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Research Interests: Experimental investigation of thermal conductivity and heat capacity of molecular solids (crystals and various types of glasses) at low temperatures.

Scientific Degree: PhD (01.04.09– low temperature physics, 2013)

Professional Experience:

B.I. Verkin Institute for Low Temperature Physics and Engineering, National Academy of Sciences of Ukraine, Department of Thermal Properties and Structure of Solids and Nanosystems

2005 – 2008: PhD student

2008 – 2014: Junior Researcher

2015 – present: Researcher

Education:

1999 – 2005 National Technical University «Kharkiv Polytechnic Institute», M.Sc. in Physical Materials Science.

Participation in Scientific Projects:

Joint program of the Polish Academy of Sciences and the National Academy of Sciences of Ukraine – Internship in research institutions under the NASU-PAS cooperation agreement (2016–2017).

Awards:

1. Scholarship for Young Scientists from NAS of Ukraine (2007–2009)
2. Scholarship of the President of Ukraine for Young Scientists (2016 – 2018)
3. Visegrad Fellowship for the project «Peculiarities in the low temperature heat capacity in low dimensional diamond-based system» (2024)

Research Grants:

1. Grant from European Fund for Displaced Scientists, (ALLEA) 2023.
2. Short-term scientific missions (STSMs) COST «Thermal performance of low-dimensional diamond inclusions for carbon-allotrope based composites», 2024.
3. Short-term scientific missions (STSMs) COST «Thermodynamic properties of materials containing hydrated fullerene inclusions at extra low temperatures», 2025.

Articles:

1. Jeżowski A., Strzhemechny M.A., Krivchikov A.I., Davydova N.A., Szewczyk D., Stepanian S.G., Buravtseva L.M., Romantsova O.O., Glassy anomalies in the heat capacity of an ordered 2-bromobenzophenone single crystal, *Physical Review B*, 97, 201201 (2018).
2. Jeżowski A., Strzhemechny M.A., Krivchikov A.I., Pyshkin O.S., Romantsova O.O., Korolyuk O.A., Zloba D.I., Horbatenko Yu.V., Filatova A., Thermoactivated heat transfer mechanism in molecular crystals: Thermal conductivity of benzophenone single crystals, *AIP Advances*, 9, 015121 (2019).
3. Horbatenko Y.V., Romantsova O.O., Korolyuk O.A., Jeżowski A., Szewczyk D., Tamarit J.L., Krivchikov A.I., Anomalous behavior of thermal conductivity at high temperatures for molecular crystals composed of flexible molecules, *Journal of Physics and Chemistry of Solids*, 127, 151 (2019).
4. Korolyuk O.A., Krivchikov A.I., Romantsova O.O., Universal temperature dependence of the thermal conductivity of clathrate compounds, molecular crystals, and glasses at low temperatures, *Low Temperature Physics* 46, 111 (2020).
5. Krivchikov A., Jeżowski A., Szewczyk D., Korolyuk O., Romantsova O., Buravtseva L., Cazorla C., Tamarit J., Role of Optical Phonons and Anharmonicity in the Appearance of the Heat Capacity Boson Peak-like Anomaly in Fully Ordered Molecular Crystals, *The Journal of Physical Chemistry Letters*, 13, 5061 (2022).
6. Krivchikov A.I., Horbatenko Y.V., Korolyuk O.A., Romantsova O.O., Kryvchikov O.O., Szewczyk D., Jeżowski A., Exponential approximation of the coherence contribution to the thermal conductivity of complex clathrate-type crystals, *Materialia*, 32, 101944 (2023).

7. Horbatenko Yu.V., Sagan V.V., Korolyuk O.A., Romantsova O.O., Krivchikov A.I., Temperature dependences of thermal conductivity of solid heterogeneous crystalline and amorphous materials: An empirical approach to the description in the high-temperature region, *Low Temp. Phys.*, 50, 379 (2024).

Conferences:

1. Romantsova O.O., Krivchikov A.I., Korolyuk O.A. and Horbatenko Yu.V., About the features thermal conductivity of clathrate hydrates and semiconductor clathrate compounds, 12-th Conference on Cryocrystals and Quantum Crystals, Poland, Wrocław/Wojanów, 2018.
2. Horbatenko Yu.V., Romantsova O.O., Krivchikov A.I., Korolyuk O.A., The thermal conductivity features of molecular crystals formed by flexible molecules, «Nanotechnology and nanomaterials» (NANO-2020), Lviv, Ukraine, 2020
3. Horbatenko Yu.V., Korolyuk O.A., Krivchikov A.I., Romantsova O.O., Low-temperature features in heat capacity of complex molecular crystals, «II IASC CM & LTP 2021», Kharkiv, Ukraine, 2021.
4. Romantsova O.O., Glass-like thermal conductivity in crystalline clathrate hydrates, CryoCourse 2022, Heidelberg, Germany, 2022.
5. Romantsova O., Szewczyk D., Jeżowski A., Korolyuk O., Krivchikov O., Horbatenko Yu., and Koroluyk O.A., Heat transfer in crystalline clathrate compounds at low temperatures, «International Conference on Phonon Scattering in Condensed Matter», Paris, France, 2023
6. Romantsova O.O., Horbatenko Y.V., Krivchikov A.I., Korolyuk O.A., Szewczyk D., Jeżowski A., Universal temperature dependence of the diffusons contribution to the thermal conductivity of complex clathrate-type crystals, «CM & LTP-2023», Kharkiv, Ukraine, 2023.
7. Romantsova O.O., Szewczyk D., Jezowski A., Horbatenko Yu., Krivchikov O., Vinnikov M., Cherednichenko S., Heat capacity features of epoxy-based composites with different graphene oxide contributions at low temperatures, «CM & LTP-2024», Kharkiv, Ukraine, 2024.

Languages: Ukrainian, Polish, English, Russian