

Curriculum Vitae: Dr. Valentina Shumakova

Personal Information

Name: Dr. Valentina Shumakova
Nationality: Russian
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Education

June 2018 PhD degree, Photonics Institute, TU Wien, Vienna, Austria
2014-2018 PhD student, Photonics Institute, TU Wien, Vienna, Austria
2014 Master of Science Degree in Physics, Lomonosov Moscow State University
Moscow, Russia
2008-2014 Study of Physics, Lomonosov Moscow State University, Moscow, Russia
2008 High school graduation

Academic Career

Since 03. 2021 Postdoc at Photonics Institute, TU Wien (Vienna, Austria)
Senior Research Fellow at Cristian Doppler Laboratory for Mid-Infrared Spectroscopy and Semiconductor Optics, University of Vienna (Vienna, Austria)
02.2020 – 01.2021 Postdoc at Cristian Doppler Laboratory for Mid-Infrared Spectroscopy and Semiconductor Optics, University of Vienna (Vienna, Austria)
04.2019 – 09.2019 Researcher in Joint Attosecond Science Laboratory, University of Ottawa (Ottawa, ON, Canada)
04.2014 – 03.2019 Project Assistant in Ultrafast Laser Group, Photonics Institute, TU Wien, Vienna, Austria
2010 – 2014 Junior research scientist in Laboratory of Photonics and Nonlinear Spectroscopy at International Laser Center of Lomonosov Moscow State University, Moscow, Russia

Professional Activities

10.2017 Visiting researcher, GAP, University of Geneva, Switzerland
10/11.2016 Visiting researcher, Russian Quantum Center, Skolkovo, Russia

Research Interests

Nonlinear optics; Optical parametrical amplification; Filamentation; Generation of THz-radiation with vector beams; Mid-IR optics; Atmospheric optics; Laser physics;

Reviewer

Optics Express; Journal of Optical Society of America B; Optics Letters; Scientific Reports

Committee Member

CLEO Europe 2021 (Ultrafast Laser Science)

Publications

> 73 publications in peer reviewed journals and conference proceedings

total citations: >220

h-index: 7 (SCOPUS)

https://www.scopus.com/cto2/main.uri?origin=resultslist&stateKey=CTOF_1162860645

List of ten most important scientific publications in peer-reviewed journals

1. V. Shumakova, S. Ališauskas, P. Malevich, A. A. Voronin, A. V. Mitrofanov, D. A. Sidorov-Biryukov, A. M. Zheltikov, D. Kartashov, A. Baltuška, and A. Pugžlys, "Chirp-controlled filamentation and formation of light bullets in the mid-IR," *Opt. Lett.* 44, 2173-2176 (2019) doi: 10.1364/OL.44.002173
2. D. Woodbury, L. Feder, V. Shumakova, C. Gollner, R. Schwartz, B. Miao, F. Salehi, A. Korolov, A. Pugžlys, A. Baltuška, and H. M. Milchberg, "Laser wakefield acceleration with mid-IR laser pulses," *Opt. Lett.* 43, 1131-1134 (2018) doi: 10.1364/OL.43.001131
3. V. Shumakova, S. Ališauskas, P. Malevich, C. Gollner, A. Baltuška, D. Kartashov, A. M. Zheltikov, A. V. Mitrofanov, A. A. Voronin, D. A. Sidorov-Biryukov, and A. Pugžlys, "Filamentation of mid-IR pulses in ambient air in the vicinity of molecular resonances," *Opt. Lett.* 43, 2185-2188 (2018), doi: 10.1364/OL.43.002185
4. V. Shumakova, P. Malevich, S. Ališauskas, A. Voronin, A.M. Zheltikov, D. Faccio, D. Kartashov, A. Baltuška, A. Pugžlys, "Multi-millijoule few-cycle mid-infrared pulses through nonlinear self-compression in bulk". *Nature Communications* 7:12877 (2016) doi: 10.1038/ncomms12877
5. A. V. Mitrofanov, A. A. Voronin, D. A. Sidorov-Biryukov, S. I. Mitryukovsky, A. B. Fedotov, E. E. Serebryannikov, D. V. Meshchankin, V. Shumakova, S. Ališauskas, A. Pugžlys, V. Ya. Panchenko, A. Baltuška, A. M. Zheltikov, "Subterawatt few-cycle mid-infrared pulses from a single filament," *Optica* 3, 299-302 (2016). doi: 10.1364/OPTICA.3.000299
6. Zhanna Samsonova, Sebastian Höfer, Vural Kaymak, Skirmantas Ališauskas, Valentina Shumakova, Audrius Pugžlys, Andrius Baltuška, Thomas Siefke, Stefanie Kroker, Alexander

- Pukhov, Olga Rosmej, Ingo Uschmann, Christian Spielmann, and Daniil Kartashov, "Conductivity and discharge guiding properties of mid-IR laser filaments" *Phys. Rev. X* 9, 021029 (2019). doi: 10.1103/PhysRevX.9.021029
7. A. V. Mitrofanov, A. A. Voronin, D. A. Sidorov-Biryukov, M. V. Rozhko, E. A. Stepanov, A. B. Fedotov, V. Shumakova, S. Ališauskas, A. Pugžlys, A. Baltuška, A. M. Zheltikov, "Mapping anomalous dispersion of air with ultrashort mid-infrared pulses", *Scientific Reports* 7, 2103 (2017). doi: 10.1038/s41598-017-01598-3
 8. A. V. Mitrofanov, A. A. Voronin, M. V. Rozhko, D. A. Sidorov-Biryukov, A. B. Fedotov, A. Pugžlys, V. Shumakova, S. Ališauskas, A. Baltuška, A. M. Zheltikov, "Self-compression of high-peak-power mid-infrared pulses in anomalously dispersive air," *Optica* 4, 1405-1408 (2017) doi: 10.1364/OPTICA.4.001405
 9. Anastasios D. Koulouklidis, Claudia Gollner, Valentina Shumakova, Vladimir Yu. Fedorov, Audrius Pugžlys, Andrius Baltuška & Stelios Tzortzakis, "Observation of extremely efficient terahertz generation from mid-infrared two-color laser filaments", *Nature Communications* 11, 292 (2020)
doi: 10.1038/s41467-019-14206-x
 10. R. Hollinger, P. Malevich, V. Shumakova, S. Alisauskas, M. Zapf, R. Röder, A. Pugžlys, A. Baltuska, C. Ronning, Ch. Spielmann, D. Kartashov "Strong Light-Field Driven Nanolasers", *Nano Letters* 19, 3563–3568 (2019), doi:10.1021/acs.nanolett.9b00510