RF systems and devices** September 2019 – August 2021  
ITMO University, St. Petersburg, Russia  
Title of qualification: Master of Science, cum laude  
Thesis: Hybrid crossing  
wire resonator for WPT systems  
Supervisor: Dr. Mingzhao Song

**Radio Engineering** September 2015 – August 2019  
Ural Federal University, Ekaterinburg, Russia  
Title of qualification: Bachelor of Science, cum laude  
Thesis: Development of an unmodulated SHF signals detector  
Supervisor: Dr. Yuriy Mitelman

## WORK EXPERIENCE

**Engineer** January 2020 – Present  
ITMO University (St. Petersburg, Russia)  

- Wireless power transfer and energy harvesting systems development
- Numerical simulation of RF devices in CST Microwave Studio, ADS
- Experimental study antennas and RF devices and results processing

**Design Engineer** October 2021 – October 2022  
Machine-building plant named after M.I. Kalinin (Ekaterinburg, Russia)  
PCB layout design of high-power circuits for automotive vehicles  

- Design documentation development
- Experimental research and debugging of electronic circuits

## AWARDS AND SCHOLARSHIPS

- Presidential scholarships for study abroad, 2024
- Scholarships of the President of the Russian Federation for PhD students, 2024
- PhD Students Grant of Committee on Science and Higher Education, 2022
- Grand Prix of the VI All-Russian competition of final qualifying works "Be First!", 2021

- The ITMO University Distinguished Master's Thesis Award, 2021
- State Academic Scholarship for excellent achievement in Scientific research, 2021
- Vladimir Potanin Foundation Fellowship, 2020
- Silver medalist of «I am a Professional» olympiad on radio engineering, 2019

## PUBLICATIONS

### Papers:

1. Smirnov P., Miroshnikov A., Zotov N., Westphal M., Kapitanova P. Optimization of transmission coils of one-to-many wireless power transfer systems. *Nanoindustry*. 2024. Vol. 17. No. S10-1(128). pp. 79-84.
2. P. Smirnov, E. Koreshin, G. Baranov, and P. Kapitanova, "Self-tuning approach for metasurface-based resonators for one-to-many wireless power transfer," *J. Appl. Phys.*, vol. 134, no. 8, p. 084901, 2023, doi: 10.1063/5.0152710. [IF = 2.77]
3. Zelenkov, L. E., Smirnov, P., Baranov, G., Tsyrynova, A., Ilyin, S., Danilovskiy, E., Makarov, S., Kapitanova, P., "Bright and Stable Perovskite Nanocrystals Lighted Up Remotely by Means of Wireless Power Transfer," *Adv. Opt. Mater.*, p. 2301123, 2023, doi: 10.1002/adom.202301123. [IF = 9.6]
4. M. Kuzmin, E. Zanganeh, A. Tsyrynova, P. Smirnov, A. Zolotarev, and P. Kapitanova, "Experimental investigation of metasurface-based resonator for one-to-many wireless power transfer systems in the presence of foreign objects," *Photonics Nanostructures - Fundam. Appl.*, p. 101155, 2023, doi: 10.1016/j.photonics.2023.101155. [IF = 3.16]
5. P. Smirnov, P. Kapitanova, E. Nenasheva and M. Song, "Compact Hybrid Metasurface-Inspired Resonator with Uniform Magnetic Field Distribution for Wireless Power Transfer," in *IEEE Antennas and Wireless Propagation Letters - 2022*, doi: 10.1109/LAWP.2021.3124075. [IF = 4.8]
6. Song M., Jayathurathnage P., Zanganeh E., Krasikova M.V., Smirnov P.A., Belov P.A., Kapitanova P.V., Simovski C.R., Tretyakov S., Krasnok A.E. "Wireless power transfer based on novel physical concepts," *Nature Electronics* - 2021, Vol. 4, No. 10, pp. 707-716, doi: 10.1038/s41928-021-00658-x [IF = 33.7]
7. Song M., Smirnov P., Puhtina E.M., Zanganeh E., Glybovski S.B., Belov P.A., Kapitanova P.V. "Multi-mode metamaterial-inspired resonator for near-field wireless power transfer," *Appl. Phys. Lett.*, vol. 117, no. 8, p. 083501, Aug. 2020, doi: 10.1063/5.0012006. [IF = 3.8]

### Conference proceedings:

1. P. Smirnov, E. Koreshin, G. Baranov and P. Kapitanova, "Free-Positioning Multi-Receiver Wireless Power Transfer System Based on Metasurface," 2023 IEEE MTT-S International Wireless Symposium (IWS), Qingdao, China, 2023, pp. 1-3, doi: 10.1109/IWS58240.2023.10222022.
2. Smirnov P., Baranov G., Filimonova T., Tsyrynova A., Rakhmatullin A., Song M., Zelenkov L., Danilovskiy E., Makarov S., Kapitanova P. One-to-Many Wireless Power Transfer Systems Using Metasurface-Inspired Resonators // *Wireless Power Week, WPW 2022 - 2022*, pp. 690-693, doi: 10.1109/WPW54272.2022.9901329
3. Filimonova T.A., Smirnov P.A. Perovskite chess: one-to-many wireless power transfer system // *Proceedings of the XI Congress of Young Scientists (St. Petersburg, April 4-8, 2022) - 2022. - Vol. 2. - pp. 268-272*
4. P. Smirnov, M. Song, and P. Kapitanova, "Numerical study of hybrid metasurface as WPT transmitter," in *AIP Conference Proceedings*, 2020, vol. 2300, p. 020119, doi: 10.1063/5.0031861.
5. V. Chechetkin, A. Korotkov, E. Golubenko, E. Sychugov, and P. Smirnov, "Investigation of the Characteristics of the TEM Cell Model," in *Proceedings - 2019 Ural Symposium on Biomedical Engineering, Radioelectronics and Information Technology, USBEREIT 2019*, 2019, doi: 10.1109/USBEREIT.2019.8736607.

### Patents:

1. P. Smirnov, M. Song, P. Kapitanova, S. Glybovski, "Wireless power transfer device," Patent RU202324U1, 2020.