

# Program of the International Conference Dubna-Nano2012

<u>Monday</u> 09	<u>Tuesday</u> 10	<u>Wednesday</u> 11	<u>Thursday</u> 12	<u>Friday</u> 13	<u>Saturday</u> 14
Opening	AC-1		THz	JJ-2	TI-2
QT	C-UCAG		AC-2	SCS-1	QD
TI-1	Graph-2	excursion	JJ-1	SCS-2	Conf. clos.
Graph-1	Posters		App-1	App-2	
Welcome party			Banquet		

## Monday, July 9 Morning session:

*Chairman V.A. Osipov*

### 10:00 – 10:15 Conference opening

10:15 – 11:00 P. Hawrylak [NRC-CNRC, Canada] “Semiconductor and graphene quantum dots”

*11:00-11:20 Coffee break*

### 11:20-12:50 Quantum Transport (QT)

*Chairman P. Hawrylak*

11:20-12:05 V. Galitski [Univ. of Maryland, USA] - “Floquet topological insulating states in semiconductor quantum wells and nanowires”

12:05-12:50 E. Ya. Sherman [Univ. of Basque Country, Bilbao, Spain] - “Order from Disorder: spin and charge transport in systems with nanoscale random spin-orbit coupling”

### Collective photo

*13:00- 14:20 Lunch*

## Afternoon session:

### 14:20 – 15:50 Topological Insulators (TI-1)

*Chairman X. Hu*

14:20-15:05 Yu.E. Lozovik [Inst. of Spectroscopy, Troitsk, Russia] - “Collective properties and phases of electrons in topological insulators and graphene”

15:05-15:50 O. Yazyev [ITP, EPFL, Switzerland] - “Bismuth chalcogenide topological insulators: first-principles computational exploration”

*15:50-16:10 Coffee break*

### 16:10-17:40 Graphene (Graph-1)

*Chairman*

16:10-16:40 E.F. Sheka [People’s Friendship University, Moscow, Russia] - “Computational Strategy for graphene: Insight from Odd Electrons Correlation”

16:40-17:10 E. S. Kryachko [Bogoliubov Institute for Theoretical Physics, Kiev, Ukraine] - “Mechanism of Endohedral Void Confinement of Carbon and Golden Fullerenes”

17:10-17:40 O.E. Glukhova [Saratov University, Russia] - “Theoretical Investigation of Properties of Curved Graphene Nanostructures”

### 19:30 – 22:00 Welcome party/boat trip

## **Tuesday, July 10**

### **Morning session:**

#### **09:30-11:30 Atomic clusters (AC-1)**

*Chairman V.O. Nesterenko*

09:30-10:15 E. Suraud [LTP-IRSAMC, Toulouse, France] - "Irradiation dynamics of clusters and molecules"

10:15-11:00 A.V. Solov'yov [FIAS, Frankfurt/Main, Germany] - "The multiscale physics of nanostructures self-assembling."

11:00-11:30 V.I. Yukalov [BLTP, JINR, Dubna, Russia] - "Coherent spin dynamics of nanomolecules and magnetic nanoclusters"

*11:30-11:50 Coffee break*

#### **11:50-13:05 Graphene (Graph-2)**

*Chairman*

11:50-12:35 Yu. Latyshev [IRE RAS, Russia] - "Quantum coherent effects in nanostructures based on layered materials"

12:35-13:05 I.V. Bondarev [North Carolina Central University, USA] - "Plasmon Nanooptics with Pristine and Hybrid Carbon Nanotube Systems"

*13:05- 14:20 Lunch*

### **Afternoon session**

#### **14:20-15:50 Superconducting structures (SCS-1)**

*Chairman*

14:20-14:50 I. Burmistrov [LITP, Chernogolovka, Russia] - "Enhancement of superconductivity by Anderson localization"

14:50-15:20 Ya. Fominov [Landau Institute for Theoretical Physics, Chernogolovka, Russia] - "Surface impedance of superconductors with weak magnetic impurities"

15:20-15:50 M. Khapaev [Moscow State University, Moscow, Russia] - "Spatial Distribution of electrical currents in high-T<sub>c</sub> grain boundary junctions"

#### **16:30-18:00 Poster session**

## **Wednesday, July 11**

### **Excursion**

## **Thursday, July 12**

### **Morning session:**

#### **09:30-11:00 Terahertz emission (THz)**

*Chairman V. Krasnov*

09:30-10:15 K. Kadowaki [University of Tsukuba, Tsukuba, Japan] - "Quantum Terahertz Electronics (QTE): Generation Of Coherent Radiation From Mesa Structures Of High Temperature Superconducting Bi<sub>2</sub>12 Intrinsic Josephson Junctions"

10:15-11:00 M. Machida [CCSE JAEA Japan] - "Electromagnetic Wave Emission from Intrinsic Josephson Stacks"

*11:00-11:20 Coffee break*

**11:20-13:05 Atomic clusters (AC-2)***Chairman*

11:20-12:05 P.-G. Reinhard Reinhard [Inst. Theor. Phys., Erlangen, Germany] –“Photo-electron spectra and angular distribution from clusters”

12:05-12:35 P. Seidel [Friedrich-Schiller-Univ., Jena, Germany] - “Effects of self-assembled gold nanoparticles on  $\text{YBa}_2\text{Cu}_3\text{O}_{7.8}$  thin films and devices”

12:35-13:05 S.V. Kolesnikov [MSU, Russia] - “Formation of Au nanocontacts at the room temperature: a kinetic Monte Carlo investigation”

*13:05-14:20 Lunch*

**Afternoon session:****14:20-16:05 Josephson junction (JJ-1)***Chairman*

14:20-15:05 V. Krasnov [Experimental [Stockholm University, Stockholm, Sweden] - “Soliton-antisoliton annihilation and breather self-oscillations in the coupled sine-Gordon equation”

15:05-15:35 V. Kurin [Institute for Physics of Microstructures, Nizhnii Novgorod, Russia] - “Distributed Josephson Junction between Multiband Superconductors”

15:35-16:05 Yu. Shukrinov [BLTP, JINR, Dubna, Russia] - “Resonance Features of Coupled Josephson Junctions: Some Unsolved Problems”

*16:05-16:25 Coffee break*

**16:25-18:10 Modelling, applications and perspectives (App-1)***Chairman P. Seidel*

16:25-17:05 V.L. Aksenov [LNP, JINR, Dubna, Russia] - “Neutron scattering by carbon nanostructures”

17:05-17:35 M. Kiselev [LNP, JINR, Dubna, Russia] – “Possibilities of the neutron and synchrotron radiation for the characterization of the lipid nanosystem”

17:35-18:05 A.A. Reshetnyak [ISPMS, Tomsk, Russia] - “Vibron Self-Trapped States in Biological Macromolecules: Comparison of Different Theoretical Approaches”

**Banquet****Friday, July 13****Morning session:****9:30-11:15 Josephson junctions (JJ-2)***Chairman M. Machida*

09:30-10:15 A. Ustinov [Karlsruhe Institute of Technology, Karlsruhe, Germany] - “Investigation of coherent two-level defects using Josephson junction qubits”

10:15-10:45 E. Il'ichev [IPHT, Jena, Germany] - “Superconducting multi-qubit systems”

10:45-11:15 A. Botha [University of South Africa, Pretoria, South Africa] - “Analysis of Chaos in Josephson Junctions”

*11:15-11:35 Coffee break*

**11:35-13:20 Superconducting structures (SCS-1)***Chairman*

11:35-12:20 Y.Asano [Hokkaido University, Sapporo, Japan] – “Odd-frequency Cooper pairs in spin-triplet superconducting proximity structures”

12:20-12:50 A. Zaikin [Karlsruhe Institute of Technology, Karlsruhe, Germany] - “Triplet Superconductivity In A Ferromagnetic Vortex”

12:50-13:20 A. Melnikov [Institute for Physics of Microstructures, Nizhnii Novgorod, Russia] - "Proximity-induced superconductivity in two-dimensional electronic systems"

13:20- 14:20 Lunch

### **Afternoon session:**

**14:20-15:50 Condensate and ultracold atomic gases (C-UCAG)** *Chairman Yu.E. Lozovik*

14:20-15:05 D.W. Snoke [Univ. of Pittsburgh, USA] – "Bose-Einstein condensation of long-lifetime polaritons"

15:05-15:35 V.O. Nesterenko [BLTP, JINR, Dubna, Russia] - "Tunneling and transport dynamics of Bose-Einstein condensates"

15:35-16:00 Coffee break

**16:00-18:00 Modelling, applications and perspectives (App-2)** *Chairman*

16:00-16:30 W. Nawrocki [Poznan Univ. Tech., Poznan, Poland] - "Physical properties of silicon and germanium nanowires"

16:30-17:00 A.P. Alodjants [Vladimir State University, Russia] – "High-temperature phase transitions in thermalized atom-light system under optical collisions"

17:00-17:30 A. Cherny [BLTP JINR, Dubna, Russia] - "Deterministic fractals: extracting additional information from small-angle scattering data"

17:30-18:00 A.L. Klavsyuk [MSU, Russia] – "Magnetism and self-organization of Co nanostructures embedded into Cu(100)"

### **Saturday, July 14**

#### **Morning session:**

**09:30-11:15 Topological Insulators (TI-2)** *Chairman O. Yazyev*

09:30-10:15 Xiao Hu [NIMS, Tsukuba, Japan] - "Manipulation of Majorana Fermions in Superconducting Vortex States"

10:15-10:45 Y. Nagai [CCSE, Kashiwa, Japan] - "Andreev Bound-states of vortices and surfaces in topological superconductors"

10:45-11:15 A.A. Sokolik [Inst. of Spectroscopy, Troitsk, Russia] - "Electron-hole Cooper pairing in topological insulator thin film"

11:15-11:35 Coffee break

**11:35 – 13:05 Quantum dots (QD)** *Chairman: V. Galitski*

11:35-12:05 R. G. Nazmitdinov [BLTP, JINR, Dubna, Russia; UIB, Palma de Mallorca, Spain] - "Correlation effect in vertical two-electron quantum dots in magnetic field"

12:05-12:35 A.V. Chizhov [BLTP, JINR, Dubna, Russia] - "Entanglement of electron orbital motion in open two-electron quantum dots"

12:35-13:05 S.I. Vinitzky [BLTP, JINR, Dubna, Russia] - "Spectral and orbital characteristics of spheroidal quantum dots"

**13:05- 13.30 Conference Closing**