

Dr. ALEXANDER G. SIVAKOV

47 Nauky Ave., Kharkiv, 61103, Ukraine
e-mail: sivakov@ilt.kharkov.ua, phone:+38-057-341-09-07

EDUCATION

PhD in Physics, B. Verkin Institute for Low Temperature Physics and Engineering, **1986**
National Academy of Sciences of Ukraine, Kharkiv, Ukraine. Thesis: “Resistive states of wide superconducting films”

MSc in Physics, Kharkiv Polytechnical Institute, Kharkiv, Ukraine. Thesis: **1971**
“Superconducting properties of low-vacuum condensates of aluminium”

CURRENT POSITION

Senior Researcher at Department of superconducting and mesoscopic structures, B. Verkin Institute for Low Temperature Physics and Engineering, National Academy of Sciences of Ukraine, Kharkiv, Ukraine (since 1991).

RESEARCH EXPERIENCE

B. Verkin Institute for Low Temperature Physics and Engineering, National Academy of Sciences of Ukraine, Kharkiv, Ukraine. **Researcher**. 1987-1991

B. Verkin Institute for Low Temperature Physics and Engineering, National Academy of Sciences of Ukraine, Kharkiv, Ukraine. **Senior Engineer**. 1980-1987

B. Verkin Institute for Low Temperature Physics and Engineering, National Academy of Sciences of Ukraine, Kharkiv, Ukraine. **Engineer**. 1976-1980

SCIENTIFIC INTERESTS

Non-equilibrium phenomena in the resistive states of superconductors; mechanisms of resistivity in superconductors; development of low temperature scanning laser microscopy technique for the spatially resolved studies of resistive state in superconductors, superconducting radiation detectors.

GRANTS AND AWARDS

State Prize of Ukraine in Science and Technology 2000
A number of research projects received funding from BMBF, DFG and Siemens 1999-2005

PEER-REVIEWED SCIENTIFIC PUBLICATIONS

1. **Characterization of MoSi superconducting single-photon detectors in the magnetic field**, A.A. Korneev, Y.P. Korneeva, M.Yu. Mikhailov, Y.P. Pershin, A.V. Semenov, D.Yu. Vodolazov, A.V. Divochiy, Y.B. Vakhtomin, K.V. Smirnov, A.G. Sivakov, A.Yu. Devizenko, G.N. Goltsman, *IEEE Transactions on Applied Superconductivity*, v 25, n 3, pt.1, p 2200504, 2015.
2. **Superconducting single-photon detector made of MoSi film**, Yu.P. Korneeva, M.Yu. Mikhailov, Yu.P. Pershin, N.N. Manova, A.V. Divochiy, Yu.B. Vakhtomin, A.A. Korneev, K.V. Smirnov, A.G. Sivakov, A.Yu. Devizenko, G.N. Goltsman, *Superconductor Science and Technology*, v 27, n 9, p 095012, 2014.

3. **Oscillations of the critical superconducting current of thin doubly-connected Sn films in an external perpendicular magnetic field**, A.G. Sivakov, A.S. Pokhila, A.M. Glukhov, S.V. Kuplevakhsky, A.N. Omelyanchouk, *Low Temperature Physics*, 40, 408, 2014.
4. **Averaged effective pinning potential in YBCO single crystals near T_c** , V.Yu. Monarkha, A.G. Sivakov, V.P. Timofeev, *Low Temperature Physics*, 40, 861, 2014.
5. **Investigations of superconductivity in MgB_2 bulk and Fe/MgB_2 wires**, I.F. Kislyak, M.A. Tikhonovsky, D.G. Malykhin, T.Y. Rudycheva, V.G. Yarovoy, A.A. Blinkin, V.V. Derevyanko, S.Y. Sayenko, G.A. Kholomeyev, A.G. Sivakov, A.S. Pokhila, O.G. Turutanov, *Problems of Atomic Science and Technology*, Issue 6, p. 107, 2009.
6. **Laser scanning microscopy of HTS films and devices (review article)**, A.P. Zhuravel, A.G. Sivakov, O.G. Turutanov, A.N. Omelyanchouk, S.M. Anlage, A. Lukashenko, A.V. Ustinov, D. Abraimov, *Low Temperature Physics*, 32, 592, 2006
7. **Josephson behavior of phase-slip lines in wide superconducting strips**, A.G. Sivakov, A.M. Glukhov, A.N. Omelyanchouk, Y. Koval, P. Muller, A.V. Ustinov, *Physical Review Letters*, v 91, n 26, p 267001, 2003.
8. **Observation of stochastic resonance in percolative Josephson media**, A.M. Glukhov, A.G. Sivakov, A.V. Ustinov, *Low Temperature Physics*, v 28, n 6, p 383, 2002.
9. **Influence of twin boundaries on the phase state and vortex dynamics near the melting point in $YBa_2Cu_3O_{7-\delta}$ single crystals**, A.V. Bondarenko, A.A. Prodan, M.A. Obolenskii, A.G. Sivakov, *Low Temperature Physics*, v 27, n 8, p 683, 2001.
10. **Spatially resolved measurements of critical parameters in superconducting filaments by laser scanning technique**, D. Abraimov, A.G. Sivakov, A.V. Lukashenko, M.V. Fistul, P. Muller, A.V. Ustinov, *IEEE Transactions on Applied Superconductivity*, 11, n 1, pt.3, p 3170, 2001.
11. **Spatial distribution of critical current and supercurrent density in individual filaments extracted from Ag-sheathed Bi-2223 tapes**, A.G. Sivakov, A.V. Lukashenko, O.G. Turutanov, I.M. Dmitrenko, D.V. Abraimov, P. Muller, A.V. Ustinov, *Physica B*, v 284-288, p 2071, 2000.
12. **Low-temperature scanning laser microscopy of individual filaments extracted from $(Bi, Pb)_2Sr_2Ca_2Cu_3O_{10+x}$ tapes**, A.G. Sivakov, A.V. Lukashenko, D. Abraimov, P. Muller, A.V. Ustinov, M. Leghissa, *Applied Physics Letters*, v 76, n 18, p 2597, 2000.
13. **Low temperature scanning laser microscope for studies in high magnetic fields**, A.P. Zhuravel', A.G. Sivakov, A.V. Lukashenko, I.M. Dmitrenko, *Czechoslovak Journal of Physics*, v 46, suppl., pt.S5, p 2845, 1996.
14. **Laser scanning visualization of evolution of vortex instability in current-carrying superconducting strips**, A.G. Sivakov, A.P. Zhuravel, O.G. Turutanov, I.M. Dmitrenko, *Czechoslovak Journal of Physics*, v 46, suppl., pt.S2, p 877, 1996.
15. **Spatially resolved study of transition to the phase-slip lines resistive state in wide superconducting strips**, A.P. Zhuravel', A.G. Sivakov, O.G. Turutanov, I.M. Dmitrenko, *Czechoslovak Journal of Physics*, v 46, suppl., pt.S2, p 643, 1996.
16. **Spatial distribution of superconducting parameters and peculiarities in the behavior of thin-film high- T_c Josephson junction arrays**, A.V. Lukashenko, A.G. Sivakov, A.P. Zhuravel', O.G. Turutanov, I.M. Dmitrenko, *Low Temperature Physics*, v 22, n 10, p 850, 1996.
17. **A low temperature system with a pulse UV laser for scribing HTSC films and single crystals**, A.P. Zhuravel, A.G. Sivakov, O.G. Turutanov, I.M. Dmitrenko, *Applied Surface Science*, v 106, p 321, 1996.
18. **Spatially resolved characterization of superconducting films and cryoelectronic devices by means of low temperature scanning laser microscope**, A.G. Sivakov, A.P. Zhuravel', O.G. Turutanov, I.M. Dmitrenko, *Applied Surface Science*, v 106, p 390, 1996.
19. **Superconducting parameters and vortex dynamics in aluminum-doped $YBaCuO$ single crystals containing unidirectional twins**, M.A. Obolenskii, A.V. Bondarenko, V.A.

- Shklovskii, Mohamed El-Saadawy, R.V. Vovk, A.V. Samoilov, D. Niarchos, M. Pissas, G. Kallias, A.G. Sivakov, *Low Temperature Physics*, v 21, n 12, p 917, 1995.
20. **Phase state of vortex system and critical currents in YBaCuO single crystal with unidirectional twins in tilted magnetic fields**, A.V. Bondarenko, M.A. Obolenskii, R.V. Vovk, A.A. Prodan, V.A. Shklovskij, A.G. Sivakov, *Proc. 7th International Workshop on Critical Currents in Superconductors*, p 177, 1994.
 21. **Direct measurements of shear modulus and plastic flow of vortex lattice in YBaCuO single crystals**, A.V. Bondarenko, M.A. Obolenskii, R.V. Vovk, A.V. Samoylov, V.A. Shklovskij, A.G. Sivakov, *Proc. 7th International Workshop on Critical Currents in Superconductors*, p 193, 1994.
 22. **Photoresponse of epitaxial YBa₂Cu₃O_{7-x} ultrathin films**, A.P. Zhuravel, A.G. Sivakov, O.G. Turutanov, I.M. Dmitrenko, K. Joosse, G.J. Gerritsma, H. Rogalla, *Cryogenics*, v 34, suppl.issue, p 875, 1994.
 23. **Direct measurement of critical currents of individual weak links in DC interferometer by scanning laser microscope**, A.V. Lukashenko, A.G. Sivakov, O.G. Turutanov, I.M. Dmitrenko, I.N. Chukanova, *Cryogenics*, v 34, suppl.issue, p 879, 1994.
 24. **Laser scanning imaging and local characterization of superconducting properties in high-T_c thin film multiturn coil**, A.G. Sivakov, A.P. Zhuravel, O.G. Turutanov, I.M. Dmitrenko, J.W.M. Hilgenkamp, G.C.S. Brons, J. Flokstra, H. Rogalla, *Physica C*, v 232, n 1-2, p 93, 1994.
 25. **Electric-field effect devices made of YBa₂Cu₃O_{7-x}/SrTiO₃ epitaxial multilayers**, K. Joosse, Yu.M. Boguslavskij, G.J. Gerritsma, H. Rogalla, J.G. Wen, A.G. Sivakov, *Physica C*, v 224, n 1-2, p 179, 1994.
 26. **Quasiparticle injection effects in YBa₂Cu₃O_x-based planar structures at high operating temperatures**, Yu.M. Boguslavskij, K. Joosse, A.G. Sivakov, F.J.G. Roesthuis, G.J. Gerritsma, H. Rogalla, *Physica C*, v 220, n 1-2, p 195, 1994.
 27. **Spatial selection of bolometric and nonbolometric response by scanning laser probe technique**, I.M. Dmitrenko, A.P. Zhuravel', A.G. Sivakov, O.G. Turutanov, I.N. Chukanova, *Fizika Nizkikh Temperatur*, v 19, n 10, p 1055, 1993.
 28. **Low-temperature laser scanning microscopy studies of the critical current spatial distribution in high-T_c superconducting films**, I.M. Dmitrenko, P.A. Grib, A.G. Sivakov, O.G. Turutanov, A.P. Zhuravel, *Fizika Nizkikh Temperatur*, v 19, n 4, p 369, 1993.
 29. **Spatial variation studies of N-S boundary resistive response by laser scanning**, I.M. Dmitrenko, A.P. Zhuravel, A.G. Sivakov, *Fizika Nizkikh Temperatur*, v 18, n 9, p 962, 1992.
 30. **Experimental observation of the interaction of the phase-slip lines in wide superconducting films by means of a laser scanning microscope**, A.G. Sivakov, A.P. Zhuravel, I.M. Dmitrenko, V.G. Volotskaykava, O.A. Koretskaya, *Superconductivity: Physics, Chemistry, Technology*, v 5, n 9, p 1680, 1992.
 31. **Effect of microwave radiation on wide bridges made from epitaxial YBa₂Cu₃O_{7-x} films**, E.M. Rudenko, I.V. Korotash, I.P. Nevirkovets, Yu.M. Boguslavskii, P.A. Zhukov, A.G. Sivakov, *Superconductivity: Physics, Chemistry, Technology*, v 4, n 6, p 1061, June 1991.
 32. **Stimulation of critical current and vortices movement in wide microbridges based on epitaxial YBCO films**, E.M. Rudenko, I.V. Korotash, I.P. Nevirkovets, Yu.M. Boguslavskii, P.A. Zhukov, A.G. Sivakov, *Superconductor Science & Technology*, v 4, n 1, p 1, 1991.
 33. **Investigation of the spatial distribution of film superconducting parameters by laser scanning**, I.M. Dmitrenko, P.A. Grib, A.G. Sivakov, O.G. Turutanov, V.G. Volotskaya, A.P. Zhuravel, *Weak Superconductivity*, p 81, 1990.
 34. **Isothermal current transition from superconducting to normal state in thin tin films**, A.G. Sivakov, O.G. Turutanov, I.M. Dmitrenko, V.G. Volotskaya, *Fizika Nizkikh Temperatur*, v 15, n 6, p 587, 1989.
 35. **Resistive transitions at magnetic field and critical field anisotropy in metal-oxide compounds**, I.M. Dmitrenko, A.M. Glukhov, A.S. Zaika, A.S. Pokhila, A.G. Sivakov, M.Ya.

- Fenster, N.Ya. Fogel', I.S. Braude, Yu.A. Pokhil, *Fizika Nizkikh Temperatur*, v 14, n 10, p 1045, 1988.
36. **Visualization of resistive states of superconducting films**, V.A. Konovodchenko, A.G. Sivakov, A.P. Zhuravel, V.G. Efremenko, B.B. Banduryan, *Cryogenics*, v 26, n 10, p 531, 1986.
 37. **Excessive current in wide superconducting films**, V.G. Volotskaya, A.G. Sivakov, O.G. Turutanov, *Fizika Nizkikh Temperatur*, v 12, n 9, p 934, 1986.
 38. **Laser probing studies of resistive state in film superconductors**, V.A. Konovodchenko, A.G. Sivakov, A.P. Zhuravel, V.G. Efremenko, B.B. Banduryan, *Fizika Nizkikh Temperatur*, v 12, n 5, p 548, 1986.
 39. **Vortex dynamics in charge imbalance region**, A.G. Sivakov, V.G. Volotskaya, *Fizika Nizkikh Temperatur*, v 11, n 5, p 547, 1985.
 40. **A new resistive state of wide superconductive films**, V.G. Volotskaya, I.M. Dmitrenko, A.G. Sivakov, *Fizika Nizkikh Temperatur*, v 10, n 4, p 347, 1984.
 41. **Voltage measurements on wide thin films in the vicinity of the phase slip line**, I.M. Dmitrenko, A.G. Sivakov, V.G. Volotskaya, *Fizika Nizkikh Temperatur*, v 9, n 9, p 994, 1983.
 42. **Studies of stress distribution in a film at the dynamic mixed state**, I.M. Dmitrenko, V.G. Volotskaya, A.G. Sivakov, *Fizika Nizkikh Temperatur*, v 9, n 2, p 151, 1983.
 43. **Non-equilibrium effects in dynamic mixed state of thin films**, I.M. Dmitrenko, V.G. Volotskaya, L.E. Musienko, A.G. Sivakov, *Physica B & C*, v 108B+C, n 1-3, p 783, 1981.
 44. **Superconducting properties and structure of low-vacuum aluminium condensates**, L.S. Palatnik, A.G. Sivakov, V.G. Volotskaya, I.Kh. Tartakovskaya, O.I. Kovaleva, *Fizika Nizkikh Temperatur*, v 7, n 6, p 721, 1981.
 45. **Current-induced superconductivity breakdown in wide films**, V.G. Volotskaya, I.M. Dmitrenko, L.E. Musienko, A.G. Sivakov, *Fizika Nizkikh Temperatur*, v 7, n 3, p 383, 1981.