



Pavel Smirnov

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Address § 9, Lomonosova st., Saint-Petersburg, Russia

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

ITMO University (St. Petersburg, Russia)

January 2020 — Present

Engineer

- 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

Machine-building plant named after M.I. Kalinin (Ekaterinburg, Russia)

October 2021 — October 2022

Design Engineer

- PCB layout design of high-power circuits for automotive vehicles
- Design documentation development
- Experimental research and debugging of electronic circuits

AWARDS AND SCHOLARSHIPS

- 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
- Prize-winner of «I am a Professional» olympiad on radio engineering, 2020
- Vladimir Potanin Foundation Fellowship, 2020
- Silver medalist of «I am a Professional» olympiad on radio engineering, 2019

PUBLICATIONS

Papers:

1. 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]
2. **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]
3. 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]
4. 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. **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
2. 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
3. **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.
4. 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.