ALEKSEI M. ZHELTIKOV, Ph.D.
Department of Physics and Astronomy, Inst. for Quantum Science and Engineering
Texas A&M University, College Station, TX 77843-4242
Telephone: (979) 458-7934; E-mail: zheltikov@physics.tamu.edu

Educational background

M.V. Lomonosov Moscow State University, Russia	Physics	Ph.D.	1990
M.V. Lomonosov Moscow State University, Russia	Physics	M.Sc.	1987

Employment history

2010-present,	Professor, Department of Physics and Astronomy, Texas A&M University
2000- present,	Professor, Department of Physics, M.V. Lomonosov Moscow State University, Russia
2013-2016,	Scientific Board Director, Russian Quantum Center
2009-present,	Head of Laboratory of Neurophotonics, Kurchatov Institute, Moscow, Russia
2012-present,	Group Leader, Russian Quantum Center, Skolkovo, Moscow Region
1998-2000,	Associate Professor, Department of Physics, M.V. Lomonosov Moscow State University, Russia
1992-1998,	Senior Researcher, Department of Physics, M.V. Lomonosov Moscow State University, Russia
1990-1992,	Researcher, Department of Physics, M.V. Lomonosov Moscow State University, Russia

Honors and Awards:

- I.V. Kurchatov Prize and Medal (2014)
- The Willis E**.** Lamb Award for Laser Science and Quantum Optics (2010)
- Shuvalov Prize for Research (2001)
- Russian Federation State Prize for Young Researcher (1997).

Visiting professorship:

Friedrich Schiller University of Jena, Germany	Guest Professor	2011 – 2012
Vienna University of Technology, Austria	Guest Professor	2008 – 2009
Max Planck Institute for Quantum Optics, Garching, Germany	Guest Scientist	2006 – 2007
Heriot–Watt University, Edinburgh, Scotland, UK	Distinguished visitor	2007

Professional service

- Topic subcommittee chair, CLEO-Europe, Munich, Germany (June 2009, June 2011)
- Chair, Conference on Nanobiophotonics, Nizhny Novgorod, Russia (July 2007, July 2009)
- Topic subcommittee chair, International Conference on Quantum Electronics (IQEC), Moscow, 2002
- Topic subcommittee chair, International Conference on Coherent and Nonlinear Optics (ICONO), 2014-present
- Chair, SPIE Conference on Nonlinear Optics and Applications, Prague, 2009 – present
- Chair, Seminar on Nonlinear Optics and Spectroscopy, Bratislava (July 2002), Hamburg (July 2003), Kyoto (July 2004), Trieste (July 2005)
- Co-Director, Summer School on Ultrafast Photonics, St. Andrews, UK (Sept. 2002)
- Editorial Board Member for *Scientific Reports*, *Physics Uspekhi*, *Journal of Raman Spectroscopy*, *Laser Physics Letters*, *Laser Physics*

Recent Publications

1. E.A. Stepanov, A.A. Lanin, A.A. Voronin, A.B. Fedotov, and A.M. Zheltikov, "Solid-State Source of Subcycle Pulses in the Midinfrared," Phys. Rev. Lett. **117,** 043901 (2016).

2. 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, and A. M. Zheltikov, "Subterawatt few-cycle mid-infrared pulses from a single filament," Optica **3**, 299-302 (2016).

3. A.M. Zheltikov, A.A. Voronin, M. Kitzler, A. Baltuška, and M. Ivanov, Optical Detection of Interfering Pathways in Subfemtosecond Multielectron Dynamics, Phys. Rev. Lett. **103**, 033901 (2009).

4. A.M. Zheltikov, A.A. Voronin, R. Kienberger, F. Krausz, and G. Korn, Frequency-Tunable Multigigawatt Sub-Half-Cycle Light Pulses from Coupled-State Dynamics of Optical Solitons and Impulsively Driven Molecular Vibrations. Phys. Rev. Lett., v. 105, p.103901(1-4) (2010).

5. E.E. Serebryannikov and A. M. Zheltikov, “Strong-Field Photoionization as Excited-State Tunneling,” Phys. Rev. Lett. **116**, 123901 (2016)

6. E.E. Serebryannikov and A. M. Zheltikov, “Quantum and Semiclassical Physics behind Ultrafast Optical Nonlinearity in the Midinfrared: The Role of Ionization Dynamics within the Field Half Cycle,” Phys. Rev. Lett. **113**, 043901 (2014)

7. P.A. Zhokhov and A.M. Zheltikov “Attosecond Shock Waves,” Physical Review Letterrs **110**, 183903 (2013).

8. P.A. Zhokhov and A.M. Zheltikov, “Field-Cycle-Resolved Photoionization in Solids,” Phys. Rev. Lett. **113**, 133903 (2014).

9. M.Th. Hassan, T. T. Luu, A. Moulet, O. Raskazovskaya, P. Zhokhov, M. Garg, N. Karpowicz, A.M. Zheltikov, V. Pervak, F. Krausz, and E. Goulielmakis, “Optical attosecond pulses and tracking the nonlinear response of bound electrons,” Nature **530**, 66-70 (2016).

10. T. Balciunas, C.F. Dutin, G. Fan, T. Witting, A.A. Voronin, *A.M. Zheltikov*, G. Frédéric, G.G. Paulus, A. Baltuska, and F. Benabid, " Sub-Cycle Gigawatt Peak Power Pulses Self-Compressed by Optical Shock Waves," Nature Communications, **6**, 6117 (2015).

11. A.J. Verhoef, A.V. Mitrofanov, E.E. Serebryannikov, D.V. Kartashov, A.M. Zheltikov, and A. Baltuska, Optical Detection of Tunneling Ionization. Phys. Rev. Lett., v.104, p.163904(1-4) (2010).

12. F. Reiter, U. Graf, E.E. Serebryannikov, W. Schweinberger, M. Fiess, M. Schultze., A.M. Azzeer, R. Kienberger, F. Krausz, A.M. Zheltikov, and E. Goulielmakis, Route to Attosecond Nonlinear Spectroscopy. Phys. Rev. Lett., v.105, 243902 (2010)

13. A.V. Mitrofanov, A.J. Verhoef, E.E. Serebryannikov, J. Lumeau, L. Glebov, A.M. Zheltikov and A. Baltuska, “Optical Detection of Attosecond Ionization Induced by a Few-Cycle Laser Field in a Transparent Dielectric Material,” Phys. Rev. Lett **106**, 147401 (2011).

14. A.M. Zheltikov, The Friendly Gas Phase, Nature Materials, **4**, 265 (2005).

15. A.M. Zheltikov, "The Raman effect in femto- and attosecond physics" Phys. Usp. **54** 29–51 (2011).

16. L.V. Doronina-Amitonova, I.V. Fedotov, O. I. Ivashkina, M.A. Zots, A.B. Fedotov, K.V. Anokhin, and A.M. Zheltikov, “Implantable fiber-optic interface for parallel multisite long-term optical dynamic brain interrogation in freely moving mice,” Scientific Reports **3**, 3265 (2013).

17. L.V. Doronina-Amitonova, I.V. Fedotov, A.B. Fedotov, K.V. Anokhin, and A.M. Zheltikov, “Neurophotonics: optical methods to study and control the brain,” Phys. Uspekhi **58,** 345–364 (2015)

18. I.V. Fedotov, N.A. Safronov, Yu.G. Ermakova, M.E. Matlashov, D.A. Sidorov-Biryukov, A.B. Fedotov, V.V. Belousov, and A.M. Zheltikov, “Fiber-optic control and thermometry of single-cell thermosensation logic,” Scientific Reports 5, 15737 (2015).

19. A.A. Lanin, A.A. Voronin, E.A. Stepanov, A.B. Fedotov, and A.M. Zheltikov, “Multioctave, 3–18 μm sub-two-cycle supercontinua from self-compressing, self-focusing soliton transients in a solid,” Optics Letters 40, 974–977 (2015).

20. A.V. Mitrofanov, A.A. Voronin, D.A. Sidorov-Biryukov, A. Pugžlys, E.A. Stepanov, G. Andriukaitis, S. Ališauskas, T. Flöry, A.B. Fedotov, A. Baltuška, and A.M. Zheltikov, "Mid-infrared laser filaments in the atmosphere". Scientific Reports 5, 8368 (2015).

21. S.M. Blakley, I.V. Fedotov, S.Ya. Kilin, and A.M. Zheltikov, "Room-temperature magnetic gradiometry with fiber-coupled nitrogen-vacancy centers in diamond," Optics Letters 40, 3727-3730 (2015).

22. S.M. Blakley, I. V. Fedotov, L. V. Amitonova, E. E. Serebryannikov, H. Perez, S. Ya. Kilin, and A. M. Zheltikov, “Fiber-optic vectorial magnetic-field gradiometry by a spatiotemporal differential optical detection of magnetic resonance in nitrogen–vacancy centers in diamond,” Opt. Lett. **41**, 2057-2060 (2016)

Ph.D. Graduate Students Advisees: A.B. Fedotov (PhD 1994), D.A. Sidorov-Biryukov (PhD 1997), A.N. Naumov (PhD 1999), D.A. Akimov (PhD 2000), A.V. Tarasishin (PhD 2001), S.O. Konorov (PhD 2005), E.E. Serebryannikov (PhD 2010), A.A. Voronin (PhD, 20013), L.V. Doronina-Amitonova (2013), P.A. Zhokhov (PhD 2015), S. Blakley (2011-), D.V. Meshchankin (2012-), M.S. Pochechuev (2015-)