

CURRICULUM VITAE

1. Full name and date

Name: Vladimir Kalashnikov

Gender: Male

Date of writing CV: 19/01/2021

2. Date and place of birth, citizenship, current residence

Date and place of birth: 07/04/1965, Minsk (Belarus)

Citizenship: Belarus

Current residence: Italy, Rome, e-mail: vladimir.kalashnikov@uniroma1.it

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ORCID ID: 0000-0002-3435-2333

3. Education and degrees awarded

Docent at the Laser Technology Department, Belarussian National Technical University (Minsk, Belarus), 01/1997

Ph.D. degree in Physics and Mathematics (Laser Optics) with the thesis "Mode-locking efficiency of broadband solid-state lasers," Belarussian State University (Minsk, Belarus), 06/1992

Honours Bachelor in Physics and Mathematics (the qualification of "Physicist-Researcher" in the field of theoretical physics), Belarussian State University (Minsk, Belarus), 06/1989

4. Field

I have shown my knowledge in applied mathematics and theoretical physics, including chaos theory, spatial-temporal nonlinear and stochastic dynamics, soliton theory, laser-plasma physics, general relativity, and quantum cosmology. In all these fields, I combined numerical approaches with analytical ones. My main activity was connected closely with different photonics branches, especially with ultrafast nonlinear optics, laser physics, high-speed telecommunication, and the theory of dissipative solitons.

5. Linguistic skills

Native languages: Russian and Belarussian

Other languages: English; German

6. Current position

Current position: Marie-Curie Fellow since October 2019 in the framework of the European Union Horizon 2020 research and innovation program under the Marie Skłodowska-Curie Grant No. 713694 (MULTIPLY) at the Dipartimento di Ingegneria dell'Informazione, Elettronica e Telecomunicazioni, Sapienza Università di Roma (Italy).

7. Previous work experience

- Institute for Applied Physics Problems (Minsk, Belarus), August 1989 – June 1992, Junior Researcher at the Laboratory of Semiconductor Physics
- Institute for Applied Physics Problems (Minsk, Belarus), July 1992 – June 1993, Senior Researcher at the Laboratory of Semiconductor Physics
- International Laser Centre (Minsk, Belarus), July 1993 – December 1996, Scientific Secretary

- Institute for Laser- and Plasma Physics (Essen University, Germany), 1996, DAAD Fellow
- International Laser Centre (Minsk, Belarus), January 1997 – July 2001, Head of the Laser Optics Laboratory
- Belarussian University of Technology (Minsk, Belarus), January 1997 – July 2001, Docent at the Laser Technology Department
- Institute of Photonics, Vienna University of Technology (Austria), August 2001 – July 2003, Lise Meitner Fellow
- Institute of Photonics, Vienna University of Technology (Austria), August 2003 – September 2005, Research Fellow
- Institute of Semiconductor Physics, Siberian Branch of the Russian Academy of Sciences, October 2005 – March 2006, Austrian Scientific Society Fellow
- Institute of Photonics, Vienna University of Technology (Austria), April 2006 – August 2014, Senior Research Fellow
- Aston Institute of Photonic Technologies, Aston University (Birmingham, UK), September 2014 - September 2016, Senior Research Fellow
- Institute of Photonics, Vienna University of Technology (Austria), October 2016 – September 2019, Senior Research Fellow
- Dipartimento di Ingegneria dell'Informazione, Elettronica e Telecomunicazioni, Sapienza Università di Roma (Italy), since October 2019, Marie-Curie Fellow

8. Research funding as well as leadership and supervision

[1] 2001-2003 – two joined Lisa Meitner fellowship projects “Dynamics of Tunable Femtosecond Pulse Lasers” (Austrian FWF grants M611 and M688) (project manager).

[2] 2004 – 2005 – project “Hybrid quantum-well semiconductor saturable absorbers for a few optical pulse generation at 1.5 micrometers” funded by Austrian Science Society (grant MOEL 80) (project manager).

[3] 2005 – 2008 – project “Generation of IR-Supercontinuum by Solid-State Lasers” (Austrian FWF grant P17973) (principal investigator).

[4] 2008 – 2012 – project “Nonlinear Dynamics and Noises of the Chirped-Pulse Oscillators: from Visible to Mid-IR Ranges” (Austrian FWF grant P20293) (project manager).

[5] 2013 – 2018 – project “Noise in Optical Comb Sources” (Austrian FWF grant P24916) (principal investigator).

[6] 2014 – 2016 – European FP7 IAPP project “Green Initiative for Future Optical Networks” (principal investigator).

[7] 2019 – 2021 - European Union Horizon 2020 research and innovation program under the Marie Skłodowska-Curie Grant No. 713694 (MULTIPLY) “Mastering the spatiotemporal dissipative solitons” (project manager).

During my stay at the Institute of Photonics (Vienna University of Technology), I had a few months of academic visits at the Max Planck Institute of Quantum Optics (Garching, Germany) on Prof. Th. Hänsch and Prof. F. Krausz invitations, and the three-months research visit at the Norwegian University of Science and Technology (Trondheim, Norway) on Prof. I.T. Sorokina invitation.

I fulfilled the *advisory activity* in the framework of short-term contracts with Max Planck Institute of Quantum Optics, Ludwig Maximilian University of Munich, Institute of Automation and Electrometry (Siberian Branch of RAN, Russia), and AMPHOS GmbH (Germany).

I was the **supervisor** of diploma theses (equivalent to BSc) and *two postgraduate students*: Dr. F. Mejid (now at the Xinjiang University, China) and Dr. D. Krimer (now at the Institute for Theoretical Physics, Vienna University of Technology).

I have proven the **management and leadership skills** as well as the *ability to think independently*. The track of advised under- and postgraduate students, management of the research projects, and *five-year management* of the Laser Optics Laboratory included both theoretical and experimental groups at International Laser Centre (Minsk, Belarus) confirms these skills. The former research workers of the Laboratory (Dr. N. Zhavoronkov, now at the Max-Born-Institute, Berlin, Germany; Dr. D. Krimer, now at the Institute for Theoretical Physics, TU Vienna; and Dr. F Mejid, now at the Xinjiang University, China) are recognized, actively working and teaching specialists in the fields of laser optics and engineering as well as nonlinear physics and applied mathematics. Another former worker of the laboratory, - Dr. I. Poloyko, now at the Virtual Photonics Inc., - works actively as the developer of software for the optical communication networks.

The publication list reflects the level of my independent thinking and research effectiveness. I am author and co-author of 374 publications, including 206 articles in refereed journals, conference proceedings, and e-prints and 153 presentations at International Conferences and 15 chapters in books (*h-index* 25 from Google Scholar, <https://scholar.google.com/citations?user=hbDTzDYAAA&hl=en>). *In about 30% of these publications, I was a sole author or had one co-author*. Since 2001, I was an author and co-author of seven financed research projects and managed five from them. Four projects have a status of personal fellowships with the highest level of individual activity. Experts have highly appreciated the results obtained in the frameworks of completed projects. As the project director and principal investigator, I exercised the tenders and purchases of computer equipment, including the high-performance servers.

I developed the MATLAB/SciLab and COMSOL software for Amphos GmbH and VirtualPhotonics GmbH to model and optimize an ultrafast fiber laser generating energy-scalable pulses with maximum quality (fidelity) of compression, which was beta tested and approved.

9. Merits in teaching and pedagogical competence

During my stay at the Belarusian University of Technology (1996 – 2001), I gave lessons and workshops on quantum mechanics, applied mathematics, calculus, laser and nonlinear optics, ultrafast and semiconductor lasers, physical optics, fiber communications, and computer algebras. I developed the teaching modules concerning applied mathematics (including Maple, Mathematica, computer algebras, Matlab, C++, and Fortran workshops). Also, I was a faculty advisor of several undergraduate students (Bachelor degree) and two Ph.D. students during my teaching career at the Belarussian State University of Technology (length of teaching experience is six years, Docent position). I participated actively in supervising Ph.D. students working in external groups (without a formal status of academic advisor) in Austria, Germany, the UK, and Russia and was engaged in an active knowledge transfer involving students and young scientists (first of all, at Munich University, Norway University of Technology, Vienna University, Novosibirsk and Belarussian State Universities).

10. Academic merits

I am a member of the Optical Society of America and European Physical Society, and the reviewer of *Optics Express*, *Optics Letters*, *J. Opt. Soc. Am. B*, *Optics Commun.*, *Phys. Rev. A* and *E*, *Appl. Phys. B*, *Journal of Lightwave Technology*, *Physics D*, *Optical & Quantum Electronics*, *Nature Communications*, and *Scientific Reports*. I gave invited lectures concerning solitonics, nonlinear dynamics, and chaos at the Universities of Vienna, Munich, Sorbonne, and Crete. Also, I am the permanent section leader and lecturer at the International Conference on Nonlinear Analysis and Modeling (CHAOS).