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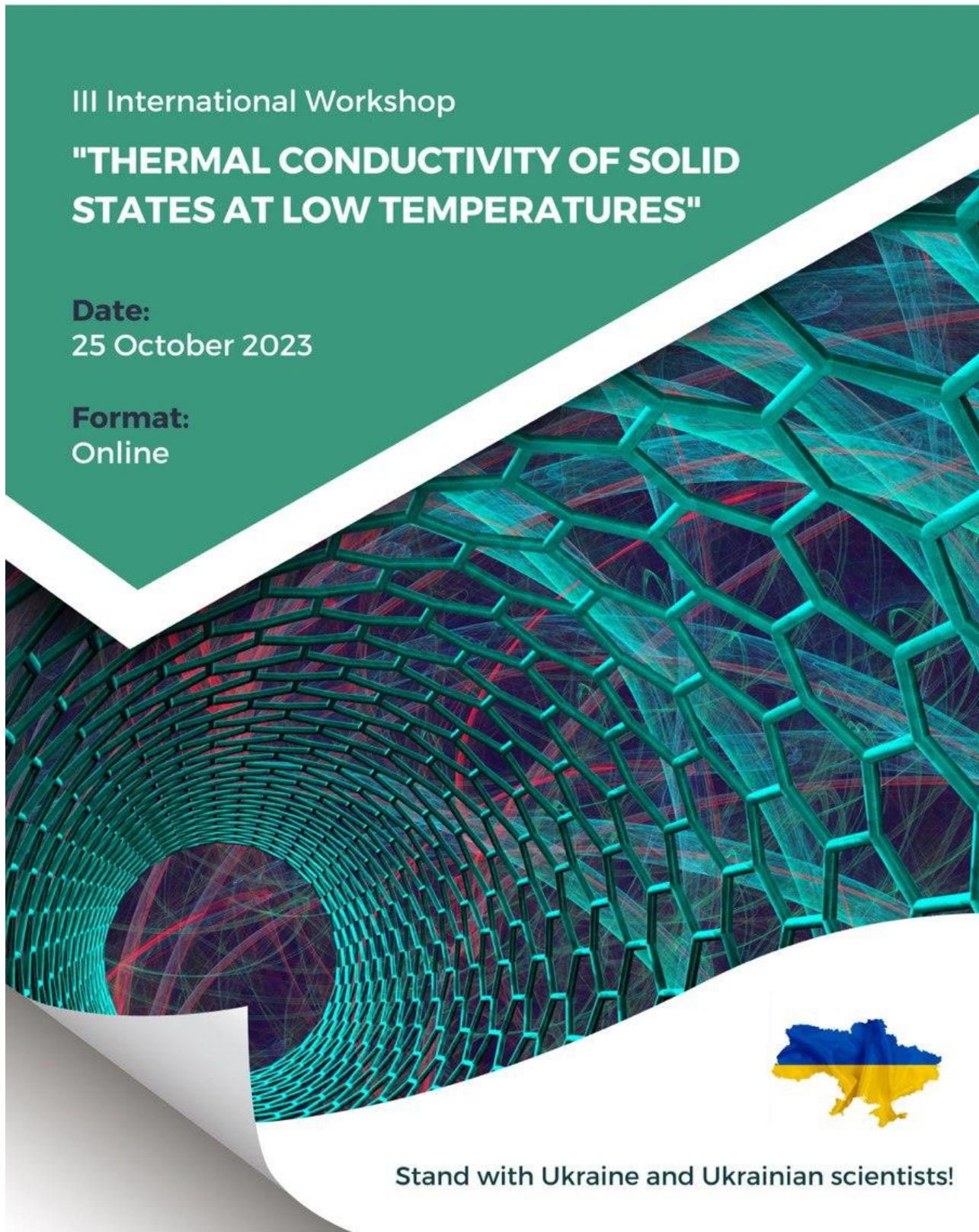
Thermal Conductivity
International Advanced
Research Workshop

III International Workshop

"THERMAL CONDUCTIVITY OF SOLID STATES AT LOW TEMPERATURES"

Date:
25 October 2023

Format:
Online



Stand with Ukraine and Ukrainian scientists!

III INTERNATIONAL ADVANCED RESEARCH WORKSHOP “THERMAL CONDUCTIVITY OF SOLID STATES AT LOW TEMPERATURE”

25 OCTOBER 2023 – ONLINE(ZOOM)
ONLINE (UTC+3, EASTERN EUROPEAN TIME, KHARKIV)

Co-chairs: Prof. Alexander Dolbin, Prof. Alexander Krivchikov
Secretary: Dr. Maksym Barabashko

10.00-10.10 *Opening Talk of the Director of ILTPE NASU: Prof. Yurii Naidyuk*

10.10-10.40 *Keynote Talk: Dr. Daria Szewczyk*

Low-temperature features of volcanic glasses: heat capacity studies

Daria Szewczyk^{1,2}, Michele Cassetta^{3,4}

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Temperature and Structure Research PAS, 50-422, Wrocław, Poland*

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⁴*Department of Engineering for Innovation Medicine, University of Verona, I-37134
Verona, Italy*

10.40-11.00 *Regular Talk: Prof. Miguel Angel Ramos*

*Where do glassy anomalies in disordered crystals come from? Specific heat at low
temperatures in quasiplanar molecular crystals*

*D. Szewczyk^{1,2,3}, M. Moratalla^{1,2}, G. Chajewski³, J.F. Gebbia⁴, A. Jeżowski³, A.I.
Krivchikov^{3,5}, M. Barrio⁴, J.Ll. Tamarit⁴, M.A. Ramos^{1,2}*

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Ave., 61103 Kharkov, Ukraine*

11.00-11.20

Regular Talk: Dr. Manuel Moratalla

Suppression of two-level systems in TPD ultrastable glasses

M. Moratalla¹, M. Rodríguez-López³, C. Rodríguez-Tinoco³, J. Rodríguez-Viejo³,
R. Jiménez-Riobóo², M. A. Ramos¹

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11.20-11.40

Regular Talk: Mr. Alberto Andrino Gómez

Low temperature electrical conductivity of ion-beam irradiated Bi-Sb films

A. Andrino^{1,2,3,4}, M. Moratalla^{1,3,4}, A. Redondo-Cubero^{2,3,4}, N. Gordillo^{2,3,4},
M. A. Ramos^{1,3,4}

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11.40-12.00

Regular Talk: Prof. Takayoshi Katase

Thermal conductivity modulation via crystal structure dimensionality switching of chalcogenide semiconductors

MDX Research Center for Element Strategy, International Research Frontiers Initiative, Tokyo Institute of Technology, 4259 Nagatsuta, Midori, Japan

12.10-12.30

Regular Talk: Dr. Vladimír Tkáč

Thermal conductivity of the binary ZnO-P₂O₅ glasses at low temperatures

P. Baloh¹, V. Tkáč¹, R. Tarasenko¹, E. Čížmár¹, M. Orendáč^{1,2}, A. Orendáčová¹, J. Holubová³, E. Černošková⁴, Z. Černošek³ and A. Feher¹

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12.30-12.50

Regular Talk: Dr. Oksana Korolyuk

An empirical universal approach to describing the thermal conductivity of amorphous polymers over a wide temperature range

A.I. Krivchikov, O.A. Korolyuk

B. Verkin Institute for Low Temperature Physics and Engineering NASU, Ukraine

13.40-14.00

Regular Talk: Dr. Soichi Tatsumi

High Resolution Differential Scanning Calorimetric Works on Vapor-Deposited Ultrastable Phenolphthalein Glass

Soichi Tatsumi¹, Takashi Miyazaki,¹ Yutaka Nakamura,¹ Haruhiko Yao,¹ and Yasuo Saruyama¹

¹*Kyoto Institute of Technology, Materials Science and Engineering, Kyoto, Japan*

14.00-14.20

Regular Talk: Mr. Pavlo Baloh

Experimental study of lattice and magnetic properties of rare-earth doped phosphate glasses

P. Baloh¹, V. Tkáč¹, R. Tarasenko¹, E. Čížmár¹, M. Orendáč¹, A. Orendáčová¹, J. Holubová², E. Černošková³, Z. Černošek² and A. Feher¹

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14.20-14.40

Regular Talk: Dr. Vitalii Liubachko

Dipole ordering and thermal conductivity in Cu(Ag)In(Bi)P₂S(Se)₆ layered crystals

V. Liubachko, Yu. Vysochanskii

Institute for Solid State Physics and Chemistry, Uzhhorod National University, Uzhhorod, 88000, Ukraine

15.10-15.30

Regular Talk: Prof. Junichiro Shiomi

Controlling thermal transport of by nanostructuring

The University of Tokyo, Institute of Engineering Innovation, Tokyo, Japan

15.30-15.50

Regular Talk: Dr. Yuliia Horbatenko

Thermal conductivity of functional materials formed by the superlattices-type structures

Yu.V. Horbatenko, O.O. Romantsova, A.I. Krivchikov, O.A.Korolyuk

B. Verkin Institute for Low Temperature Physics and Engineering NASU, Ukraine

15.50-16.10

Regular Talk: Dr. Volodymyr Sagan

Low temperature thermal conductivity of ABS thermoplastic polymer and its composite with oxide graphene

V.V. Sagan¹, A.I. Krivchikov¹, A. Jeżowski², V.A. Konstantinov¹, O.A. Korolyuk¹, D. Szewczyk²

¹*B. Verkin Institute for Low Temperature Physics and Engineering, NASU, Ukraine*

²*W. Trzebiatowski Institute of Low Temperature and Structure Research, PAS, Poland*

16.10-16.30

Regular Talk: Prof. Alexander Krivchikov

Exponential approximation for coherent tunnel contribution in thermal conductivity of complex solid

B. Verkin Institute for Low Temperature Physics and Engineering, NASU, 47 Nauka Ave., 61103 Kharkiv, Ukraine

17.00-17.30

Keynote Talk: Prof. Mary Anne White

Thermal Conductivity and Near-Zero Thermal Expansion Materials

Department of Chemistry, Department of Physics and Atmospheric Science, and Clean Technology Research Institute, Dalhousie University, Halifax, Nova Scotia, Canada

17.30-17.50

Regular Talk: Prof. Yasuhiro Nakazawa

Hole Doping in the Spin Liquid State of Organic Charge Transfer Complexes
Yasuhiro Nakazawa,¹ Tetsuya Nomoto,¹ Shusaku Imajo,² Satoshi Yamashita,¹ and Hiroki Akutsu¹

¹*Department of Chemistry & Research Centre for Thermal and Entropic Science, Graduate School of Science, Osaka University, Osaka 560-0043, Japan*

²*Institute for Solid State Physics, the University of Tokyo, Chiba 277-8581, Japan*

17.50-18.10

Regular Talk: Prof. Kostiantyn Niemchenko

Heat transfer dependence on boundary scattering in very long narrow conductors

J. Amrit¹, T. Medintseva², Ye. Nemchenko², K. Nemchenko², S. Rogova², T. Vikhtinskaya²

¹*LIMSI-CNRS, Université Paris-Saclay, 91405, Orsay, France*

²*V.N. Karazin Kharkiv National University, 61022, Kharkiv, Ukraine*

18.10-18.30

Regular Talk: Prof. Kostiantyn Niemchenko

Thermal conductivity of nanowires with boundary of different scattering types

J. Amrit¹, Ye. Nemchenko², K. Nemchenko², S. Rogova², M. Spotar², T. Vikhtinskaya²

¹*LIMSI-CNRS, Université Paris-Saclay, 91405, Orsay, France*

²*V.N. Karazin Kharkiv National University, 61022, Kharkiv, Ukraine*

18.30-18.50

Regular Talk: Mr. Oluwagbemiga P. Ojo

Intrinsically Low Thermal Conductivity by Heterovalent Cations Substitution: a case study of CuInSnSe₄

Oluwagbemiga P. Ojo and George S. Nolas

Department of Physics, University of South Florida, Tampa, FL, 33620, USA

19.00-19.20

Regular Talk: Dr. Alex Maznev

Ballistic nanoscale heat transport in silicon at room temperature
*Department of Chemistry, Massachusetts Institute of Technology, Cambridge MA
02139 USA*

19.20-19.50

Keynote Talk: Prof. Gang Chen

Phonon Heat Conduction Regime Map
*Department of Mechanical Engineering, Massachusetts Institute of Technology
Cambridge, MA02139, USA*

19.50-20.10

Regular Talk: Dr. Maksym Barabashko

**Heat capacity and thermal expansion: analyzing of atomic, molecular crystals
and carbon nanostructure systems**

M. S. Barabashko¹, R. M. Basnukaeva¹, A. I. Krivchikov¹, O. A. Korolyuk¹,
A. Jeżowski²

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²*Institute for Low Temperatures and Structure Research Polish Academy of Sciences,
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