

Curriculum vitae

Dr., Valentin P. Koverya



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Date of birth: August 16, 1981
Place of birth: Pesochin, Kharkiv Raion, Kharkiv Oblast, Ukraine
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Education:

- M.Sc. (Cryogenic Engineering and Technology), National Polytechnical University, Kharkiv, Ukraine, 2004, M.Sc. thesis: *“The study of the magnetic flux concentrator for a magnetic microscope”*, supervised by Dr. Sc. S.I. Bondarenko
- Postgraduate study (Superconductivity), B.I. Verkin Institute for Low Temperature Physics & Engineering NASU, Kharkiv, Ukraine, 2004-2007
- Ph.D. (Superconductivity), B.I. Verkin Institute for Low Temperature Physics & Engineering NASU, Kharkiv, Ukraine, 2013, PhD thesis: *“Local frozen magnetic field and current distribution in single- and double-connected superconductors”*, supervised by Dr. Sc. S.I. Bondarenko

Professional Career:

- Junior Researcher of Department of Superconducting and Mesoscopic Structures, B.I. Verkin Institute for Low Temperature Physics & Engineering NASU, Kharkiv, Ukraine, 2007 – 2015
- Researcher of Department of Superconducting and Mesoscopic Structures, B.I. Verkin Institute for Low Temperature Physics & Engineering NASU, Kharkiv, Ukraine, 2016 – 2023
- Senior Researcher of Department of Superconducting and Mesoscopic Structures, B.I. Verkin Institute for Low Temperature Physics & Engineering NASU, Kharkiv, Ukraine, 2023 – Present

Languages: Ukrainian, English, Russian.

Scientific visits:

Chongqing Center of Superconductive Science and Technology, Chongqing Academy of Science and Technology (Chongqing, China) 2015 (1 month).

Fields of Activity:

High temperature superconductivity, local frozen magnetic field in superconductor; current states of a doubly connected superconductors, dielectric breakdown, hydrogen in superconductors, magnetic separation.

Memberships, grants and awards:

Scholarship of the President of Ukraine for young scientists (2016)
Grant No. 2/20-H from the NAS of Ukraine (2020)
Grant No. 2/21-H from the NAS of Ukraine (2021)

Publications: 72 publications, including: 30 - articles in scientific journals, 42 - abstracts of conferences.

Selected publications:

1. A. V. Krevsun, S. I. Bondarenko, **V. P. Koverya**, *Combined breakdown of a dielectric nanolayer to form a Josephson bridge*, Temperature Physics, **49**, 83 (2023). <https://doi.org/10.1063/10.0016479>

2. S. I. Bondarenko, A. V. Krevsun, **V. P. Koverya**, A. G. Sivakov, and R. S. Galushkov, *Electrical breakdown of a dielectric for the formation of a superconducting nanocontact*, *Low Temperature Physics*, **48**, 741 (2022). <https://doi.org/10.1063/10.0013310>
3. H. H. Zhun, V. V. Starikov, **V. P. Koverya**, *Development of a technology for manufacturing a heat-shielding structure on nitrogen cryocontainers, excluding heat transfer through gas*, *Low Temperature Physics*, **48**, 684 (2022). <https://doi.org/10.1063/10.0013291>
4. S.I. Bondarenko, A.I. Prokhvatilov, R. Puzniak, J. Pietosa, A.A. Prokhorov, V.V. Meleshko, V.P. Timofeev, **V.P. Koverya**, D.J. Gawryluk, A. Wisniewski, *The Impact of Hydrogenation on Structural and Superconducting Properties of $FeTe_{0.65}Se_{0.35}$ Single Crystals*, *Materials* **14**, 7900 (2021). <https://doi.org/10.3390/ma14247900>
5. A. G. Sivakov, R. P. Yavetskiy, N. A. Matveevskaya, T. G. Beynik, A. V. Tolmachev, S. I. Bondarenko, A. S. Pokhila, A. V. Krevsun, **V. P. Koverya**, A. S. Garbuz, *Study of electrical conductivity of the coatings of bimetallic Au-Ag nanoparticles*, *Physica E*, **120**, 114091 (2020). <https://doi.org/10.1016/j.physe.2020.114091>
6. A. I. Prokhvatilov, V. V. Meleshko, S. I. Bondarenko, **V. P. Koverya**, and A. Wisniewski, *The effect of sorption of air and hydrogen components on the structural characteristics of superconducting $FeTe_{0.65}Se_{0.35}$ single crystals*, *Low Temperature Physics*, **46**, 181 (2020). <https://doi.org/10.1063/10.0000538>
7. S. I. Bondarenko, O. G. Avrunin, I. S. Bondarenko, A. V. Krevsun, **V. P. Koverya**, and M. V. Rakhimova, *On the measurements of magnetic nanoparticle concentration in a biological medium using a superconducting quantum magnetometer*, *Low Temperature Physics*, **46**, 1094 (2020). <https://doi.org/10.1063/10.0002152>
8. S. I. Bondarenko, V. N. Fenchenko, **V. P. Koverya**, and A. V. Krevsun, *The discretization of a current and a magnetic field by a superconducting structure with an asymmetric quantum interferometer*, *Low Temperature Physics*, **45**, 914 (2019). <https://doi.org/10.1063/1.5116543>
9. S. I. Link, **V. P. Koverya**, A. V. Krevsun, and S. I. Bondarenko, *The effect of alternating current on the current states of a quantum interferometer shunted by a superconducting inductance*, *Low Temperature Physics*, **44**, 1139 (2018). <https://doi.org/10.1063/1.5060965>
10. S. I. Bondarenko, A. V. Krevsun, E. V. Ilichev, U. Hubner, **V. P. Koverya**, S. I. Link, *Thin film superconducting quantum interferometer with ultralow inductance*, *Low Temperature Physics*, **44**, 184 (2018). <https://doi.org/10.1063/1.5024532>
11. S. I. Bondarenko, **V. P. Koverya**, A. V. Krevsun, S. I. Link, *High-temperature superconductors of the family $(RE)Ba_2Cu_3O_{7-\delta}$ and their application*. (Review Article), *Low Temperature Physics*, **43**, 1125 (2017). <https://doi.org/10.1063/1.5008405>
12. A. G. Sivakov, S. I. Bondarenko, A. I. Prokhvatilov, V. P. Timofeev, A. S. Pokhila, **V. P. Koverya**, I. S. Dudar, S. I. Link, I. V. Legchenkova, A. N. Bludov, V. Yu. Monarkha, D. J. Gawryluk, J. Pietosa, M. Berkowski, R. Diduszko, R. Puzniak, A. Wisniewski, *Microstructural and transport properties of superconducting $FeTe_{0.65}Se_{0.35}$ crystals*, *Superconductor Science and Technology*, **30**, 015018 (2017). <http://dx.doi.org/10.1088/0953-2048/30/1/015018>
13. S. I. Bondarenko, O. M. Bludov, A. Wisniewski, D. Gawryluk, I. S. Dudar, **V. P. Koverya**, V. Yu. Monarkha, A. G. Sivakov, V. P. Timofeev, *Anisotropy of the magnetic properties of the $FeTe_{0.65}Se_{0.35}$ superconductor*, *Low Temperature Physics*, **41**, 897 (2015). <http://dx.doi.org/10.1063/1.4936226>
14. S. I. Bondarenko, **V. P. Koverya**, A. V. Krevsun, L. V. Gnezdilova, *Measurement of energy gaps in superconductors by means of quantum interference devices*, *Low Temperature Physics*, **41**, 179 (2015). <http://dx.doi.org/10.1063/1.4915915>
15. S. Bondarenko, **V. Koverya**, *Superconductivity in the Institute for Low Temperature Physics and Engineering of the National Academy of Sciences of Ukraine*, *International Journal of Modern Physics B*, **29**, 1542013 (2015). <http://dx.doi.org/10.1142/S0217979215420138>