

# Alexander Zhuravel

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## Biography

born November 11, 1953  
1977 M.S. in aircraft engines design. National Aerospace University– Kharkiv Aviation Institute  
1990: Ph.D. in physics. B.Verkin Institute for Low Temperature Physics & Engineering, NASU  
2008 Diploma of NATO Advanced Study Institute in Laser Control & Monitoring in New Materials, Biomedicine, Environment, Security & Defense, University of Ottawa, Canada

## Positions

Since 1994 Senior researcher scientist. B.Verkin Institute for Low Temperature Physics & Engineering, NASU  
1992-1994 Research associate. B.Verkin Institute for Low Temperature Physics & Engineering, NASU  
1991-1992 Leader engineer. B.Verkin Institute for Low Temperature Physics & Engineering, NASU  
1983-1991 Senior engineer. B.Verkin Institute for Low Temperature Physics & Engineering, NASU  
1981 -1983 Serviceman. USSR army  
1977 - 1981 Engineer. B.Verkin Institute for Low Temperature Physics & Engineering, NASU

## Research visits

Apr.1994-May 1994 University of Twente. The Netherlands  
1997-2008 from 2 to 5 months/year. University of Erlangen-Nürnberg, Germany  
Jun.1998 - Jul.1998 University of Maryland, USA  
Apr. 2000-May2000 Technical University of Denmark, Denmark  
Sept.2010-Oct.2010 University of Maryland, USA  
2009 - present 2 months/year. Karlsruhe Institute of Technology, Germany

## Scientific interests

Superconductivity, optics, cryogenics, Laser Scanning Microscopy, properties of superconducting materials, metamaterials and microelectronic devices under microwaves, mm- and sub-mm

## Funding

Four consulting agreements with Center for Superconductivity Research (CSR) at the University of Maryland, contractor of four NASU programs on Nanostructures, Materials, and Technologies, recipient of one grants of German Science Foundation (DFG), two

grants from German Ministry of Science and Education (BMBF), one Expert Visits grant (NATO), one Collaborative Linkage Grant (NATO), and one scientific grant funded by the Volkswagen Foundation.

## **Publications**

Over 70 papers in refereed journals. In total over 600 citations, h-index 14 (Harzing's Publish or Perish ).

## **Referee**

Referee in IEEE Transactions on Applied Superconductivity, Low Temperature Physics Journal.

## **Membership:**

Member of the Ukraine Physical Society

## **Languages**

English, Ukrainian, Russian

## **Selected publications**

1. A.S. Averkin; A.P. Zhuravel ; P. Jung ; N. Maleeva ; V.P. Koshelets; L.V. Filippenko ; A. Karpov ; A.V. Ustinov. Imaging Coherent Response of Superconducting Metasurface, IEEE Transact. Appl. Supercond. 26, 1800403 (2016);
2. N. Maleeva, A. Averkin, N.N. Abramov, M.V. Fistul, A. Karpov, A.P. Zhuravel, and A.V. Ustinov. Electrodynamics of planar Archimedean spiral resonator, J. Appl. Phys. 118, 033902 (2015);
3. A.P. Zhuravel, B.G. Ghamsari, C. Kurter, P. Jung, S. Remillard, J. Abrahams, A.V. Lukashenko, A.V. Ustinov, and S.M. Anlage. Imaging the Anisotropic Nonlinear Meissner Effect in Nodal  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  Thin-Film Superconductors, Phys. Rev. Lett. 110, 087002 (2013);
4. B.G. Ghamsari; J. Tosado; A.P. Zhuravel; , M. Yamamoto; D.R. Lenski; Ping Jinglei; M.S. Fuhrer; S.M. Anlage. Measuring the thickness of few-layer graphene by laser scanning microscopy, Special issue of the IEEE Transact. Instrumentation and Measurement, 456 (2012);
5. A.P. Zhuravel, C. Kurter, A.V. Ustinov, and S.M. Anlage. Unconventional rf photoresponse from a superconducting spiral resonator, Phys. Rev. B 85, 134535 (2012);
6. C. Kurter, Ph. Tassin, A.P. Zhuravel, L. Zhang, T. Koschny, A.V. Ustinov, C.M. Soukoulis, and S.M. Anlage. Switching nonlinearity in a superconductor-enhanced metamaterial, Appl. Phys. Lett. 100, 121906 (2012);
7. C. Kurter, A.P. Zhuravel, A.V. Ustinov, and S.M. Anlage, Microscopic examination of hot spots giving rise to nonlinearity in superconducting resonators, Phys. Rev. B 84, 104515 (2011);
8. C. Kurter, Ph. Tassin, L. Zhang, T. Koschny, A.P. Zhuravel, A.V. Ustinov, S.M. Anlage, and C.M. Soukoulis. Classical Analogue of Electromagnetically Induced Transparency with a Metal-Superconductor Hybrid Metamaterial. Phys. Rev. Lett. 107, 043901 (2011);
9. E. Hoffmann, F. Deppe, T. Niemczyk, T. Wirth, E.P. Menzel, G. Wild, H. Hübl, M. Mariani, T. Weissl, A. Lukashenko, A.P. Zhuravel, A.V. Ustinov, A. Marx, and R. Gross. A Superconducting  $180^\circ$  Hybrid Ring Coupler for circuit Quantum Electrodynamics, Appl. Phys. Lett. 97, 222508 (2010);
10. A.P. Zhuravel, S.M. Anlage, S.K. Remillard, A.V. Lukashenko, and A.V. Ustinov. Effect of  $\text{LaAlO}_3$  Twin-Domain Topology on Local DC and Microwave Properties of Cuprate Films, J. Appl. Phys. 108, 033920 (2010);
11. D. Abramov, D.M. Feldmann, A.A. Polyanskii, A. Gurevich, G. Daniels, D.C. Larbalestier, A.P. Zhuravel, and A.V. Ustinov. Scanning laser imaging of dissipation in  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ -coated conductors, Appl. Phys. Lett., 85, 2568 (2004);
12. A.P. Zhuravel, S.M. Anlage, S.K. Remillard, and A.V. Ustinov.

Spatial Correlation of Linear and Nonlinear Electron Transport in a Superconducting microwave Resonator: LASER SCANNING MICROSCOPY ANALYSIS“, in Book:”MSMW’07 Symposium Proceedings. 1, 404 (2007);

13. D. Abraimov, D.M. Feldmann, A.A. Polyanskii, A. Gurevich, S. Liao, G. Daniels, D.C. Larbalestier, A.P. Zhuravel, and A.V. Ustinov. Imaging Local Dissipation and Magnetic Field in YBCO Films With Artificial Defects, IEEE Transact. Appl. Supercond., 15, 2954 (2005);

14. A.P. Zhuravel, S.M. Anlage, A.V. Ustinov. Microwave Current Imaging in Passive HTS Microwave Components by Low-Temperature Laser Scanning Microscopy (LTLSM), J. Supercond. Novel Magn. 19, 625 (2006);

15. A.P. Zhuravel, S.M. Anlage, A.V. Ustinov. Measurement of local reactive and resistive photoresponse of a superconducting microwave device, Appl. Phys. Lett. 88, 212503 (2006);

16. A.P. Zhuravel, A.G. Sivakov, O.G. Turutanov, A.N. Omelyanchouk, S.M. Anlage, A. Lukashenko, A.V. Ustinov, D. Abraimov. Laser scanning microscopy of HTS films and devices (Review Article), Low Temp. Phys. 32, 592 (2006);

17. A. Lukashenko, A. Ustinov A.P. Zhuravel, E. Hollmann, R. Würdenweber. Laser scanning microscopy of guided vortex flow in microstructured high-T<sub>c</sub>-films, J. Appl. Phys. 100, 023913 (2006));

18. M.C. Ricci, H. Xu, R. Prozorov, A.P. Zhuravel, A.V. Ustinov, S.M. Anlage, “Tunability of Superconducting Metamaterials”, IEEE Transact. Appl. Supercond. 17, 918 (2007);

19. A. P. Zhuravel, S.M. Anlage, and A.V. Ustinov. Imaging of Microscopic Sources of Resistive and Reactive Nonlinearities in Superconducting Microwave Devices, IEEE Transact. Appl. Supercond. 17, (2007);

20. M. Schuster, D. Abraimov, A.P. Zhuravel and A.V. Ustinov. Experiments on resonant rotobreathers in Josephson ladders, Localization and Energy Transfer in Nonlinear Systems, World Scientific, 344 (2003);

21. S.M. Anlage, A.S. Thanawalla, A.P. Zhuravel, W. Hu, C.P. Vlahacos, D.E. Steinhauer, S.K. Dutta, and F.C. Wellstood. Near-field scanning microwave microscopy of superconducting materials and devices, Advances in Superconductivity XI, 1079 (1999);

22. A.P. Zhuravel, A.G. Sivakov, O.G. Turutanov, I.M. Dmitrenko. A Low Temperature System with a Pulse UV Laser for Scribing HTSC Films and Single Crystals. Appl. Surf. Science 106, 321 (1996);

23. A.P. Zhuravel, A.G. Sivakov, O.G. Turutanov, I.M. Dmitrenko, K. Joosse, G.J. Gerritsma, H. Rogalla. Photoresponse of epitaxial YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7-x</sub> ultrathin films, Cryogenics, 34, 875 (1994);

24. I.M. Dmitrenko, P.A. Grib, A.G. Sivakov, O.G. Turutanov, and A.P. Zhuravel'. A study of spatial distribution of critical currents in high-T<sub>c</sub> films by the laser scanning microscopy method, Low Temp. Phys. 19, 259 (1993);

25. B.B. Banduryan, V.G. Efremenko, I.M. Dmitrenko, A.P. Zhuravel, S.V. Gaponov, A.Yu.Klimov, D.G. Pavel'ev, Yu Churin. Studies of Spatial Distribution of Superconducting Parameters of HTS Structures by The Laser Probe Method, Sov.Fizika Nizkikh temperatur, 64, (1990);

26. V.N. Svetlov, G.E. Churilov, V.M. Dmitriev, A.P. Zhuravel', and V.A. Konovodchenko. Visualization of resistive regions and active zones in narrow channels under non-Josephson generation conditions, Sov. J. Low Temp. Phys. 14, 14 (1988)];

27. V.A. Konovodchenko, A.G. Sivakov, A.P. Zhuravel, V.G. Efremenko, and B.B. Banduryan. Study of Resistive State of Film Superconductors by the Laser-probe Method, Cryogenics.26, 531-535, (1986).