

## Preliminary program of the International Conference Dubna-Nano2010

| <u>Monday</u><br>05/07 | <u>Tuesday</u><br>06/07 | <u>Wednesday</u><br>07/07 | <u>Thursday</u><br>08/07 | <u>Friday</u><br>09/07 | <u>Saturday</u><br>10/07 |
|------------------------|-------------------------|---------------------------|--------------------------|------------------------|--------------------------|
| Opening                | AC-1                    |                           | CNS-2                    | IJJ-1                  | QT-1                     |
| THz                    | QD-1                    |                           | JJ-2                     | App-2                  | APP-2                    |
| Graph-1                | JJ-1/Graph-2            | excursion                 | SCS-1/QD-3               | AC-2/SNS-1             | QT-2                     |
| CNS-1/App-1            | QD-2/Mod-1              | banquet                   | Posters                  | Mod-2/Graph-3          | Conf. clos.              |
| Welcome party          |                         |                           |                          |                        |                          |

### Monday, July 5 Morning session:

10:00 – 10:20 Conference opening

10:20 – 11:00 R. Kleiner [Univ. Tuebingen, Tuebingen, Germany]- “Imaging hot spots and THz waves in intrinsic Josephson junctions”

*11:00-11:20 Coffee break*

#### **11:20-13:00 Terahertz emission (THz)**

11:20-12:00 M. Machida [CCSE JAEA, Tokyo, Japan] – “Electromagnetic wave emission and reflection in Josephson junction; an analytical approach”

12:00-12:30 L. Ozyuzer [Izmir Inst. of Technology, Izmir, Turkey] – “Fine spectral features in terahertz wave emitting  $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_{8+d}$  mesas”

12:30-13:00 H. B. Wang [NIMS, Tsukuba, Japan] – “Terahertz emission from intrinsic Josephson junction at high bias and low bias”

*13:00- 14:20 Lunch*

### Afternoon session:

#### **14:20 – 16:10 Graphene (Graph-1)**

14:20-15:00 Yu.E. Lozovik (Inst. of Spectroscopy, Troitsk, Russia)-“Coherent phases in graphene and graphene based nanostructures”

15:00-15:40 T. Chakraborty (Univ. Manitoba, Winnipeg, Canada) "Fractional Quantum Hall Effects in Graphene"

15:40-16:10 D.D.Grachev (PFUR, Moskow, Russia)-“Quantum field model of the ferromagnetism in graphen structures”

*16:10-16:30 Coffee break*

*Parallel sections*

**16:30 – 18:00 Carbon nanostructures (CNS -1)**

16:30-17:00 F. Cavaliere (LAMIA CNR, DIFI, Università di Genova, Genova, Italy)-“Local Frank-Condon factors in suspended nanotube quantum dots”

17:00-17:30 J.K. Jang (Pusan National University, Korea) “Surface Deposition and Deformation of Carbon Nanotube via Collision”

17:30-18:00 A.M. Nemilentsau (BSU, Minsk, Belarus)-“Terahertz radiation absorption by the composites containing chemically modified carbon nanotubes”

**16:30 – 18:00 Application and perspectives (App-1)**

16:30-17:00 M. A. Kiselev [FLNP, JINR, Dubna, Russia] – “Lipid nanostructures”

17:00-17:30 W. Nawrocki [Poznan Univ. Tech., Poznan, Poland] - “Physical limits for scaling of integrated circuits”

17:30-18:00 P.Yu. Apel [FLNP, JINR, Dubna, Russia] - “The effect of surfactants on chemical developments on ion tracks in polymers”

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

**Tuesday, July 6**  
**Morning session:**

**9:00-10:40 Atomic clusters (AC-1)**

09:00-09:40 P.-G. Reinhard [Inst. Theor. Phys., Erlangen, Germany] – “Clusters in contact with substrates - the effect of the interface on cluster dynamics”

09:40-10:10 E. Suraud [LTP-IRSAMC, Toulouse, France] “Self Interaction correction in the time domain”

10:10-10:40 E. S. Kryachko [BITP, Ukraine and Chem. Dep., Univ. Liege] “The Magic Gold Cluster Au<sub>2</sub>(Td) and Its Low-Energy Fullerene-Type Isomers”

*10:40-11:00 Coffee break*

**11:00-12:40 Quantum dots (QD-1)**

11:00-11:40 V. M. Galitski [University of Maryland, USA] – “A general theory of spin-relaxation in two-dimensional semiconductors”

11:40-12:10 A. Puente [Dep de Fisica. Univers. de les Illes Balears, Spain] – “Interaction effects in quantum dots in a magnetic field”

12:10-12:40 O. Ciftja [Prairie View A&M University, USA] - “Realistic confinement potential for a square patterned two-dimensional semiconductor quantum dot and its approximated circular counterpart “

*12:40- 14:10 Lunch*

## **Afternoon session:**

### *Parallel sections*

#### **14:10-15:50 Josephson junction (JJ-1)**

14:10-14:50 T. Koyama [Univ. Tohoku, Tohoku, Japan] -“Electrodynamics and intrinsic Josephson effect in multi-gap superconductors”

14:50-15:20 Y. Ota [CCSE, JAEA, Tokyo, Japan] -“Theory of Josephson Effects in Iron-based Multi-gap Superconductor junctions”

15:20-15:50 A. M. Satanin [Nizhniy Novgorod State Univ. N. Novgorod, Russia] - “Amplitude spectroscopy of two coupled Josephson qubits”

#### **14:10-15:50 Graphene (Graph-2)**

14:10-14:50 L.A. Chernozatonskii (IBCP, RAS, Moscow, Russia)-“Nanostructures based on hydrogen-functionalized graphenes as materials for applications in nanodivices”

14:50-15:20 D. Khveschenko [UNC-Chapel Hill, USA] “Massive Dirac fermions in graphene”

15:20-15:50 Yu.V. Bludov (Univ. of Minho, Braga, Portugal)-“Surface plasmon polarizations in graphene layer: dispersion relation and excitation by attenuated total internal reflection method”

*15:50-16:10 Coffee break*

### *Parallel sections*

#### **16:10-18:00 Quantum dots (QD-2)**

16:10-16:40 E. S. Kadantsev [IMS NRC, Canada] “Theory of electron-hole exchange in semiconductor quantum dots”

16:40-17:10 A. Asgari [University of Tabriz, Iran] “The effects of polarization fields on exciton binding energy in gan quantum dot”

17:10-18:20 I. N. Filikhin [NCCU, Durham, USA] “Neighbouring levels statistic for Si/SiO<sub>2</sub> quantum dots”

#### **16:10-18:20 Modeling (Mod-1)**

16:10-16:40 M. Sargolzaei [Iran Univ. Sci. Tech., Tehran, Iran] “Magnetic properties of transition metals (3d) added on graphene: a density functional study”

16:40-17:10 N. Shahtahmassebi (Ferdowsi University of Mashhad, Mashhad, Iran)-“Tunnel magnetoresistance of an organic molecule junction”

17:10-18:20 A. A. Gusev (BLTP JINR, Russia)-“The application of adiabatic method for description of impurity states in quantum nanostructures”

## **Wednesday, July 7**

**Excursion**

**Banquet**

**Thursday, July 8**  
**Morning session:**

**9:00-10:40 Carbon nanostructures (CNS- 2)**

9:00-9:40 Yu.I. Latyshev (IRE, RAS, Moscow, Russia)-“Dirac fermions in graphite nanostructures”

9:40-10:10 R. Kerner (University of Paris-VI, Paris, France)-“Agglomeration model of carbon nanostructures”

10:10-10:40 A.A. Reshetnyak (ISPMS, Tomsk, Russia)-“Anomalous thermal conductivity in multiwalled carbon nanotubes with impurities ”

*10:40--11:00 Coffee break*

**11:00-12:40 Josephson junctions (JJ-2)**

11:00-11:40 P. Seidel [Friedrich-Schiller-Univ., Jena, Germany] – “Experimental and theoretical investigation on high-T<sub>c</sub> superconducting intrinsic Josephson junctions”

11:40-12:10 A. M. Klushin [IBN1-IT, Juelich, Germany]-“Towards terahertz Josephson radiation sources: recent results”

12:10-12:40 - to be announced

*12:40- 14:10 Lunch*

**Afternoon session:**

*Parallel sections*

**14:10-15:50 Superconducting structures (SCS-1)**

14:10-14:50 E. Goldobin [Univ. Tuebingen, Tuebingen, Germany] – “Supercurrent interference patterns in multifacet SIFS 0- $\pi$  Josephson junctions”

14:50-15:20 S. Kawabata [NIAIST, Tsukuba, Japan] - “Atomic scale 0- $\pi$  transition in a superconductor ferromagnetic-insulator heterostructure”

15:20-15:50 Kalenkov [LPI, Moscow, Russia] – “Crossed Andreev reflection in multiterminal superconducting hybrid structures”

**14:10-15:50 Quantum dots (QD-3)**

14:10-14:50 L.Serra [Univ. de les Illes Balears, Spain]-“Quantum wires and two-dimensional electron gases with inhomogeneous Rashba interaction”

14:50-15:20 R. G. Nazmitdinov [BLTP, JINR and UIB, Palma de Mallorca, Spain]-“Spin-orbit effects in semiconductor nanostructures in a magnetic field”

15:20-15:50 H. A. Sarkisyan [Russian-Armenian University, Armenia]-“Two electronic states layered quantum dots”

*15:50-16:10 Coffee break*

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

**Friday, July 9**  
**Morning session:**

**9:00-10:40 Intrinsic Josephson junction (IJJ-1)**

09:00-09:40 A. Koshelev [Argonne Nation. Lab., USA] –“Dynamic kink states in intrinsic Josephson junctions generated by internal resonance”

09:40-10:10 A. Irie [Utsunomiya Univ, Japan] – “Detection of THz radiation from intrinsic Josephson junctions”

10:10-10:40 Yu. M. Shukrinov [BLTP JINR, Russia] - “Longitudinal plasma wave nucleation in coupled system of Josephson junctions”

*10:40-11:00 Coffee break*

**11:00-12:40 Application and perspectives (App-2)**

11:00-11:40 F. V. Kusmartsev [Loughborough University, UK] - “Perspectives of superconducting nano-electronics”

11:40-12:10 V. R. Kornev [Moscow State Univ.] - “Progress in high-linearity SQIF structures”

12:10-12:40 Ch. Gadermaier [Dep.Complex Matter, Jozef-Stefan Inst., Ljubljana, Slovenia]-“MoSI nanowires: from a one-dimensional quantum fluid to self-organized critical self-assembled networks”

*12:40- 14:10 Lunch*

**Afternoon session:**

*Parallel sections*

**14:10-15:50 Atom clusters (AC-2)**

14:10-14:50 A.V. Solov'yov “Nanoparticles dynamics on a surface: fractal pattern formation and fragmentation”

14:50-15:20 V. N. Kondratyev [JINR + T-S National Univ. Kyiv, Ukraine] – “Dynamics of magnetic nanoparticle assembly”

15:20-15:50 A. Mikaberidze [MPI-PKS, Dresden, Germany] “Ultrafast formation of a resonant nanoplasma in doped helium droplets”

**14:10-15:50 Semiconductor nanostructures (SCS-1)**

14:10-14:50 V. V. Tugushev [ UPV/EHU, Spain]-“Proximity induced spin ordering at the ferromagnetic metal/dilute magnetic semiconductor interface”

14:50-15:20 Belyakov V.A. [Univ. of Nizhniy Novgorod, Russia] - “Relaxation processes in doped Silicon nanocrystals”

15:20-15:50 R. Kheradmand [University of Tabriz, Tabriz, Iran]-“Cavity solution mobility in semiconductor microresonators above laser threshold”

*15:50-16:10 Coffee break*

### **16:10-17:40 Graphene (Graph-3)**

16:10-16:40 M. Hayashi [Akita Univ., Japan] “Superconducting proximity effect in graphene nanostructures”

16:40-17:10 O.E. Glukhova (Saratov State University, Saratov, Russia)-“Elastic properties of graphene-graphane nanoribbons”

17:10-17:40 V.A. Fedirko [IMM RAS, Moscow] “Modelling of field emission from graphene”

### **16:10-17:40 Modelling (Mod-2)**

16:10-16:40 Yu. A. Sitenko (BITP, Kiev, Ukraine)-“Quantum scattering on vortices in nanophysics”

16:40-17:10 I. Yu. Popov [SPbSU ITMO, St.-Peterburg, Russia] “Model of fluid flow in nanotubes”

17:10-17:40 A. Goun [Princeton University, Princeton NJ, USA] “Theoretical models of the fluorescence excitation transfer in phase separating systems”

## **Saturday, July 10**

### **Morning session:**

#### **9:00-10:30 Quantum transport (QT-1)**

9:00-9:30 D. V. Strukov (University of California at Santa Barbara, USA)- “Coupled ionic and electronic transport model of thin-film semiconductor nanodevices”

9:30-10:00 A.D. Zaikin (Karlsruhe, Germany)-“Shot noise and Coulomb blockade of Andreev reflection”

10:00-10:30 M. Okumura (Japan Energy Agency, Japan)-“Anomalous non-equilibrium electron transport in one-dimensional quantum nano wire near half-filling: time dependent density matrix renormalization group study”

*10:30-10:50 Coffee break*

#### **10:50-12:40 Application and perspectives (App-3)**

10:50-11:30 B.K. Nikolic (USA)-“Graphene nanoribbons far from equilibrium: fundamentals, computational algorithms, and nanoelectronics applications”

11:30-12:00 A.Ya. Vul' (S.-P., Russia)“Detonation nanodiamonds as a new carbon nanostructure for nanotechnology”.

12:00-12:30 V.O. Nesterenko (JINR, Russia) “Transport of atoms and condensates”

*12:30- 14:10 Lunch*

### **Afternoon session:**

#### **14:10-15:40 Quantum transport (QT-2)**

14:10-14:40 M. Kato [Osaka Prefecture University, Japan]-“Vortex dynamics in finite superconducting networks and composite structures of d- and s-wave superconductors (d-dot)”

14:40-15:10 K. Hirata (Tsukuba, Japan)-“Intermediate vortex state in nano-scale and anti-dots and mesoscopic superconductors”

15:10-15:40 Ya.V. Fominov (ITP, RAS, Chernogolovka, Russia)- “Effective spin-flip scattering in diffusive superconducting proximity systems with magnetic disorder”

*15:40-16:00 Coffee break*

**16:00-17:00 Conference closing**