

# CURRICULUM VITAE



## A. Personal data and contacts

Family Name: Popruzhenko  
First Name: Sergei  
Patronic Name: Vasil'evich  
Date of birth: March 17, 1974  
Place of birth: Prokhladny, Soviet Union  
Citizenship: Russian Federation  
Languages: Russian (native), English (fluent), German (B1)  
Profession: Theoretical physics  
Current position: Department chair  
Theoretical Physics Department  
National Research Nuclear University  
Moscow Engineering Physics Institute  
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## B. Education and Employment History

**1981 – 1991** – primary and middle school, graduated with the gold medal  
**1991 – 1997** – student at the Moscow Engineering Physics Institute, specialization “Theoretical nuclear physics”, diploma with distinction  
**1997 – 2000** – PhD student at the Moscow Engineering Physics Institute, department for the Theoretical Physics Department, supervised by Prof., Dr.Sc. S.P. Goreslavsky  
**2000** – PhD thesis “Tunneling limit in the theory of above-threshold ionization and rescattering”  
**2000 – 2002** – researcher at the Theoretical Physics Department, Moscow Engineering Physics Institute  
**2002 – 2012** – associate professor at the Theoretical Physics Department, Moscow Engineering Physics Institute – National Research Nuclear University  
**2007 – 2008** – sabbatical at the Max Planck Institute for Nuclear Physics (Heidelberg, Germany), Theory Division, the group of Dr. Dieter Bauer  
**2011** – Dr.Sc. (habilitation) in theoretical physics, thesis “Nonperturbative methods in the theory of nonlinear ionization and generation of high harmonics in intense laser fields”  
**2012 – present** – professor at the Theoretical Physics Department, Moscow Engineering Physics Institute – National Research Nuclear University

**2017 – present** – leading scientist (external member) at the Physics Department, Voronezh State University, Russia

**2017 – 2018** – guest scientist at the Max Planck Institute for the Physics of complex Systems (Dresden, Germany), Finite Systems Division

**2019 – present** – leading scientist at the Theory Division, Prokhorov General Physics Institute RAS, Moscow, Russia

**2023 – present** – department chair, Theoretical Physics Department, Moscow Engineering Physics Institute – National Research Nuclear University

### **C. Community services**

**2010 – 2016** – Scientific Council Member of the Faculty for Experimental and Theoretical Physics at the Moscow Engineering Physics Institute – National Research Nuclear University

**2012 – 2016** – Member of the Dissertation Council on theoretical and solid state physics at the Moscow Engineering Physics Institute – National Research Nuclear University

**2016 – present** – Vice-Chair of the Dissertation Council on theoretical and solid state physics at the Moscow Engineering Physics Institute – National Research Nuclear University

**2005 – present** – reviewer for scientific journals including Physical Review (Letters and A), Journal of Physics B, Physics Letters A, Laser Physics, Journal of Experimental and Theoretical Physics and Optics Express

**2002 – 2015** – Program committee member and scientific secretary of the International MEPhI Summer School on Theoretical Physics

**2008** – Program committee member of the International Conference on Multiphoton processes (Heidelberg, 18-23 September 2008)

**2013 – 2015** – General committee member of the International Conference on Photon, Electron and Ion Collisions (ICPEAC)

**2017 – present** – Member of the Expert Board of the Russian Foundation for advancement of theoretical physics BASIS

**2017 – present** – Member of the Dissertation Council on theoretical physics at Voronezh State University

**2019 – present** – Board member of the European Group on Atomic Systems (EGAS)

**2020 – present** – Member of the Dissertation Council on theoretical physics at Prokhorov General Physics Institute RAS

## **D. Teaching experience (2002 - present)**

### **Lecture courses:**

- Interaction of intense radiation with matter
- Classical mechanics
- Classical electrodynamics
- Statistical physics
- Fluid dynamics
- Magnetohydrodynamics
- Kinetic theory of gases and plasmas

### **Seminars and exercises:**

- Classical mechanics
- Classical electrodynamics
- Statistical physics
- Fluid dynamics and magnetohydrodynamics
- Introduction in theoretical physics
- English for physicists

## **E. Research Field**

Interaction of intense laser fields with matter including

- Nonlinear ionization of atoms in intense laser fields
- Generation of high order harmonics
- Interaction of intense laser fields with nanoparticles and plasmas including ultrarelativistic laser plasma
- Radiation of charges in extreme external fields

## **F. Publications and citations**

Over 80 publications (including three topical reviews) in Journal of Experimental and Theoretical Physics, Journal of Physics B, New Journal of Physics, Physical Review (Letters and A), Physics Letters, Physics-USpekhi, Science and other journals.

CI about 2600, H=26 (according to the Web of Science database, October 2022).

## **G. Top 10 publications (most important, not necessarily most cited)**

1. S.V. Popruzhenko, P.A. Korneev, S.P. Goreslavski, W.Becker, Laser-induced Recollision Phenomena: Interference Resonances at Channel Closings, Phys. Rev. Lett. **89**, 023001 (2002).
2. S.V. Fomichev, S.V. Popruzhenko, D.F. Zaretsky and W. Becker, Laser-induced nonlinear excitation of collective electron motion in a cluster, J. Phys. B: At. Mol. Opt. Phys. **36**, 3817 (2003).

3. S.P. Goreslavski, G.G. Paulus, S.V. Popruzhenko and N.I. Shvetsov-Shilovski, Coulomb Asymmetry in Above-Threshold Ionization, *Phys. Rev. Lett.* **93**, 233002 (2004).
4. S.V. Popruzhenko, D. Bauer, Strong field approximation for systems with Coulomb interaction, *Journal of Modern Optics* **55**, 2573 (2008).
5. S.V. Popruzhenko, V.D. Mur, V.S. Popov and D. Bauer, Strong Field Ionization Rate for Arbitrary Laser Frequencies, *Phys. Rev. Lett.* **101**, 193003 (2008).
6. M. Ruggenthaler, S.V. Popruzhenko and D. Bauer, Recollision-induced plasmon excitation in strong laser fields, *Phys. Rev. A* **78**, 033413 (2008).
7. Tian-Min Yan, S.V. Popruzhenko, M.J.J. Vrakking, and D. Bauer, Low-Energy Structures in Strong Field Ionization Revealed by Quantum Orbits, *Phys. Rev. Lett.* **105**, 253002 (2010).
8. S.V. Popruzhenko, Keldysh theory of strong-field ionization: history, applications, difficulties and perspectives, *J. Phys. B: At. Mol. Opt. Phys.* **47**, 204001 (2014).
9. T.V. Liseykina, S.V. Popruzhenko and A. Macchi, Inverse Faraday Effect driven by the radiation reaction force, *New Journ. Phys.* **18**, 072001 (2016).
10. A. Palffy and S.V. Popruzhenko, Can Extreme Laser Fields Accelerate alpha-Decay of Nuclei?, *Phys. Rev. Lett.* **124**, 212505 (2020).