



FP7 - INCO.2010-6.1 - 266529 BY – NanoERA
**"Institutional Development of Applied Nanoelectromagnetics:
Belarus in ERA Widening"**

NanoERA Bilateral Seminar in Bulgaria

17-24 August 2012, in Sofia and Bugras

Program

17 August

Arrival of scientists from the Belarus State University, Institute for Nuclear Problems
Welcome at the Institute of Mechanics - Bulgarian Academy of Sciences (IMech-BAS), Sofia.
Meeting with Prof. Vasil Kavardjikov – Director of IMech
Meeting with the Bulgarian group, OLEM at IMech-BAS, Sofia, partner in NanoERA project

18-19 August

Free Program: visiting of sights of Sofia and Rila monastery

20 August

Scientific Seminar at IMech-BAS, Sofia

- 9:45 – 10:00 Registration
- 10:00 – 10:15 Opening
- 10:15 – 10:30 Overview of objectives and activities of NanoERA project
Sergey Maksimenko - project coordinator
- 10:30 – 11:00 Challenges and perspectives of nanoelectromagnetics
Sergey Maksimenko, Gregory Slepyan - Belarus State University
- 11:00 – 11:30 Electromagnetic properties of polymer composites filled with different nanocarbon inclusions in microwave frequency range
Polina Kuzhir et al. - Belarus State University
- 11:30 – 12:00 Nanomechanical properties and profiling of different materials using nanoindentation tester equipped with AFM and 3D Profilometer
Evgeni Ivanov – OLEM, Institute of Mechanics-BAS
- 12:00 – 14:00 Lunch Break

14:00 – 14:30 The first observation of antenna resonance in thin single-wall carbon nanotube films.

M.V.Shuba, A.G.Paddubskaya, P.P.Kuzhir, S.A.Maksimenko, et al.

Belarus State University

14:30-15:00 Effective non-distractive cutting of single-wall carbon nanotubes

M.V. Shuba, A.G. Paddubskaya, P.P. Kuzhir, S.A. Maksimenko, et al.

Belarus State University

15:00 – 15:30 Macro and micromechanical and tribological properties of different materials

I.Borovanska – Institute of Mechanics, Bulgarian Academy of Sciences

15:30-16:30 Round Table Discussion “Bilateral Collaboration between the Institute of Mechanics - BAS and the Institute for Nuclear Problems - Belarus State University within the NanoERA project”

21 August

Visit at Open Laboratory of Experimental Micro and NanoMechanics (OLEM)

Demonstration of the equipment and tests, available in OLEM, as for example:

- Macromechanical testing with UMT-2 (CETR, USA). Stress-strain tests in different modes (e.g. tensile, twist, three-point bending, compression, etc.), creep and relaxation.
- Micromechanical testing with UMT-2 (CETR, USA). Tribology: friction and wear, coefficient of friction. Microscratch. Microindentation.
- Nanomechanical testing with UNMT (CETR, USA) and AFM. Nanoindentation with Berkovich indenter. Scanning with AFM of the nanoindentation imprint.
- Nanostructure - Scanning of the surface with Atomic Force Microscopy.
- 2D and 3D profiling of the surfaces. 3D topography for quantitative and qualitative determination of roughness of the surfaces. 2D and 3D scanning and topography of the profile of the imprint after scratch, friction and microindentation test.
- Rheological and DMTA investigations with AR-G2 rheometer (TA Instruments).

22-23 August

Visit at Open Laboratory of Experimental Micro and NanoMechanics (OLEM)

Selected experiments with samples provided by the visiting partners from the Institute for Nuclear Problems - Belarus State University.

24 August

Presentation of NanoERA project at Burgas Prof. Assen Zlatarov University

Short Seminar with selected presentations
Round Table Discussion
Closing of the meeting