

## CURRICULUM VITAE

Maria G. Burdanova

**Occupation** PhD student, Lab Demonstrator  
**Affiliation** University of Warwick, Department of Physics, Gibbet Hill Road, Coventry, CV4 7AL, United Kingdom  
**Phone number** +79164865346, +447460266467  
**Email** [m.burdanova@warwick.ac.uk](mailto:m.burdanova@warwick.ac.uk), [burdanova.mg@gmail.com](mailto:burdanova.mg@gmail.com)  
**Date of birth** 19.06.1992  
**Research Field** *Nanostructures and heterostructures, one – and two – dimensional nanomaterials, optical properties of nanomaterials, ultrafast spectroscopy of nanomaterials.*

### Skills:

- Advanced working experience in the nanostructures optical characterisation ( UV/vis/IR spectroscopy, Fourier-transform infrared spectroscopy, Raman Spectroscopy, Photoluminescence spectroscopy, THz spectroscopy, Pump – Probe spectroscopy).
- Basic knowledge in the nanomaterial sample preparation and characterisation (Atomic Force Microscopy and Scanning Electron Microscopy, Optical microscopy).
- MatLab, Maple and C/C++, Python, Latex.

### Professional Career

#### • Education

2016 – present PhD student, Warwick Centre for Ultrafast Spectroscopy, Laboratory of THz spectroscopy, University of Warwick, Coventry, UK (Supervisor: Dr. James Lloyd-Hughes)  
2014 - 2016 MSc (with honours) in Technical physics (Optics and Quantum Electronics) from Bauman Moscow State Technical University (BMSTU), Moscow, Russia  
Dissertation Title: ‘The propagation of the electromagnetic waves in the capillary fibers doped with rare-earth ions.’ (Carried out on the basis of Laboratory of Raman spectroscopy. Lebedev Physical Institute of the Russian Academy of Sciences. Supervisor: Prof. V.S.Gorelik)

#### • Teaching experience

2016 – present Lab Demonstration: Year 1 Lab Demonstration, X-Ray scattering experiments, Electronics. University of Warwick, Coventry, UK  
2014 – 2016 Technician of the department “Fundamental science”, BMSTU, Moscow, Russia.  
2014 – 2016 Teaching assistant of the department "Physics". Lab demonstration: Classical mechanics, Quantum mechanics. Seminars/workshops: Quantum mechanics, BMSTU, Moscow, Russia.  
2014 – 2016 Certified private tutor (Preparation for Unified State Exam, Final State Certification, Calculus and Probability theory, Introduction in Linear algebra)

### Awards/Scholarships/Grants

2016 – 2020 Global Education Programme (100.000 £, fully covering my PhD tuition fees at Warwick and subsistence costs), Russian government funding programme.  
2014 – 2016 President of Russian Federation scholarship  
2013 – 2016 Scholarship of the Academic Council of BMSTU

### Conferences:

2019 1-6 September, **Efficient Ultrafast THz Modulators Based On Negative Photoconductivity In Controllably Doped Carbon Nanotubes**. ITMMW-THz conference, Paris, France - Poster (Presented by James Lloyd-Hughes)  
2019 10-11 July, **Ultrafast infrared and THz switching based on controllably-doped carbon nanotubes showing negative photoconductivity** UK Semiconductors 2019, Sheffield, UK – Talk  
2019 3-5 July, **Ultrafast negative photoconductance of controllably doped carbon nanotubes**. Condensed Matter and Quantum materials (CMQM), St Andrews, UK – Talk  
2019 23 – 27 June, **Efficient ultrafast THz modulators based on negative photoconductivity in controllably doped carbon nanotubes**. CLEO/EUROPE-EQEC 2019, Munich, Germany -Poster (Presented by Maurizio Monti)  
2019 9 – 10 April, **Negative photoconductivity in controllably doped carbon nanotubes for efficient ultrafast THz modulator**. THz symposium at(Photonic & OptoElectronic Materials (POEM-2019) conference, London, UK -Talk, (Presented by James Lloyd-Hughes)  
2019 10-15 March , **Giant negative photoconductivity in controllably-doped carbon nanotube Networks**.

- Optical Terahertz Science and Technology (OTST 2019), New Mexico, USA – Poster (Presented by Maurizio Monti)
- 2019 9 – 16 March, **Ultrafast terahertz spectroscopy of gated and chemically doped carbon nanotubes** 34th International Winterschool on Electronic Properties of Novel Materials (IWEPNM), Kirchberg, Austria – Poster
- 2018 10 – 11 December, **Optical and Terahertz Properties of Carbon Nanotubes** “Warwick THz workshop - 2018”, Coventry, UK – Poster
- 2018 4 – 6 July, **Decreased Photoconductivity lifetime in p-type doped carbon nanotubes studied by optical pump terahertz probe spectroscopy** “Electron Microscopy and Analysis Group (EMAG). Applications of Electron Microscopy to Beam Sensitive Materials”, Coventry, UK – Poster
- 2018 3 July, **Decreased Photoconductivity lifetime in p-type doped carbon nanotubes studied by optical pump terahertz probe spectroscopy.** “Warwick Physics Day and EMAG Preamble”, Coventry, UK - Talk
- 2016 2-7 April, “Optical Terahertz Science and Technology (OTST 2017)”, London, UK
- 2015 **Photoluminescence and polariton dispersion law in terbium nitrate hydrate crystals.** 27-29 January, 8th Russian Conference “Irreversible Processes in Physics and Technology-2015” BMSTU, Moscow, Russia – Talk
- 2015 10 May, **Electromagnetic waves in optical fibers in a magnetic.** "Student Spring Conference - 2015" BMSTU, Moscow, Russia – Poster
- 2014 17 – 19 November, **Secondary radiation in capillary fibers doped with rare earth ions**"PhysMathTech-2014" BMSTU, Moscow, Russia – Poster
- 2014 10 May, **Photoluminescence and polariton dispersion in erbium nitrate hydrate.** "Student Spring Conference - 2014" BMSTU, Moscow, Russia – Poster

#### Publications:

- 2019 **Ionic liquid gated carbon nanotube saturable absorber for switchable pulse generation.** Yuriy Gladush, Aram A Mkrtchyan, Daria S Kopylova, Aleksey Ivanenko, Boris Nyushkov, Sergey Kobtsev, Alexey Kokhanovskiy, Alexander Khegai, Mikhail Melkumov, **Maria Burdanova**, Michael Staniforth, James Lloyd-Hughes, Albert G Nasibulin, Nano letters, 19 (9).  
[DOI:10.1021/acs.nanolett.9b01012](https://doi.org/10.1021/acs.nanolett.9b01012)
- 2019 **Giant negative terahertz photoconductivity in controllably doped carbon nanotube networks.** **Maria G Burdanova**, Alexey P Tsapenko, Daria A Satco, Reza Kashtiban, Connor DW Mosley, Maurizio Monti, Michael Staniforth, Jeremy Sloan, Yuriy G Gladush, Albert G Nasibulin, James Lloyd-Hughes, ACS Photonics 2019641058-1066  
[DOI:10.1021/acsp Photonics.9b00138](https://doi.org/10.1021/acsp Photonics.9b00138)
- 2018 **Conduction properties of thin films from a water soluble carbon nanotube/hemicellulose complex.** Dongkai Shao, Peerapong Yotprayoosak, Ville Saunajoki, Markus Ahlskog, Jorma Virtanen, Veijo Kangas, Alexander Volodin, Chris Van Haesendonck, **Maria Burdanova**, Connor DW Mosley, James Lloyd-Hughes Nanotechnology 29 (14), 145203 145203.  
[DOI:10.1088/1361-6528/aaabd1](https://doi.org/10.1088/1361-6528/aaabd1)
- 2017 **Photoluminescence and polariton dispersion law in terbium nitrate hydrate crystals.** V.S. Gorelik, **M.G. Burdanova**, Journal of Physics Conference Series, 012029  
[DOI:10.1088/1742-6596/918/1/012029](https://doi.org/10.1088/1742-6596/918/1/012029)
- 2016 **Electromagnetic waves in optical fibers in a magnetic field.** V.S.Gorelik, **M.G. Burdanova**, Laser Physics 21, 035001.  
[DOI: 10.1088/1054-660X/26/3/035001](https://doi.org/10.1088/1054-660X/26/3/035001)
- 2015 **Electromagnetic waves in capillary fibers in a magnetic field.** V.S. Gorelik, **M. G. Burdanova**. Herald of the Bauman Moscow State Technical University. Series Natural Sciences, 5 (62)  
[DOI: 10.18698/1812-3368-2015-5-3-11](https://doi.org/10.18698/1812-3368-2015-5-3-11)
- 2015 **Polariton waves in capillary fibers doped with rare – earth ions.** **M. G. Burdanova**, V. S. Gorelik, Herald of the Bauman Moscow State Technical University. Series Natural Sciences, 6(63)  
[DOI: 10.18698/1812-3368-2015-6-46-51](https://doi.org/10.18698/1812-3368-2015-6-46-51)
- 2014 **Photoluminescence and polariton dispersion in erbium nitrate hydrate.** V. S. Gorelik, **M. G. Burdanova** Laser Physics 24, 125001  
[DOI: 10.1088/1054-660X/24/12/125001](https://doi.org/10.1088/1054-660X/24/12/125001)

#### Factual Summary

I am a fourth year PhD student with the keen interest in optical characterisation of nanomaterials. During my PhD project I had an opportunity to work with world leading scientists as Prof. Albert Nasibulin (Aalto University, Finland; Skolkovo Institute of Science and Technology, Russia), Prof. Shigeo Maruyama (The

University of Tokyo, Japan), Dr. Jeremy Sloan (University of Warwick, UK) and Dr. James Lloyd-Hughes (University of Warwick, UK). I have developed excellent experimental skills through my degree. I am now looking for further development and I would like to apply my skills in Nanoscience and Nanotechnology.