PROJECT START COLLABORATION CASE 5

On-the-job FP7 training in France

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, high-density high-tech ceramics, cemented carbides, superconducting ceramics, structural products and tools of the above materials (http://www.ism.kiev.ua).

Institute P' has a long term cooperation with the Institute for Superhard Materials in the field of synthesis of nanolamelar MAX materials and their structure and properties investigation for new perspective application. (http://www.univ-poitiers.fr)

The scope of cooperation

The visit's aim was to integrate four of ISM's young researchers in research teams of Institute P' for providing «on-the-job» training on FP7 projects proposal submission and familiarising with the entire process of 'real' FP7 proposal preparation as well as the opportunity to take part in FP7 collaborative research.

The obtained results

Four possible project proposals were prepared under the discussion between French and Ukrainian partners. Four young ISM researchers (less than 35 years old) were involved in the discussion. Prepared projects are from the following areas:

- optimization of the structure and properties of MAX phases materials by high pressure-high temperature treatments;
- phase diagram and synthesis of new superhard materials in the B-N-O system under high pressures;
- irradiation effects on the nanostructure and properties of high temperature superconductors prepared under high pressure.

Process of achieving results

The careful analysis of projects proposals «White paper» prepared in connection with the «FP7 2013 Work Programme of THEME 4 – NMP» has been performed. As a result, the directions «Nanotechnology for multifunctional lightweight construction materials and components» and «Innovative materials for advanced applications» were selected. Projects proposals «White paper» contains the object of scientific and technology collaboration, work program and time schedule. The discussions concerning amount and qualification of the European partners, availability of necessary research facilities for the projects successful implementation and research team's interaction for attaining outstanding scientific results were held.

Plans for future

The main role of the conducted «on the job FP7 training» and prepared projects is opening of the wide European perspectives for the research work and subsequent education of young ISM scientists and enhancing the movement of the Institute for Superhard Materials toward introduction into European Research Society.