Korolyuk Oksana Oleksiivna

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Affiliation and address:

B.Verkin Institute for Low Temperature Physics and Engineering of the National Academy of Sciences of Ukraine, 47 Nauky Ave., 61103 Kharkiv, Ukraine

Date of birth: 21.05.1957.

Education:

Physics department of Kharkov State University. Kharkiv. Ukraine. From 1974 to 1979.

Scientific degree:

Candidate of Physical and Mathematical Sciences, specialty 01.04.09 – “Low Temperature Physics”, 2001, dissertation: “Quantum Effects in Thermal Conductivity of Solid Solutions of Hydrogen and Deuterium”.

Academic title:

senior researcher in the specialty 01.04.09 - "low temperature physics", 2012.

Present situation: Senior Researcher, Department of Thermal Properties and Structure of Solids and Nanosystems of B. Verkin Institute for Low Temperature Physics and Engineering of the National Academy of Sciences of Ukraine.

P**ositions:**

engineer (since 1979 in the Department of Thermal Properties of Molecular Crystals of ILTPE), senior engineer, junior researcher, researcher, and from 01.01. 2008 up to now - senior researcher.

Main areas of work:

experimental study of the thermal conductivity of molecular solids as a function of temperature (pure and doped crystals in both orientationally ordered and disordered phases, various types of glasses) at low temperatures and phase transformations in them; as well as the study of heat transfer processes in complex crystals and clathrate structures.

Publications in scientific journals:

Author and co-author of more than 120 published works.

Selected publications for the period 2020-2025.

1. Korolyuk, O. A., Krivchikov, A. I., & Romantsova, O. O. (2020). Universal temperature dependence of the thermal conductivity of clathrate compounds, molecular crystals, and glasses at low temperatures. *Low Temperature Physics*, *46*(2), 111-117.

DOI: 10.1063/10.0000528

2. Miyazaki, Y., Nakano, M., Krivchikov, A. I., Koroyuk, O. A., Gebbia, J. F., Cazorla, C., & Tamarit, J. L. (2021). Low-temperature heat capacity anomalies in ordered and disordered phases of normal and deuterated thiophene. *The Journal of Physical Chemistry Letters*, *12*(8), 2112-2117. https://doi.org/10.1021/acs.jpclett.1c00289

3. Krivchikov, A., Andersson, O., Korolyuk, O., & Kryvchikov, O. (2022). Thermal conductivity of solid triphenyl phosphite. *Molecules*, *27*(23), 8399. https://doi.org/10.3390/molecules27238399

4. Krivchikov, A. I., Horbatnko, Y. V., Korolyuk, O. A., Romantsova, O. O., Kryvchikov, O. O., Szewczyk, D., & Jezowski, A. (2023). Exponential approximation of the coherence contribution to the thermal conductivity of complex clathrate-type crystals. *Materialia*, *32*, 101944. DOI: 10.1016/j.mtla.2023.101944

5. Barabashko, M. S., Krivchikov, A. I., Basnukaeva, R., Korolyuk, O. A., & Jeżowski, A. (2023). Proportional correlation between heat capacity and thermal expansion of atomic, molecular crystals and carbon nanostructures. *arXiv preprint arXiv:2308.06346*. Condensed Matter Physics, DOI: 10.5488/CMP.26.33602

6. Krivchikov, A. I., & Korolyuk, O. A. (2024). Empirical universal approach to describing the thermal conductivity of amorphous polymers: effects of pressure, radiation and the Meyer–Neldel rule. *Low Temperature Physics*, *50*(4), 328-341.

DOI: 10.1063/10.0025299

7. Horbatenko, Y. V., Sagan, V. V., Korolyuk, O. A., Romantsova, O. O., & Krivchikov, A. I. (2024). Temperature dependences of thermal conductivity of solid heterogeneous crystalline and

amorphous materials: An empirical approach to the description in the high-temperature region. *Low Temperature Physics*, *50*(5), 379-388.

DOI: 10.1063/10.0025621

8. Krivchikov, A. I., Jeżowski, A., Konstantinov, V. A., Sagan, V. V., Korolyuk, O. A., & Szewczyk, D. (2024). Enhancing thermal transport in ABS polymer with graphene oxide: Insights into low-temperature thermal conductivity behavior and correlation with Boson peak anomaly. *Thermochimica Acta*, *733*, 179696.

https://doi.org/10.1016/j.tca.2024.179696