Razet Basnukaeva

Senior Researcher

Scopus Author ID: 55616870900

WoS Researcher ID: AAF-2514-2021

ORCID: 0000-0003-4706-3837

basnukaeva@ilt.kharkov.ua

SUMMARY

PhD in Physics specializing in the thermal and sorption properties of nanostructured materials, including fullerite, carbon nanotubes, graphene oxide, and their composites. My research focuses on how physical and technological factors influence these materials' functional properties. The findings contribute to advancements in energy storage, gas separation, environmental protection, and the development of high-performance nanocomposites for industrial and technological applications.

ACADEMIC BACKGROUND

B. Verkin ILTPE of NASU
2012-2015

PhD Program (2016 - PhD in Physics diploma)

V. N. Karazin Kharkiv National University
2011-2012

Master Of Physics (with distinction)

V. N. Karazin Kharkiv National University
2007-2011

Bachelor Of Physics

CAREER HISTORY

B. Verkin ILTPE of NAS of Ukraine
2023 - Present

Senior Researcher
Department of Thermal Properties and Structure of Solids and Nanosystems

V. N. Karazin Kharkiv National University
2023 (Part-time)

Associate Professor
Department of Low-Temperature Physics

B. Verkin ILTPE of NAS of Ukraine
2017- 2023

Researcher
Department of Thermal Properties and Structure of Solids and Nanosystems

B. Verkin ILTPE of NAS of Ukraine
2012- 2015

Junior Researcher
Department of Thermal Properties and Structure of Solids and Nanosystems

B. Verkin ILTPE of NAS of Ukraine
2012

Engineer
Department of Thermal Properties and Structure of Solids and Nanosystems

Key Research Directions: Thermal and sorption properties of solids and nanostructures (fullerite, carbon nanotubes, graphene); low-temperature precision dilatometry of nanosystems; kinetics of gas saturation in nanosystems; synthesis of graphene oxide; development of nanocomposites with advanced functional and operational properties.

NETWORKS AND MEMBERSHIPS

- **COST** (European Cooperation in Science and Technology). Memder of COST ACTION CA20130 Euro-MIC and Euro-MIC Workgroup "WG2 Diagnostic technology development", 2023 - till now
- **Council of Young Scientists at the B.Verkin ILTPE of NASU,** 2018- till now
- **International Advanced Study Conference Condensed Matter & Low Temperature Physics** organizing committee member, 2018- till now
- **Regular seminars** "Heat Capacity and Thermal Conductivity of Solids at Low Temperatures" organizing committee member, 2021 - till now
- **International Society for Optics and Photonics (SPIE),** 2012 - till now
- **The Optical Society OPTICA** (formerly OSA), 2012 - till now

NOTABLE AWARDS

- **Presidential Award of Ukraine for Young Scientists** (2021)
- **National Academy of Sciences of Ukraine Scholarship for Young Scientists** (2021-2023)
- **Honorary Diploma** awarded by **the Presidium of the National Academy of Sciences of Ukraine** for contributions to the study of gas sorption in carbon nanostructures at low temperatures (2019)
- **Most Outstanding Young Scientist of the Year** in the Kharkiv Region (2018)
- **Personal Mobility Grant** for Joint Research between Ukraine and Poland at the Division of Nanomaterials Chemistry and Catalysis, W. Trzebiatowski Institute of Low Temperature and Structural Research, Wroclaw, Poland (2017)
- **Scholarship of the President of Ukraine** (2014-2016) and (2024-2026)

CORE PROJECTS

- Project funded by the **National Research Foundation of Ukraine**, competition "Research Support for Leading and Young Scientists". Title: "Quantum Tunneling of Oscillatory Excitations in Thermal Conductivity of Crystalline and Amorphous Materials and Composites" (2020–2023) (Project Member)
- **Research project for young scientists National Academy of Sciences of Ukraine.** Title: "The sintering of new composite biomaterials reinforced by carbon nanotubes and study of its structure and sorption properties" (2021–2022) (Project Leader)
- **Grant of the President of Ukraine** for young scientists. Title: "Synthesis of novel graphene nanostructures for armoring of composite materials in order to improving their exploitation characteristics" (2019) (Project Leader)

PUBLICATIONS

1) The effect of glass transition in fullerite C_{60} on Ar impurity diffusion / A. V. Dolbin, V. B. Esel'son, V. G. Gavrilko, V. G. Manzhelii, N. A. Vinnikov, **R. M. Basnukaeva** // Low Temp. Phys. 39, 370–373 (2013) *https://doi.org/10.1063/1.4802502*

2) Sorption of ^4He, H_2, Ne, N_2, CH_4 and Kr impurities in graphene oxide at low temperatures. Quantum effects / A.V. Dolbin, V.B. Esel'son, V.G. Gavrilko, V.G. Manzhelii, N.A.Vinnikov, **R.M. Basnukaeva**, V.V. Danchuk, N.S. Mysko, E.V. Bulakh, W.K. Maser and A.M.Benito /Low Temp. Phys. 39, 1090–1095 (2013) *https://doi.org/10.1063/1.4830421*

3) Hydrogen storage capacity of carbon nanotubes gamma-irradiated in hydrogen and deuterium media / I.Y.Uvarova, **R.M. Basnukaeva**, A.V. Dolbin, B.A. Danilchenko // IEEE Publication Electronics Technology (ISSE) - 2013. - P. 54

4) Tunneling effects in the kinetics of helium and hydrogen isotopes desorption from single-walled carbon nanotube bundles / B.A. Danilchenko, I.I. Yaskovets, I.Y.Uvarova, A.V.Dolbin, V. B. Esel'son, **R.M. Basnukaeva**, N.A. Vinnikov // Appl. Phys. Lett. 104, 173109 (2014) *https://doi.org/10.1063/1.4874880*
5) Kinetics of ^{3}He, ^{4}He, H_2, D_2, Ne, and N_2 sorption by bundles of single-walled carbon nanotubes. Quantum effects/ A. V. Dolbin, V. B. Esel'son, V. G. Gavrilko, V. G. Manzhelii, N. A. Vinnikov, **R. M. Basnukaeva**, I. I. Yaskovets, I. Yu.Uvarova, and B. A. Danilchenko // Low Temp. Phys. 40, 246–250 (2014) *https://doi.org/10.1063/1.4868528*
6) Effect of γ-ray irradiation on the sorption of hydrogen by nanoporous carbon materials / A. V. Dolbin, V. G. Manzhelii, V. B. Esel'son, V. G. Gavrilko, N. A. Vinnikov, **R. M. Basnukaeva**, M. V. Khlistyuck, V. P. Maletskii, V. G. Nikolaev and E. V. Kudriachenko, V. Yu. Koda // Low Temp. Phys. 41, 287–292 (2015) *https://doi.org/10.1063/1.4918898*
7) The effect of reduction temperature of graphene oxide on low temperature hydrogen sorption / A.V. Dolbin , V.B. Esel'son, V.G. Gavrilko, N.A. Vinnikov , **R.M. Basnukaeva**, M.V. Khlistuck, W. Maser, A. Benito // Nano and Electronic Phys. Journal. – 2015. – V. 7. – P. 02008
8) The quantum effects in the kinetics of ^{4}He sorption by mesoporous materials / A.V. Dolbin, M.V. Khlistuck, V.B. Esel'son V.G. Gavrilko N.A. Vinnikov, **R.M. Basnukaeva**, V.V. Danchuk // Low Temp. Phys. 42, 80–84 (2016) *https://doi.org/10.1063/1.4941598*
9) The effect of the thermal reduction temperature on the structure and sorption capacity of reduced graphene oxide materials / A.V. Dolbin, M.V. Khlistyuck, V.B. Esel'son, V.G. Gavrilko, N.A. Vinnikov, **R.M. Basnukaeva**, I. Maluenda, W.K. Maser and A.M. Benito // Applied Surface Science. – 2016. – V. 361. – P. 213 *https://doi.org/10.1016/j.apsusc.2015.11.167*
10) Quantum effects in hydrogen sorption by mesoporous materials / A.V. Dolbin , V.B. Esel'son, V.G. Gavrilko, N.A. Vinnikov, **R.M. Basnukaeva**, M.V. Khlistuck // Low Temp. Phys. 42, 1139–1143 (2016) *https://doi.org/10.1063/1.4973468*
11) The effect of the temperature of graphene oxide reduction on low-temperature sorption of ^{4}He / A.V. Dolbin, M.V.Khlistyuck, V.B. Esel'son , V.G.Gavrilko N.A. Vinnikov, **R.M. Basnukaeva**, I. Maluenda, W.K. Maser, A.M. Benito // Low Temp. Phys. 42, 57–59 (2016) *https://doi.org/10.1063/1.4939155*
12) Peculiarities of thermal expansion of quasi-two-dimensional organic conductor κ-(BEDT–TTF)$_2$Cu[N(CN)$_2$]Cl / A.V. Dolbin, M.V. Khlistyuck, V.B. Esel'son, V.G. Gavrilko, N.A.Vinnikov, **R.M. Basnukaeva**, V.V.Danchuk, V.A. Konstantinov, Y. Nakazawa // Low Temp. Phys. 42, 788–793 (2016) *https://doi.org/10.1063/1.4962750*
13) The effect of the thermal reduction on the kinetics of low-temperature ^{4}He sorption and the structural characteristics of graphene oxide / A.V. Dolbin, M.V. Khlistuck, V.B. Esel'son, V.G. Gavrilko, N.A. Vinnikov, **R.M. Basnukaeva**, A.I. Prokhvatilov, I.V.Legchenkova, V.V.Meleshko, W.K. Maser, A.M. Benito // Low Temp. Phys. 43, 383–389 (2017) *https://doi.org/10.1063/1.4979362*
14) Thermal expansion of silica aerogel at low temperatures / A.V. Dolbin, V.B. Eselson,V.G. Gavrilko, N.A. Vinnikov, **R.M. Basnukaeva**, F. Conceição, M. Ochoa // Journal of Applied Physical Science International. – 2017. – V. 8, № 1. – P. 47
15) Thermal expansion of organic superconductor κ-(D$_4$-BEDT-TTF)$_2$Cu{N(CN)$_2$}Br. Isotopic effect / A.V. Dolbin, M.V.Khlistyuck, V.B. Esel'son , V.G.Gavrilko N.A.Vinnikov, **R.M. Basnukaeva**, V.V.Danchuk, V.A.Konstantinov, Y. Nakazawa // Low Temp. Phys. 43, 1387–1391 (2017) *https://doi.org/10.1063/1.5012790*
16) Sorption of hydrogen by silica aerogel at low-temperatures / A. V. Dolbin, M. V. Khlistyuck, V. B. Esel'son, V. G. Gavrilko, N. A. Vinnikov, **R. M. Basnukaeva**, V. E. Martsenuk, N. V. Veselova, I. A. Kaliuzhnyi, A. V. Storozhko //Low Temp. Phys. 44, 144–147 (2018) *https://doi.org/10.1063/1.5020910*
17) Thermocatalytic pyrolysis of CO molecules. Structure and sorption characteristics of the carbon nanomaterial / A. I. Prokhvatilov, A. V. Dolbin, N. A. Vinnikov, **R. M. Basnukaeva**, V. B. Esel'son, V. G. Gavrilko, M. V. Khlistyuck, I. V. Legchenkova, Yu. E. Stetsenko, V. V. Meleshko, and V. Yu. Koda // Low Temp. Phys. 44, 334–340 (2018) *https://doi.org/10.1063/1.5030457*
18) Effect of cold plasma treatment on the hydrogen sorption by carbon nanostructures / A.V. Dolbin, N.A. Vinnikov, V.B. Esel'son, V.G. Gavrilko, **R.M. Basnukaeva**, M.V. Khlistyuck, A.I. Prokhvatilov, V.V. Meleshko, O.L. Rezinkin, and M.M. Rezinkina // Low Temp. Phys. 44, 334–340 (2018) *https://doi.org/10.1063/1.5030457*

19) Thermal expansion of organic superconductor α-(BEDT-TTF)2 NH4Hg(SCN)4 / A.V. Dolbin, M.V.Khlistyuck, V.B. Esel'son , V.G.Gavrilko N.A.Vinnikov, **R.M. Basnukaeva**, V.V.Danchuk, V.A.Konstantinov, K.R. Luchinskii, Y. Nakazawa // Low Temp. Phys. 45, 128–131 (2019) *https://doi.org/10.1063/1.5082324*
20) The effect of graphene oxide reduction temperature on the kinetics of low-temperature sorption of hydrogen / A. V. Dolbin, N. A. Vinnikov, V. B. Esel'son, V. G. Gavrilko, **R. M. Basnukaeva**, M. V. Khlistuck, W. K. Maser, A. M. Beniton // Low Temp. Phys. 45, 422–426 (2019) *https://doi.org/10.1063/1.5093523*
21) The impact of treating graphene oxide with a pulsed high-frequency discharge on the low-temperature sorption of hydrogen / A.V. Dolbin, N.A. Vinnikov, V.B. Esel'son, V.G. Gavrilko, **R. M. Basnukaeva**, M.V. Khlistyuck, A.I. Prokhvatilov, V.V. Meleshko, O.L. Rezinkin, M.M. Rezinkina, S.V. Cherednychenko, L. Kępiński // Low Temp. Phys. 46, 293–300 (2020) *https://doi.org/10.1063/10.0000701*
22) Synthesis and micromechanical properties of graphene oxide-based polymer nanocomposites/ A.V.Rusakova, L.S.Fomenko, S.V.Lubenets, A.V. Dolbin, M.V. Khlistuck, V.B. Esel'son, V.G. Gavrilko, N.A. Vinnikov, **R.M. Basnukaeva**, A.V.Blyznuk // Low Temp. Phys. 46, 276–284 (2020) *https://doi.org/10.1063/10.0000699*
23) Low-temperature sorption of hydrogen by porous carbon material containing palladium nanoclusters / A. V. Dolbin, V. I. Dubinko, N. A. Vinnikov, V. B. Yeselson, V. G. Gavrilko, **R. M. Basnukaeva**, M. V. Khlystyuk, S. V. Cherednichenko, V. O. Kotsyubinsky, V. M. Boychuk, P. I. Kolkovsky // Low Temp. Phys. 46, 1030–1038 (2020) *https://doi.org/10.1063/10.0001921*
24) Quantum effects in the low-temperature thermal expansion of fullerite C60 doped with a 4He impurity / N. A. Vinnikov, A. V. Dolbin, **R. M. Basnukaeva**, V. G. Gavrilko, V. B. Eselson, L. M. Buravtseva // Low Temp. Phys. 48, 791–797 (2022) *https://doi.org/10.1063/10.0014021*
25) The new approach for obtaining aqueous solutions of fullerene $C_{60}@\{H_2O\}_n$ by the cryogenic sublimation method / N. A. Vinnikov, S. V. Cherednichenko, A. V. Dolbin, V. B. Eselson, V. G. Gavrilko, **R. M. Basnukaeva**, A. M. Plokhotnichenko // Low Temp. Phys. 48, 336–338 (2022) *https://doi.org/10.1063/10.0009739*
26) Universal behavior of low-temperature heat capacity of acrylonitrile-butadiene-styrene thermoplastic polymer and its composite with graphene oxide / D. Szewczyk, A. Krivchikov, M. Barabashko, A. Dolbin, N. Vinnikov, **R. M. Basnukaeva**, G. Chajewski, A. Jeżowski // Low Temp. Phys. 49, 593 (2023) *https://doi.org/10.1063/10.0017821*
27) Influence of MWCNTs additives on the thermal conductivity of HA–MWCNTs composite / M. Barabashko, **R. M. Basnukaeva**, A. V. Dolbin, M. Drozd, O. Bezkrovnyi, M. V. Tkachenko // Low Temp. Phys. 49, 737–742 (2023) *https://doi.org/10.1063/10.0019431*
28) Proportional correlation between heat capacity and thermal expansion of atomic, molecular crystals and carbon nanostructures / M. Barabashko, A. Krivchikov, **R. M. Basnukaeva**, O. Korolyuk, A. Jeżowski // Condensed Matter Physics, 2023, V. 26, No. 3, 33602: 1–13 *https://doi.org/10.5488/CMP.26.33602*
29) Low-temperature micromechanical properties of polyolephin/graphene oxide nanocomposites withl owweight percent filler / H.V. Rusakova, L.S. Fomenko, S.V. Lubenets, V.D. Natsik, A.V. Dolbin, N.A. Vinnikov, **R. M. Basnukaeva**, S.V. Cherednichenko // Low Temp. Phys. 49, 1213–1218 (2023) *https://doi.org/10.1063/10.0021363*
30) Kinetics of the thermal decomposition of thermally reduced graphene oxide treated with a pulsed high-frequency discharge in hydrogen atmosphere / M. S. Barabashko, M. Drozd, A. V. Dolbin, **R. M. Basnukaeva**, N. A. Vinnikov // Low Temp. Phys. 50, 368–371 (2024) *https://doi.org/10.1063/10.0025619*
31) Raman, UV-Vis, MS, and IR characterization of molecular-colloidal solution of hydrated fullerenes C60 obtained using vacuum-sublimation cryogenic deposition method. Is the C_{60} molecule truly highly hydrophobic? / S. V. Cherednichenko, G. V. Andrievsky, N. A. Vinnikov, A. V. Dolbin, M. V. Kosevich, V. S. Shelkovsky, **R. M. Basnukaeva**, O. P. Gnatyuk, O. Bezkrovnyi, M. Ptak, M. Chaika, P. O. Kuzema, G. I. Dovbeshko // Low Temp. Phys. 50, 248–256 (2024) *https://doi.org/10.1063/10.0024965*
32) Quantum effects in the kinetics of thermal expansionof C_{60} fullerite doped with He^4 // N. A. Vinnikov, A. V. Dolbin, **R. M. Basnukaeva**, L. M. Buravtseva, E. M. Grytsyuk // Low Temp. Phys. 51, 332–338 (2025) *https://doi.org/10.1063/10.0035836*

CONFERENCES

1) International Conference for Young Scientists in Theoretical and Experemental Physics (HEUREKA-2013, Lviv, Ukraine, May 15–17, 2013)
2) IV International Conference for Young Scientists "Low Temperature Physics" (ICYS-LTP-2013, Kharkiv, Ukraine, June 3–7, 2013)
3) 36th International Spring Seminar on Electronics Technology (Alba Iulia, Romania, June 4 – 6, 2013)
4) International Conference Nanotechnology and Nanomaterials (Nano-2013, Bukovel, Ukraine, August 25 – September 1, 2013)
5) International Conference Nanomaterials: Applications and Properties (Crimea, Alushta, Ukraine, September 21–26, 2013)
6) Physics Boat Workshops "Atomic structure of nanosystems from first-principles simulations and microscopy experiments" (AS-SIMEX 2013, Helsinki, Finland – Stockholm, Sweden, June 4–6, 2013)
7) IV International Conference «Nanoscale systems: structure, properties, technology» (Kyiv, Ukraine, November 19 – 21, 2013)
8) XI International Science Conference "Physical Phenomena in Solids" (Kharkiv, Ukraine, December 3–6, 2013)
9) Students Science Conference "Physics and scientific technical progress" (Kharkiv, Ukraine, 22 April, 2014)
10) International Conference for Young Scientists in Theoretical and Experemental Physics (HEUREKA – 2014, Lviv, Ukraine, May 15–17, 2014)
11) V International Conference for Young Scientists "Low Temperature Physics" (ICYS-LTP-2014, Kharkiv, Ukraine, June 2–5, 2014)
12) X Conference on Cryocrystals and Quantum Crystals (Almaty, Republic of Kazakhstan, August 31–September 7, 2014)
13) V International Conference for Young Scientists "Low Temperature Physics" (ICYS-LTP-2015, Kharkiv, Ukraine, June 1–5, 2015)
14) International Young Scientists Forum on Applied Physics (YSF – 2015, Dnipro, Ukraine, September 10 – October 2, 2015)
15) V Ukrainian–German Symposium on Physics and Chemistry of Nanostructures and on Nanobiotechnology (Kyiv, Ukraine, September 21–25, 2015)
16) 4th International Conference "Nanotechnologies" Nano – 2016 (Tbilisi, Georgia, October 24 – 27, 2016)
17) VI International Conference for Young Scientists "Low Temperature Physics" (ICYS-LTP-2016, Kharkiv, Ukraine, June 6–10, 2016)
18) The International Conference on Quantum Fluids and Solids «QFS–2016» (Prague, Czech Republic, 10 –16 August, 2016)
19) International Young Scientists Forum on Applied Physics (YSF – 2016, Kharkiv, Ukraine, October 10–14, 2016)
20) V International Conference «Nanoscale systems: structure, properties, technology» (Kyiv, Ukraine, December 1–2, 2016)
21) VIII International Conference for Professionals and Young Scientists "Low Temperature Physics" (ICPYS-LTP-2017, Kharkiv, Ukraine, May 29 – June, 2017)
22) Optics–2017 (Poland, Wroclaw, 3–7 July , 2017)
23) International Conference Nanotechnology and Nanomaterials NANO–2017 (Chernivtsi, Ukraine, 23–26 August, 2017)
24) NANOBIOPHYSICS: Fundamental and Applied Aspects (Kharkiv, Ukraine, October 2–5, 2017)
25) XI International Young Scientists Conference" SPO –2017" (Kyiv, Ukraine, October 21–25, 2017)
26) International Conference for Professionals and Young Scientists "Low Temperature Physics" (ICPYS-LTP-2018, Kharkiv, Ukraine, June 4–8, 2018)
27) Cryocrystals CC-2018 (Poland, Wroclaw, August 26–31)

28) International Conference Nanotechnology and Nanomaterials NANO–2018 (Ukraine, Kyiv, 27–30 August, 2018)
29) VIII International Conference on Optoelectonic Information Technologies PHOTONICS–ODS-2018 (Ukraine, Vinnytsia, 2–4 October, 2018)
30) XV All-Ukrainian student conference "Physics and scientific/technical progress» (Kharkiv, Ukraine, April 22–24, 2019)
31) X International Conference for Professionals and Young Scientists "Low Temperature Physics" (ICPYS-LTP-2019, Kharkiv, Ukraine, June 3–7, 2019)
32) International Conference Nanotechnology and Nanomaterials NANO–2019 (Ukraine, Lviv, 27–30 August, 2019)
33) International Advanced Study Conference «Condenced matter and low temperature physics–2020» CM&LTP –2020 Kharkiv, Ukraine, June 8–14, 2020 (online)
34) ISTES 2020 (Japan, Osaka, 21–22 December, 2020)
35) II International Advanced Study Conference "Condensed Matter & Low Temperature Physics 2021" (6 - 12 June 2021, Kharkiv, Ukraine)
36) International Advanced Research Workshop "Thermal Conductivityof solid stated at low temperature" in the frame of the II International Advanced Study ConferenceCONDENSED MATTER&LOW TEMPERATUREPHYSICS (CM&LTP-2021), 8-12 June, 2021, Kharkiv, Ukraine,
37) Summer School Nicolas Cabrera (5 - 11 September 2021, Madryd, Spain)
38) International school-seminar for young scientists "Functional materials for technical and biomedical applications" (Kharkiv, Ukraine, 6-10 September, 2021)
39) International Conference Multiscale Phenomena in Condensed Matter 2022 (Kraków, Poland, 27–30 June 2022)
40) 21st International Conference on Dynamical Processes in Excited States of Solids (04 – 09 September 2022, Wrocław, Poland)
41) IEEE 12th International Conference Nanomaterials: Applications & Properties (Kraków, POLAND, September 11– 16, 2022)
42) 2nd International Conference Carbon Chemistry and Materials (Roma, Italy, 10– 14 October, 2022)
43) 10th Anniversary International Conference on Nanotechnology and Nanomaterials NANO–2022, (Lviv, Ukraine, August 25–27, 2022)
44) International workshop "Photon – graphene interactions: phenomena and applications-2" (Kyiv, Ukraine and Wroclaw, Poland, 9–10 September, 2022)
45) 2nd International Research Workshop "Thermal conductivity of solids states at low temperatures" (Kharkiv, Ukraine, 8–9 November 2022)
46) III International Advanced Study Conference Condensed Matter and Low Temperature Physics (CM&LTP –2023) (Kharkiv, Ukraine, 5–11 June, 2023)
47) IEEE 13th International Conference Nanomaterials: Applications & Properties (Bratislava, Slovakia, September 10–15, 2023)
48) International Scientific Event Dedicated to World Quantum Day (Lviv, Ukraine, April 10–11, 2024)
49) IV International Advanced Study Conference Condensed Matter and Low Temperature Physics (CM&LTP –2024)(Kharkiv, Ukraine, 5–11 June, 2024)
50) IEEE 14th International Conference Nanomaterials: Applications & Properties (Riga, Latvia, September 8 – 13, 2024)
51) NanoInnovation 2024 (Rome, Italy, 9 – 13 September 2024)
52) International Scientific Event Dedicated to World Quantum Day (Lviv, Ukraine, April 10–11, 2025)