

## Curriculum Vitae

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### Dr. Oksana E. Kvitnytska

Name used in publications:

KVITNITSKAYA

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Personal information: - Born on 5 April 1968 in Kharkiv, Ukraine  
- Nationality: Ukraine

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Education: - 1985-1991 – Kharkiv Polytechnical Institute (Kharkiv, Ukraine), Master degree in Physics (focus on Physics of Metals, Diploma with honour).  
- 1991-1994 – correspondent Post-Graduate Study in B.Verkin Institute for Low Temperature Physics and Engineering (Kharkiv, Ukraine) (focus on Low Temperature Solid State Physics).

### Academia experience:

- March 1991-Dec. 1994 – Engineer;
- Jan.1995-Dec. 1997 - Junior Researcher;
- Jan. 1998-July 2003 - Researcher;
- July 2003-up to now - Senior Researcher.

All positions are held at B.Verkin Institute for Low Temperature Physics and Engineering National Academy of Sciences of Ukraine, Kharkiv, Ukraine

Titles and awards: - Candidate of Sciences (equivalent of PhD), Solid state physics (1997, Ukraine);

- Prize for Young Scientist by the National Academy of Science of Ukraine (1999).

### Periods of study and research abroad:

- 1995-1996 - one-year DAAD Grant at II Physikalisches Institut, Universität zu Köln, Germany;
- 1997-1998 –research stay at High Magnetic Field Laboratory, CNRS-MPI, Grenoble, France;
- 2004- 3-month DAAD-NATO Grant, Physikalisches Institut, Universität Bayreuth, Germany;
- 2008-2009- one-year Alexander von Humboldt Foundation grant at Leibniz Institute for Solid State and Materials Research Dresden, Germany;
- 2013–2016 Alexander von Humboldt research group linkage project, Germany;
- 2017–2020 Volkswagen Foundation grant, Germany.

### Experience and research interests:

- Exploitation of 4He low temperature cryogenic set-up, fabrication of point contacts
- Study of different quasiparticle excitations and mechanisms of conduction electron scattering in metals by point-contact spectroscopy
- Investigation of the normal, magnetic and superconducting ground state in the heavy-fermion, mixed valence, boride superconductors, pnictide superconductors, topological materials by

point-contact spectroscopy. Study the interplay of superconductivity and magnetism in superconductors.

- Investigation of superconductors by point-contact spectroscopy: temperature and magnetic field dependence of the superconducting order parameter, Andreev reflection, Josephson effect, critical current etc.

#### Selected publications:

1. Naidyuk, Yu.G., Kvitnitskaya, O.E., Nowack, A., Yanson, I.K., Menovsky, A.A., *Anisotropy of point-contact characteristics of URu<sub>2</sub>Si<sub>2</sub> in the normal state*. Low Temp. Phys. 21, 236-240 (1995)
2. Nowack, A., Wasser, S., Kvitnitskaya, O.E., Schlabitz, W., Fisk, Z., *Point-contact spectroscopy of YbBe<sub>13</sub>*. Phys. Rev. B 56, 14964-14971 (1997).
3. Naidyuk, Yu.G., Kvitnitskaya, O.E., Jansen, A.G.M., Geibel, C., Menovsky, A.A., Wyder, P., *Point-contacts of URu<sub>2</sub>Si<sub>2</sub> and UPd<sub>2</sub>Al<sub>3</sub> in high magnetic fields*. Physica B 284-288, 1293-1294 (2000).
4. Naidyuk, Yu.G., Kvitnitskaya, O.E., Yanson, I.K., Drechsler, S.-L., Behr, G., Otani, S. *Electron-phonon interaction in transition metal diborides TB<sub>2</sub> (T=Zr, Nb, Ta) studied by point-contact spectroscopy*. Phys. Rev. B 66, 140301-140304 (R) (2002).
5. Naidyuk, Yu.G., Yanson, I.K., Kvitnitskaya, O.E., Lee, S., Tajima, S., *Search for E<sub>2g</sub> phonon modes in MgB<sub>2</sub> single crystals by point-contact spectroscopy*. Phys. Rev. Lett. 90, 1970011-1970014 (2003).
6. Kvitnitskaya, O., Naidyuk, Yu.G., Yanson, I.K., Karkin, A., Naumov, S., Kostromitina, N., *Point-contact spectroscopy of the normal state excitations in PrOs<sub>4</sub>Sb<sub>12</sub>*. Physica B 378-380, 187-188 (2006).
7. Naidyuk Yu.G., Kvitnitskaya O.E., Yanson I.K., Fuchs G., Nenkov K., Wälte A., Behr G., Souptel D., Drechsler S.-L., *Point-contact spectroscopy of the antiferromagnetic superconductor HoNi<sub>2</sub>B<sub>2</sub>C*, Phys. Rev. B 76, 014520 (2007).
8. Kvitnitskaya, O.E., Naidyuk Yu.G., Yanson I. K., Niemeier T., Fuchs G., Holzapfel B., Schultz L., *Point-contact study of the LuNi<sub>2</sub>B<sub>2</sub>C borocarbide superconducting film*. Superconductor Science and Technology, 23, 115001-1-115001-5 (2010).
9. Naidyuk Yu.G., Kvitnitskaya O.E., Tiutrina L.V., Yanson I.K., Behr G., Fuchs G., Drechsler S.-L., Nenkov K., Schultz L., *Peculiarities of the superconducting gaps and the electron-boson interaction in TmNi<sub>2</sub>B<sub>2</sub>C as seen by point-contact spectroscopy*, Phys. Rev. B 84, 094516-1-094516-9 (2011).
10. Naidyuk Yu.G., Kvitnitskaya O.E., Gamayunova N.V., Boeri L., Aswartham S., Wurmehl S., Büchner B., Efremov D.V., Fuchs G., Drechsler S.-L., *Single 20-meV boson mode in KFe<sub>2</sub>As<sub>2</sub> detected by point-contact spectroscopy*, Phys. Rev. B, 90, 094505-1-094505-9 (2014).
11. Naidyuk Yu. G., Kvitnitskaya O. E., Gamayunova N. V., Bashlakov D. L., Tyutrina L. V., Fuchs G., Hühne R., Chareev D. A., Vasiliev A. N., *Superconducting gaps in FeSe studied by soft point-contact Andreev reflection spectroscopy*. Phys. Rev.B, 96, 094517-1-094517-7 (2017).
12. Naidyuk Yu.G., Kvitnitskaya O.E., Bashlakov D.L., Aswartham S., Morozov I., Chernyavskii I., Fuchs G., Drechsler S.-L., Hühne R, Nielsch K., Büchner B., Efremov D., *Surface superconductivity in the Weyl semimetal MoTe<sub>2</sub> detected by point contact spectroscopy*. 2D Materials 5, 045014-1-045014-8 (2018).