

## PROGRAMME

### Critical Phenomena under Extreme Impact (CPUEI-2012)

September 10-13, 2012, Kharkov, Ukraine

*In celebration of the V.V. Eremenko 80-th Birthday*

#### September 10

9<sup>00</sup> – 9<sup>20</sup>

**Opening ceremony** (Conference Hall at ILTPE)

**1-st Session: Fundamentals of criticality in systems with competing interactions**

**Chaired by S.A. Gredeskul and A.A. Zvyagin**

9<sup>20</sup> – 10<sup>30</sup> **A.G. Zagorodny and B.I. Lev**, Bogolubov Institute of Theoretical Physics of the NAS of Ukraine

*Statistical description of structure formation in Coulomb-like systems*

10<sup>30</sup> – 11<sup>30</sup> **S. Saxena**, University of Cambridge (UK),

*Quantum criticality and superconductivity in spin and charge systems*

11<sup>30</sup> - 11<sup>45</sup>

Break

11<sup>45</sup> – 13<sup>00</sup> **M. Yu. Kagan**, P.L. Kapitza Institute for Physical Problems RAS

*Superconductivity in the low-density electron systems with repulsion*

13<sup>00</sup> – 15<sup>00</sup>

Lunch time

**Chaired by R. Shekhter and Eu.I. Buchshtab**

15<sup>00</sup> – 16<sup>00</sup> **J. Bartolome**, CSIC-University of Zaragoza (Spain),

*Highly unquenched moment in Fe Phthalocyanine*

16<sup>00</sup> – 17<sup>00</sup> **Yu.G. Pashkevich**, DonFTI of the NAS of Ukraine,

*Spin-state effect on phase separation and lattice dynamics in superconductive iron chalcogenides*

17<sup>00</sup> – 17<sup>30</sup> **A.S. Rybalko**, B.I. Verkin ILTPE NAS of Ukraine,

*Electrical properties of superfluid Helium*

17<sup>30</sup> – 18<sup>00</sup> **Kajal Ghoshray**, Saha Inst. of Nuclear Physics (India),

*Retention of structural phase transition and the dual nature of Sm-4f electrons in optimally doped superconducting  $\text{SmFeAsO}_{0.86}\text{F}_{0.14}$*

*Presentation of journal "Low Temperature Physics"*

## September 11

**2-nd Session: Science of Criticality for Security** (Sinelnikov Conference Hall at the V.N. Karazin University)

**Chaired by Helen Gomonai and S.Saxena**

9<sup>00</sup> – 9<sup>45</sup> **A.V. Bibik, E. Lubarsky, M. Quinlan, D. Shcherbik, and B.T. Zinn**, Georgia Institute of Technology (USA),  
*Control of Tangential Combustion Instability by Asymmetric Baffle*

9<sup>45</sup> – 10<sup>00</sup> Break

10<sup>00</sup> – 10<sup>45</sup> **S. Janos**, University of Bern (Switzerland),  
*Why low-temperature detectors?*

10<sup>45</sup> – 11<sup>15</sup> **Yu.M. Yampolski**, Institute of Radio Astronomy NAS of Ukraine,  
*Study of Atmospheric and Space Weather Interaction in Antarctica*

11<sup>15</sup> – 11<sup>30</sup> Break

11<sup>30</sup> – 12<sup>00</sup> **S.A. Gredeskul**, Ben Gurion University of the Negev (Israel),  
*Anderson localization in metamaterials*

12<sup>00</sup> – 12<sup>30</sup> **D.V. Kadygrob<sup>1</sup>, N.M. Makarov<sup>2</sup>, F. Perez Rodriguez<sup>2</sup>, T.M. Slipchenko<sup>1</sup>,  
V.A. Yampol'skii<sup>1,2</sup>, <sup>1</sup> Institute for Radiophysics and Electronics NAS of Ukraine,  
<sup>2</sup>Instituto de Ciencias, Benemerita Universidad Autonoma de Puebla, Mexico**  
*Enhanced transmission of terahertz radiation through periodically modulated slabs of layered superconductors*

12<sup>30</sup> – 12<sup>45</sup> Break

12<sup>45</sup> – 13<sup>15</sup> **Eu.I. Buchshtab, N.Ya. Fogel, O.I.Yuzepovich and M.Yu. Mikhailov**, Technion University (Israel), B.I.Verkin ILTPE NAS of Ukraine  
*Disorder in multilayer structures MoSi*

13<sup>15</sup> – 13<sup>45</sup> **S.I. Tarapov<sup>1</sup>, D.P. Belozorov<sup>2</sup>**, <sup>1</sup> Institute of Radiophysics and Electronics NAS of Ukraine, <sup>2</sup> Institute for Theoretical Physics, NSC “Kharkov Institute of Physics and Technology” NAS of Ukraine  
*Microwaves in dispersive magnetic composite media*

13<sup>45</sup> – 15<sup>00</sup> Lunch time

**Chaired by V.A. Yampolskii and Yu.M. Yampolski**

15<sup>00</sup> – 15<sup>45</sup> **A.A. Zvyagin**, B.I.Verkin ILTPE of the NAS of Ukraine,  
*Macroscopic thermal entanglement of inhomogeneous sets of qubits*

15<sup>45</sup> – 16<sup>30</sup> **G.V. Kamarchuk<sup>1</sup>, A.P. Pospelov<sup>2</sup>, A.V. Yeremenko<sup>1</sup>, A.V. Savitsky<sup>1</sup>, V.A.Gudimenko<sup>1</sup>, Eric Faulques<sup>3</sup>, <sup>1</sup>B.I.Verkin ILTPE of the NAS of Ukraine, <sup>2</sup>NTU “KPI”, <sup>3</sup>IMN, CNRS UMR6502, France,**  
*Point-contact gas-sensitive effect – a new prospective trend in point-contact spectroscopy and sensor engineering*

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## **September 12**

**3-d Session: Low dimensional structures** (Conference Hall at ILTPE)

**Chaired by J. Bartolome and S. Janos**

9<sup>00</sup> – 9<sup>45</sup> **V.G. Peschansky**, B.I.Verkin ILTPE of the NAS of Ukraine,  
*Galvanomagnetic phenomena in organic conductors*

9<sup>45</sup> – 10<sup>00</sup> Break

10<sup>00</sup> – 10<sup>45</sup> **Yu.V. Malyukin, V.P. Seminozhenko**, Institute for Single Crystals NAS of Ukraine  
*Low temperature spectroscopy of polaronic states in 1D Molecular chains (J-agregates)*

10<sup>45</sup> – 11<sup>00</sup> Break

**4-th Session: Critical behavior under external action** (Conference Hall at ILTPE)

**Chaired by V.G. Peschansky and A.V. Bibik**

11<sup>00</sup> – 11<sup>30</sup> **N.F. Kharchenko<sup>1</sup>, Yu.N. Kharchenko<sup>1</sup>, O.V. Miloslavsk<sup>1</sup>, V.M. Khrustalev<sup>1</sup>, V. M. Savitskiy<sup>1</sup>, and A. Szewczyk<sup>2</sup>, J. Wieckowski<sup>2</sup>, M. Gutowska<sup>2</sup>, <sup>1</sup>B.I.Verkin ILTPE of the NAS of Ukraine, <sup>2</sup>IF PAN, Warszawa (Poland),**  
*Spontaneous and magnetic field induced phase transformations in antiferromagnetic crystals of the LiCo- and LiNi- orthophosphates*

11<sup>30</sup> – 12<sup>15</sup> **G.E. Grechnev**, B.I.Verkin ILTPE of the NAS of Ukraine,  
*Effects of high pressure on electronic structure and magnetic properties of FeSe(Te) superconductors*

12<sup>15</sup> – 13<sup>15</sup> Lunch Time

**5-th Session: Magnetoelastic effects. Modern trends in spintronics** (Conference Hall at ILTPE)

**Chaired by M.Yu. Kagan and E.S. Syrkin**

13<sup>15</sup> – 14<sup>15</sup> **R.I. Shekhter**, University of Gothenburg (Sweden),  
*Spinro-mechanics of magnetic shuttle structures*

14<sup>15</sup> – 15<sup>15</sup> **H.V. Gomonay, V.M. Loktev**, Institute for Theoretical Physics of the NAS of Ukraine,  
*Magnetoelastic coupling and possibility of spintronic electromagnetomechanical effects*

15<sup>15</sup> – 15<sup>45</sup> **G.A. Zvyagina, K.R. Zhekov, I.V. Bilich, A.A. Zvyagin, I.A. Gudim, B.I. Verkin**  
ILTPE of the NAS of Ukraine,  
*Magnetoelastic effects in the vicinity of phase transitions in rare-earth ferrobates*

15<sup>45</sup> – 16<sup>00</sup> Break

**6-th Session: Anisotropy effects** (Conference Hall at ILTPE)

**Chaired by G.E. Grechnev and E.N. Khatsko**

16<sup>00</sup> - 16<sup>30</sup> **A. Feher, I.A. Gospodarev, E.S. Syrkin, S.B. Feodosyev**, P.J. Safarik University in  
Kosice, Slovakia, B.I. Verkin ILTPE of the NAS of Ukraine  
*Electron and phonon spectra of carbon nanofilms with local and extended defects.*

16<sup>30</sup> – 17<sup>00</sup> **V.I. Kut'ko, S.M. Poperezhai, N.S. Bondar**, B.I. Verkin ILTPE of the NAS of Ukraine,  
*Nonlinear dynamics of layered Jahn-Teller crystals of rare-earth compounds*

17<sup>00</sup> - 17<sup>30</sup> **Yu.A. Kosevich and V.I. Gann**, Institute of Physical Chemistry RAS, NSC “Kharkov  
Institute of Physics and Technology” NAS of Ukraine  
*Magnon localization in finite Heisenberg spin chains in inhomogeneous magnetic field*

17<sup>30</sup> - 18<sup>00</sup> **A.G. Anders**, V.N. Karazin University  
*Magnetic anisotropy in multilayer nanosystem Co-Cu*

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## **September 13**

**7-th Session: Smart materials** (Conference Hall at ILTPE)

**Chaired by A.G. Anders and Yu.A. Kosevich**

10<sup>00</sup> – 10<sup>30</sup> **E.N. Khatsko**, B.I. Verkin ILTPE of the NAS of Ukraine,  
*Ising singlet magnet  $KTb(WO_4)_2$ : magneto-resonance properties, phase transition*

10<sup>30</sup> – 11<sup>15</sup> **I.V. Zolocheskii**, B.I. Verkin ILTPE of the NAS of Ukraine,  
*Transport, resistive and high-frequency properties of the wide superconducting film*

11<sup>15</sup> – 11<sup>30</sup> Break

11<sup>30</sup> – 12<sup>00</sup> **G.P. Mikitik, Yu.V. Sharlai**, B.I. Verkin ILTPE of the NAS of Ukraine,  
*Berry's phase in topological insulators*

12<sup>00</sup> – 12<sup>20</sup> **Closing Ceremony**