

**Curriculum Vitae (CV)**  
**of OMELCHENKO LIUDMYLA**



**I. PERSONAL DATA**

**Family Name:** Omelchenko  
**First Name:** Liudmyla  
**Nationality:** Ukraine

**Languages:** Ukrainian, Russian, English  
**Position:** Junior Research Scientist  
**Home Institute:** B.Verkin Institute for Low Temperature Physics and Engineering National Academy of Sciences of Ukraine, 47 Nauky ave., 61103, Kharkiv, Ukraine.  
Department of transport properties of conducting and superconducting systems

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<https://scholar.google.com.ua/citations?user=SgL954YAAAAJ&hl=uk>

**II. ALL ACADEMIC DEGREES OBTAINED**

**year: 2018** Dissertation  
*“Excess conductivity in cuprate high-temperature superconductors  $REBa_2Cu_3O_{7-\delta}$  ( $RE = Y, Pr$ )”*

**name of institute: -** B.Verkin Institute for Low Temperature Physics and Engineering, National Academy of Sciences of Ukraine

**place, country: -** Kharkiv, Ukraine

**main subjects: -** Solid State Physics

**year: 2011** Master of Science  
**name of university:-** V. N. Karazin Kharkiv National University  
**place, country: -** Kharkiv, Ukraine  
**subject: -** Physics, Diploma with honour

### III. ALL STAGES OF UNIVERSITY EDUCATION

**year: 2010 -** Bachelor of Science  
**name of university: -** V. N. Karazin Kharkiv National University  
**place, country: -** Kharkiv, Ukraine  
**subject: -** Physics

**year: 2011 -** Master of Science  
**name of university: -** V. N. Karazin Kharkiv National University  
**place, country: -** Kharkiv, Ukraine  
**subject: -** Physics, Diploma with honour

**time: -** Oct. 2013 – Sept. 2016 - Post-Graduate Student  
**name of institute: -** B.Verkin Institute for Low Temperature Physics and Engineering, National Academy of Sciences of Ukraine  
**place, country: -** Kharkiv, Ukraine  
**main subjects: -** Solid State Physics

### IV. PROFESSIONAL BACKGROUND

**Sept.2006 - June. 2011** Student, V.N. Karazin Kharkiv National University, Ukraine.

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**Oct. 2013 - Oct. 2016 -** PhD student at B.Verkin Institute for Low Temperature Physics and Engineering National Academy of Sciences of Ukraine, Kharkiv, Ukraine

**Nov. 2016 –** up to now - Junior Researcher at B.Verkin Institute for Low Temperature Physics and Engineering National Academy of Sciences of Ukraine, Kharkiv, Ukraine

**April 2015 –**  
**(three weeks)** Visitor scientist in International Laboratory of High Magnetic Fields and Low Temperatures, Wroclaw, Poland

**October 2018 –**  
**(one month)** W. Trzebiatowski Institute of Low Temperature and Structure Research Polish Academy of Sciences in Wrocław, Poland  
Division of Low Temperature and Superconductivity

## V. EXPERIENCE AND RESEARCH INTERESTS

- Excess conductivity;
- Pseudogap;
- Fluctuation conductivity;
- High – temperature superconductors.

## VI. PUBLICATIONS:

Number of reports presented at scientific conferences: 21

The total number of publications: 8

Number of publications in refereed journals: 8

List of publications and scientific conferences will be added on the separate sheets.

## OMELCHENKO LIUDMYLA

### List of Publications:

1. Solovjov A. L. Evolution of the excess conductivity in slightly doped  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  under high pressure / A.L. Solovjov, **L.V. Omelchenko**, R.V. Vovk // Вісник ХНУ імені В.Н. Каразіна. Серія «Фізика». – 2015. – Т. 23, № 12. – С. 22 – 27.
2. Hydrostatic-pressure effect on the pseudogap in slightly doped  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  single crystals / A.L. Solovjov, **L.V. Omelchenko**, R.V. Vovk, O.V. Dobrovolskiy, Z.F. Nasyrov, S.N. Kamchatnaya, D. M. Sergejev // Physica B. – 2016. – V. 493. – P. 58 – 67.
3. Peculiarities in the pseudogap behavior in optimally doped  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  single crystals under pressure up to 1 GPa / A.L. Solovjov, **L.V. Omelchenko**, R.V. Vovk, O.V. Dobrovolskiy, S.N. Kamchatnaya, D. M. Sergejev // Current Applied Physics. – 2016. – V.16, № 9. – P. 931 – 938.
4. Fluctuation conductivity and possible pseudogap state in FeAs based superconductor  $\text{EuFeAsO}_{0.85}\text{F}_{0.15}$  / A.L. Solovjov, **L.V. Omelchenko**, A.V. Terekhov, K. Rogacki, R.V. Vovk, E.P. Khlybov and A. Chroneos // Materials Research Express. – 2016. – V.3, № 7. - P. 076001 (1-13).
5. Specific temperature dependence of pseudogap in  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  nanolayers / A.L. Solovjov, **L.V. Omelchenko**, V.B. Stepanov, R.V. Vovk, H.-U. Habermeier, P.Przyslupski and K. Rogacki // Phys.Rev.B. – 2016. – V. 94. №22. – P. 224505 (1-11).
6. Effect of Hafnium Impurities on the Magnetoresistance of  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  / S.V. Savich, A.V. Samoylov, S.N. Kamchatnaya, I.L. Goulatis, R.V. Vovk, A. Chroneos, A.L. Solovjov, **L.V. Omelchenko** // J Low Temp Phys. – 2017. – V. 186, №3-4. – P. 285 – 293.
7. Псевдощель и флуктуационная проводимость в монокристалле  $\text{Y}_{1-x}\text{Pr}_x\text{Ba}_2\text{Cu}_3\text{O}_{7-\delta}$  с разной концентрацией празеодима / А.Л. Соловьев, **Л.В. Омельченко**, Р.В. Вовк, С.Н. Камчатная // ФНТ. – 2017. – Т. 43, №. 7. – С. 1050-1058.
8. Suppression of the order–disorder transition in Ti-doped  $\text{YBaCuO}$  compounds / S.V Savich, A.V Samoylov, S.N Kamchatnaya, O.V Dobrovolskiy, R.V Vovk, A.L Solovjov, **L.V Omelchenko** // Materials Science: Materials in Electronics. – 2017. V. 28, № 8. – P. 1-5.

## OMELCHENKO LIUDMYLA

### List of Conferences:

1. Fluctuation conductivity and pseudogap in the new iron-based superconductors  $\text{EuFeAsO}_{0.85}\text{F}_{0.15}$ / **L.V. Omelchenko**, A.V. Terekhov, A.L. Solovjov // V International Conference for Young Scientists «Low Temperature Physics», June 2–6 2014: book of abstracts. – Ukraine, Kharkiv, 2014. – P. 49.
2. Fluctuation conductivity and pseudogap in the new iron-based superconductors  $\text{EuFeAsO}_{0.85}\text{F}_{0.15}$ / **L.V. Omelchenko**, A.V. Terekhov, A.L. Solovjov // XIV Kharkiv Young Scientist Conference, October 14-17 2014: book of abstracts. – Ukraine, Kharkiv, 2014. – P. 45.
3. Specific temperature dependence of pseudogap in  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  nanolayers / T.Y. Novikov, V.N. Svetlov, V.B. Stepanov, **L.V. Omelchenko**, A.L. Solovjov // XIV Kharkiv Young Scientist Conference, October 14-17 2014: book of abstracts. – Ukraine, Kharkiv, 2014. – P. 49.
4. Fluctuation conductivity and pseudogap temperature dependence changing in the slightly doped  $\text{YB}_2\text{Cu}_3\text{O}_{7-\delta}$  single crystals under pressure/ **L.V. Omelchenko**, R.V. Vovk, Z.F. Nazyrov, A.L. Solovjov // VI International Conference for Young Scientists «Low Temperature Physics», June 1 – 5 2015: book of abstracts. – Ukraine, Kharkiv, 2015. – P. 39.
5. Особенности поведения псевдощели в оптимально допированном монокристалле  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  под давлением до 1 ГПа / **Л.В. Омельченко**, А.Л. Соловьев, Р.В. Вовк // XII Международная научная конференция «Физические явления в твердых телах», 1 – 4 декабря 2015: тезисы доклада – Украина, Харьков 2015. – С. 41.
6. Влияние гидростатического давления на псевдощель в слабодопированном монокристалле  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  / **Л.В. Омельченко**, А.Л. Соловьев, Р.В. Вовк // XII Международная научная конференция «Физические явления в твердых телах», 1 – 4 декабря 2015: тезисы доклада – Украина, Харьков 2015. – С. 40.
7. Pseudogap and fluctuation conductivity in  $\text{Y}_{1-x}\text{Pr}_x\text{Ba}_2\text{Cu}_3\text{O}_{7-\delta}$  single crystals with different praseodymium (Pr) content/ **L.V. Omelchenko**, A.L. Solovjov, R.V. Vovk // VII International Conference for Young Scientists «Low Temperature Physics», June 1 – 5 2016: book of abstracts. – Ukraine, Kharkiv, 2016. – P. 45.
8. Specific temperature dependence of pseudogap in  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  nanolayers / A.L. Solovjov, **L.V. Omelchenko**, R.V. Vovk, K. Rogacki // International school s conference on nanoscience and quantum transport (nano QT- 2016), October 8-14, Kiev 2016.
9. Fluctuation conductivity and pseudogap in  $\text{Y}_{1-x}\text{Pr}_x\text{Ba}_2\text{Cu}_3\text{O}_{7-\delta}$  single crystals / A.L. Solovjov, **L.V. Omelchenko**, R.V. Vovk // «60th International Conference for Students of Physics and Natural Sciences» (Open Readings 2017), 14-17 March, 2017 : book of abstracts. – Vilnius, Lithuania, 2017. – P. 313.
10. Excess conductivity and pseudogap in superlattices and double layer  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  –  $\text{PrBa}_2\text{Cu}_3\text{O}_{7-\delta}$  films / **L.V. Omelchenko**, V. B. Stepanov, A. L. Solovjov // VIII International Conference for Professionals and Young Scientists «Low Temperature Physics», May 29 – June 2 2017 : book of abstracts. – Ukraine, Kharkiv, 2017. – P. 52.
11. Pseudogap in  $\text{Y}_{1-x}\text{Pr}_x\text{Ba}_2\text{Cu}_3\text{O}_{7-\delta}$  single crystals with different praseodymium (Pr) content / **L.V. Omelchenko**, A.L. Solovjov, R.V.Vovk // International conference on strongly correlated

electron systems (SCES -2017), July 17-21 2017 : book of abstracts. – Czech Republic, Prague, 2017. – P. 22.

12. Influence of Pr on pseudogap behavior in  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  nanolayers / **L.V. Omelchenko**, A.L. Solovjov // V International Research and Practice Conference «Nanotechnology and nanomaterials», 23 - 26 August, 2017 : book of abstracts. – Chernivtsi, Ukraine, 2017. – P. 237.

13. Влияние примеси  $\text{TiO}_2$  на магнетосопротивление керамики  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  / С.В. Савич, А.В.Самойлов, С.Н. Камчатная, А.В. Добровольский, Р.В. Вовк, А.Л. Соловьев, **Л.В. Омельченко** // XIII Міжнародна конференція «Фізичні явища в твердих тілах», 5-8 декабля, 2017 : тезиси доклада – Україна, Харьков 2017. – С. 92.

14. Fluctuation conductivity, pseudogap and thermoelectric power in single crystal and polycrystalline  $\text{Ho}_{1.4}\text{Ba}_{2.4}\text{Cu}_{3.4}\text{O}_{7-\delta}$  – CEO2(1WT%) superconductors / E.V. Petrenko, A.L. Solovjov, **L. V. Omelchenko**, V. B. Stepanov, Z. Guo-Ping // «61th International Conference for Students of Physics and Natural Sciences» (Open Readings 2018), 20-23 March, 2018 : book of abstracts. – Vilnius, Lithuania, 2018. – P. 158.

15. Excess conductivity and pseudogap in  $\text{Y}_{1-x}\text{Ba}_2\text{Cu}_3\text{O}_{7-\delta}$  nanolayers / **L.V. Omelchenko**, A.L. Solovjov, K. Rogacki // «61th International Conference for Students of Physics and Natural Sciences» (Open Readings 2018), 20-23 March, 2018 : book of abstracts. – Vilnius, Lithuania, 2018. – P. 56.

16. Excess conductivity and pseudogap in  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  nanolayers / **L.V. Omelchenko**, A.L. Solovjov, K. Rogacki // The 21st International Conference on Solid Compounds of Transition Elements «SCTE'18», 25-29 March, 2018 : book of abstracts. – Vienna, 2018. – P. 54.

17. Effect of annealing on the pseudogap state of the detwinned single crystal  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  / A.L. Solovjov, E.V. Petrenko, **L.V. Omelchenko**, R.V. Vovk // IX International Conference for Professionals and Young Scientists «Low Temperature Physics», June 4 – 8, 2018 : book of abstracts. – Ukraine, Kharkiv, 2018. – P. 64.

18. Hydrostatic pressure influence on the temperature dependence of fluctuation conductivity and pseudogap in  $\text{YPr}_{1-x}\text{Ba}_2\text{Cu}_3\text{O}_{7-\delta}$  single crystals / **L.V. Omelchenko**, A.L. Solovjov, E.V. Petrenko, R.V. Vovk // IX International Conference for Professionals and Young Scientists «Low Temperature Physics», June 4 – 8, 2018 : book of abstracts. – Ukraine, Kharkiv, 2018. – P. 73.

19. Excess conductivity and pseudogap in  $\text{YPr}_{1-x}\text{Ba}_2\text{Cu}_3\text{O}_{7-\delta}$  single crystals under pressure / **L.V. Omelchenko**, A.L. Solovjov, E.V. Petrenko, R.V. Vovk // 12<sup>th</sup> Prague Colloquium on *f*-Electron Systems (PCFES -2018), July 4-7 2018 : book of abstracts. – Czech Republic, Prague, 2018. – P. P-7.

20. Pseudogap and excess conductivity in  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  –  $\text{PrBa}_2\text{Cu}_3\text{O}_{7-\delta}$  nanolayers / **L.V. Omelchenko**, A.L. Solovjov // International Conference on Nanoscience + Technology (ICN+T), July 22-27 2018: book of abstracts. - Czech Republic, Brno, 2018. – P. 242.

21. Pseudogap properties and superconducting fluctuations above  $T_c$  in superconductor-ferromagnet heterostructures and bulk Fe-based materials / K. Rogacki, **L.V. Omelchenko**, H. Lochmayer, M. Matusiak, P. Przysławski, H.-U. Habermeier, T. Domanski, and A. Solovjov // 3rd International Conference on Superconductivity and Magnetism in Selected Systems, September 16-21 2018: book of abstracts. – Poland, Zakopane, 2018. – P. 42.