PROJECT START COLLABORATION CASE 4

Internship programme for scientists of the ISM at the Institute of High Pressure Physics UNIPRESS

Objects of cooperation

V. Bakul Institute for Superhard Materials of the National Academy of Sciences of Ukraine is engaged in the development of processes for production and application of synthetic diamond, cubic boron nitride and other superhard materials, as well as tools of the above materials, new nano-products – including ready-to-use-type nano-materials colloid solution on water-soluble and insoluble liquid bases (http://www.ism.kiev.ua).

Institute of High Pressure Physics (UNIPRESS) refers to the Polish Academy of Sciences.
The main aim of the Institute is a usage of high pressures methods for fundamental researches as well as for technologies development within the beneath listed areas:

- Solid-state physics;
- Optoelectronics;
- Nano-technologies;
- Biomaterials and foodstuffs conservation;
- Metal formation under pressure.

The scope of cooperation

The aim of the visit was an integration of V. Bakul Institute for Superhard Materials research assistants into the research group of Institute of High Pressure Physics (UNIPRESS) for joint scientific experiments conduction on determination of a possibility of practical usage of nano ferromagnetic colloid solution in a form of liquid crystals for new super overall tv screens development and for investigation of stability of nano metals colloid solution within different liquid bases and their water compositions.

The obtained results

Bilateral agreement between the two organizations about cooperation and acceptance of joint activities plan on 7 Framework Programme and further Framework Programmes' projects searching that will be performed together with other EU organizations during 2014-2015 was signed. Moreover, a decision on finance support of seven young researchers who are preparing reports and presentations of their innovation developments for two-days seminar «New nano materials and technologies» within yearly congress of European materials science community in Warsaw was agreed.

Process of achieving results

Research activities were conducted. As a result, an influence of hydroglyceric liquid basis for strength and aggregative stability of concentrated nano materials colloid solutions was specified for their practical usage within television and high-accurate print with nano ink. The experimental researches that were performed became a base for bilateral Ukrainian-Polish agreement about cooperation between Institute for Superhard Materials and Institute of High Pressure Physics signing.

Plans for future

Foundation creation for long-term partner relations between V. Bakul Institute for Superhard Materials of the National Academy of Sciences of Ukraine and Institute of High Pressure Physics (UNIPRESS) (Warsaw, Poland). Promotion of scientific-research achievements and new hi-tech products of V. Bakul Institute for Superhard Materials at the European level, development of cooperation and communication channels with scientific centers of European Union.