

# Sergei Gluchko

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## Education

- 2014–2017 **Ph.D, Thermal Nanosciences**, *EM2C, CentraleSupélec*, Gif-sur-Yvette, France.  
"Thermal Energy Manipulation via Electromagnetic Surface Waves at Micro- and Nanoscales". My doctoral research includes theoretical modeling, numerical simulations, samples fabrication, optical measurements, and data analysis. Ph.D. advisers Dr. Sebastian Volz and Dr. Thomas Antoni.
- 2013–2014 **Master of Physics, Nanoscience International Track**, *École Normale Supérieure de Cachan*, France.
- 2009–2013 **Bachelor, Physics**, *Belarusian State University*, Minsk, Belarus.

## Working Experience

- 2020–present **Postdoctoral research fellow**, *TONIQ, C2N, The University of Paris-Saclay*, Palaiseau, France.  
Infrared silicon nanophotonics : theoretical modeling, nanofabrication, and optical characterization.
- 2017–2019 **Postdoctoral research fellow**, *Nomura Lab., IIS, The University of Tokyo*, Tokyo, Japan.  
Nanoscale heat transport and nanotechnology : theoretical modeling, nanofabrication, characterization.
- 2014–2017 **Teaching assistant**, *LPE, CentraleSupélec*, Châtenay-Malabry, France.  
Superconductivity practical sessions.
- 2014 **M2 Internship**, *EM2C, CentraleSupélec*, Châtenay-Malabry, France.  
Theoretical and numerical study of Surface Phonon-Polaritons focusing along conical polar structures.
- 2013 **M1 Internship**, *Magnet Systems Department, Fermilab*, Batavia, IL, US.  
3D magnetic field experimental data analysis of particle accelerator (Mu2e Detector).
- 2009–2012 **Supervision**, *Lyceum of Belarusian State University*, Minsk, Belarus.  
Mentoring high school students for international physics conferences, tournaments and olympiads.

## Awards

- 2018 Postdoctoral scholarship of the JSPS.
- 2014 PhD scholarship of the ED579.
- 2013 ENS Cachan scholarship for international students.
- 2012 Third prize at 13th AYPT, Leoben, Austria.
- 2009 Golden award at 16th ICYS, Pszczyna, Poland ; Third prize at 22nd IYPT, Tianjin, China.

## Skills

- Experimental Fourier Transform InfraRed Spectrometry (FTIR), Time-Domain ThermoReflectance (TDTR).  
Clean room ICP RIE, eb and uv lithography, thin films, VHF, MEMS fabrication, SEM, AFM.
- Numerical FEM, FDTD, MC, Molecular Dynamics, data visualisation.
- Programming PYTHON (Numpy, Scipy, Pandas, Matplotlib), WOLFRAM MATHEMATICA, MATLAB, C++.

## Languages

- Bilingual **Russian, Belarusian**  
Advanced **English (IELTS 8.0)**  
Basic **French**

## Interests

- Programming, photography
- Fitness, tennis, swimming
- Violin music player

## List of publications

- 2020 Y. Wu, J. Ordonez-Miranda, S. Gluchko, R. Anufriev, D. De Sousa Meneses, L. Del Campo, S. Volz, M. Nomura, Enhanced thermal conduction by surface phonon-polaritons, *Sci. Adv.*, **6** (40), eabb4461.
- 2020 R. Anufriev, S. Tachikawa, S. Gluchko, Y. Nakayama, T. Kawamura, and M. Nomura, Cross-plane thermal conductivity in amorphous Si/SiO<sub>2</sub> superlattices, *Appl. Phys. Lett.*, **117** (9), 093103.
- 2020 S. Auge, S. Gluchko, A.L. Fehrembach, E. Popov, T. Antoni, S. Pelloquin, A. Arnoult, G Maisons, A. Monmayrant, and O. Gauthier-Lafaye, Extended cavity quantum cascade laser with cavity resonator integrated grating filter, *Optics express*, **28**, 4801-4809
- 2019 X. Huang, S. Gluchko, R. Anufriev, S. Volz, and M. Nomura, Thermal Conductivity Reduction in Silicon Thin Film with Nanocones, *ACS Appl. Mater. Interfaces*, **11** (37), 34394-34398.
- 2019 R. Anufriev, S. Gluchko, S. Volz, and M. Nomura, Probing ballistic thermal conduction in segmented silicon nanowires, *Nanoscale*, **11** (28), 13407-13414.
- 2019 S. Gluchko, R. Anufriev, R. Yanagisawa, S. Volz, and M. Nomura, On the reduction and rectification of thermal conduction using phononic crystals with pacman-shaped holes, *Appl. Phys. Lett.*, **114**, 023102.
- 2019 R. Anufriev, S. Gluchko, R. Yanagisawa, S. Volz, and M. Nomura, Quasi-ballistic heat conduction due to Levy phonon flights in silicon nanowires, *ACS nano*, **12**, 11928-11935.
- 2018 S. Auge, S. Gluchko, A.L. Fehrembach, E. Popov, T. Antoni, S. Pelloquin, A. Arnoult, A. Monmayrant, and O. Gauthier-Lafaye, Mid-infrared cavity resonator integrated grating filters, *Optics express*, **26**, 27014-27020.
- 2017 S. Gluchko, B. Palpant, S. Volz, R. Braive, T. Antoni, Thermal Excitation of Broadband and Long-range Surface Waves on SiO<sub>2</sub> Submicron Film, *Appl. Phys. Lett.*, **110**, 263108.
- 2017 J. Ordonez-Miranda, Y. Ezzahri, J. Drevillon, K. Joulain, L. Tranchant, S. Gluchko, S. Volz, Polaritonic figure of merit of plane structures, *Optics express*, **25**, 25938-25950.
- 2015 J. Ordonez-Miranda, L. Tranchant, S. Gluchko, S. Volz, Energy transport of surface phonon polaritons propagating along a chain of spheroidal nanoparticles, *Phys. Rev. B* **92**, 115409.
- 2015 S. Gluchko, J. Ordonez-Miranda, L. Tranchant, T. Antoni, S. Volz, Focusing of surface phonon-polaritons along conical and wedge polar nanostructures, *J. Appl. Phys.* **118**, 064301.
- 2014 J. Ordonez-Miranda, L. Tranchant, S. Gluchko, T. Antoni, S. Volz, Fresnel-like formulas for the reflection and transmission of surface phonon-polaritons at a dielectric interface, *Phys. Rev. B* **90**, 155416.
- 2014 M. Buehler, S. Gluchko, M.L. Lopes, C. Orozco, M. Tartaglia, J. Tompkins, Mu<sub>2</sub>e magnetic measurement studies, *IEEE Trans. Appl. Supercond.* **24**, 1-4.