



Boosting EU-Ukraine cooperation in the field of Superhard Materials

NEWSLETTER No4

CONTENT

Delegation tours 2nd round	2
Info-day in Kyiv	5
Training workshop	7
Announcement of planned events in September 2013	9



Boosting EU-Ukraine cooperation in the field of Superhard Materials

Delegation tours 2nd round

Second Delegation Tour was organized on April 23-27 for researchers from Poland, France and Sweden. The main aim was the acquaintance with research facilities, experimental methods, activity and actual research topics of the visited organisations, initiate joint research activities, discuss possibility for application of joint Ukraine-Poland, Ukraine-France, Ukraine-Sweden and HORIZON-2020 research project.

Note	
Title	Thematic priorities of FP7 opened calls and opportunities for Ukrainian organizations participation
Date	April 23-27, 2013
Venue	Kyiv, Ukraine
Organizer	V.N. Bakul Institute for Superhard Materials (ISM) of the NASU
Number of participants	41

The team of EU researchers has visited the following scientific Ukrainian institutes:

- Institute for Superhard Materials (24 April) NAS of Ukraine (Kyiv),
- Institute of Problems of Materials Science (25 April) NAS of Ukraine (Kyiv),
- Institute for Metal Physics (IMP) NAS of Ukraine (Kyiv), National Technical University of Ukraine (26 April),

The aforementioned institutes are the members of educational and scientific associations in the field of the "Material", "Metallurgy and Special Materials", "Materials and Metallurgy".

A group of high level EU researchers participated in the tour, including:

- S. Porowski, deputy director of the Institute of High Pressure Physics, Warsaw, Poland.
- Prof. B. Palosz, deputy director of the Institute of High Pressure Physics, Warsaw, Poland.
- Prof. S. Dubois, pro-rector of the Poitiers University, France.
- Prof. T. Cabioch, professor of the Poitiers University, France.
- Dr. P. Chartier, assistant Professor of the Poitiers University, France.
- Dr. V. Solozhenko, director of Research of LSPM CNRS, Villetaneuse, France.
- Prof. J.-E. Stahl, professor of the Lund Technical University, Sweden.
- Dr. V. Bushlya, postdoc researcher of the Lund Technical University, Sweden.

Boosting EU-Ukraine cooperation in the field of Superhard Materials

In the ISM, the Director Prof. Novikov pointed out the main results achieved during the time of the Project START, outlined a plan for further work.

Members of delegations tour listened to prof. Nikitin's, L. Kisterka, Prikhna, Turkevych and Solozhenko.

At the end of the meeting, the participants of delegations tour had the special excursion, with a focus on manufacturing and measuring facilities of IMS, which will be involved within the planned international projects. They saw these experimental facilities, as high pressure toroidal apparatus, apparatus for diamond growth on the seed in the solution (Ivachnenko), X-ray diffractometers DRON-3M, Rigaku ULTIMA4, Microhardness tester Matsuzawa Mod, MXT-70 (Japan), Mechanical microanalyser Nanoindenter II (Nano Instrument Inc., USA), SEM–Auger analyzer JAMP–9500F (available at Proton 21 organization), Vickers Hardness testers. Zeiss EVO 50 microscope equipped with energy dispersive XVP spectrometer INCA PentaFETx3 (Oxford).



Meeting



Excursion into the laboratory of ISM

25 April the European delegation was acquainted with results of work of large IPMS-research complex departments, which includes a pilot production, a computer center and the Center for Collective Use the device "TEM-SCAN".

During the tour of the institute, the delegation visited the historical museum, laboratory synthesis of nanopowders and coating of them.



Laboratory for synthesis of nano-powders IPM



In the exhibition hall of the IPM

Boosting EU-Ukraine cooperation in the field of Superhard Materials

At the G.V. Kurdyumov Institute for Metal Physics of the NAS of Ukraine members of delegations tour had the opportunity to learn about the main areas of the institute's basic research.

Basic research carried out at the institute led to the creation of unique metallic materials that can work in difficult conditions, as well as the creation of new devices using these new materials.

Members of delegations tour acquainted with specialized complex for research in the physics of metals at both low and ultra-low temperatures thanks to which it is possible to carry out research and development in the field of low-temperature metal physics, superconductivity and superconducting electronics.

The last item in the viewing of IMP was the Center for collective use of NASU, excursions which held by Dr. of Physics L. Karbivsky.



NMR of Center for collective use



CEM of center for collective use

26 April delegation visited KPI where prof. Loboda told about the history of the establishment of one of the oldest technical institutions of Ukraine.

Members of the delegation also inspected buildings, the research base of the Institute.

They also visited the laboratory "New materials and technologies in the industry", Center of electron microscopy, laboratory of optical research, laboratory of magnetic research.



Center of electron microscopy



Laboratory of optical research

Info-day in Kyiv

The information day "Nanotechnology and advanced materials and new production technologies in the new program for research and innovations EU HORIZON 2020" that was organised in Kiev, Ukraine by V.N. Bakul Institute for Superhard Materials of the National Academy of Sciences with a support of START project consortium partners. The aim was to present innovation programs for research and creates new superhard materials.

Note	
Title	"Nanotechnology and advanced materials and new production technologies in the new program for research and innovations EU HORIZON 2020"
Date	16 May 2013
Venue	Kyiv, Ukraine
Organizer	V.N. Bakul Institute for Superhard Materials (ISM) of the NASU
Participants	57

The principal researchers attended the meeting: Prof. NikolayNovikov, Prof. Tatiana Prikhna, Prof. SergiyKlimenko, Prof. VolodymyrTurkevych, Ph.D. LudmilaKisterska for V.N. Bakul Institute for Superhard Materials of the National Academy of Sciences of Ukraine (ISM).



Opening remarks, prof. NikolayNovikov



Conference participants

Within the informational day the FP7 projects: BILAT-UKR*AINA (<http://www.bilat-ukraina.eu>) and START "Boosting EU-Ukraine cooperation in the field of superhard materials" were presented. The presentations of projects ended with the Call for joint action.

Relevant information for the event's participants was the structure and main features of the new EU program for funding research and innovation HORIZON 2020. Despite the fact that the Calls of HORIZON 2020 have not been announced yet, the actions required for the successful project proposals applying need to be implemented currently

Presentation of preconditions of forming Ukrainian technology platform "Advanced materials and their use in Ukraine" served as important information and a starting point for the discussion at the last part of the event.



Boosting EU-Ukraine cooperation in the field of Superhard Materials

Two points of view on the role of platform arisen during the discussion:

- platform as a tool for technology transfer from science to business, and service to the academic institutions as search tool for orders from business;
- platform as a tool to wider business community involvement in formulation applied tasks to science and the formation of research topics of research institutes and universities on the basis of public-private partnership.



As a result, the panellists noted that the plan for UNTP "Advanced materials and their use in Ukraine" needs refinement to expand the range of stakeholders from among universities and business, as well as determine the actual stages of formation of platform, taking into account the prospects of participation of Ukrainian organizations in the new EU program "HORIZON2020".

Training workshop

The discussion-seminar "Methods for the preparation and implementation innovative projects in Ukraine" was organised in Kiev, Ukraine by V.N. Bakul Institute for Superhard Materials of the National Academy of Sciences with a support of START project consortium partners.

The workshop was divided into three sessions:

1. The main mechanisms of creation and implementation of innovative solutions
2. Examples of preparation and implementation of innovative projects in Ukraine
3. Presentation and discussion of innovative projects of ISM

In the first two sessions of WORKSHOP participants could become acquainted with the experience of leading innovative structures and organizations that operate in Ukraine, and receive advices and recommendations from successful managers of innovation projects. At the last third session of WORKSHOP, four innovative projects from employees of ISM were presented.

Note	
Title	"Methods for the preparation and implementation innovative projects in Ukraine"
Date	17 May 2013
Venue	Kyiv, Ukraine
Organizer	V.N. Bakul Institute for Superhard Materials (ISM) of the NASU
Participants	40



ISM's researcher



ISM's researcher

Reports about the transfer of technology and exchange of information with international partners were made by the following speakers: Inna Gagauz, OlenaFesenko, Ivan Kulchytsky, Olga Kot, Leonid Chernyshev, VyacheslavSolovyov, EvgeniaSiveryanina, IgorHudetsky. And young scientists presented their projects in the field of nanotechnology and advanced superhard materials.



Boosting EU-Ukraine cooperation in the field of Superhard Materials

WORKSHOP was attended by representatives of four organizations in Ukraine that coordinate projects of FP7, namely:

- V.N. Bakul Institute for Superhard Materials of the National Academy of Sciences (project START - <http://www.start.ism.kiev.ua>);
- Institute for Scintillation Materials of Academy of Science of Ukraine (project SUCCESS - <http://www.success.kharkov.ua>)
- Institute of Physics of the National Academy of Science of Ukraine (project Nanotwinning - <http://www.iop.kiev.ua/~nanotwinning>)
- Institute of Hydromechanics of National Academy of Sciences of Ukraine (project ERAIHM - <http://hydromech.com.ua/ukr/eraihm.html>)
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Guests from research institutes



VolodymyrTurkevych with report about the development of the institution

During the workshop the following key elements of the innovative project formation were discussed:

- idea generation, based on scientific experience and achievements of the author in accordance with the priorities of development the research organization and scientific and technical policy in Ukraine and abroad, especially in the EU;
- practical steps on the transformation a research idea into the concept of innovation project;
- modification of the concept of innovation project in accordance with the priorities in the Call for proposals of EU programs or other Funds, e.g. CRDF;
- finding partners, especially from Industry and SMEs;
- creation of an effective team work for preparation of proposals (I.e., formation of effective groups for preparation of project proposals);
- formation of proposal structure and discussions with partners expected contributions;
- submission of the project to the contest and holding negotiations with donors.



Boosting EU-Ukraine cooperation in the field of Superhard Materials

Announcement of planned events in September 2013

1. The "**On the Job FP7 Training**" will be held in Warsaw (Poland) on **September 16-27, 2013**. A group of scientists from the ISM will attend the training, namely: KisterskaLiudmyla, GarbuzTetiana.
2. The "**Research Internships**" will be held in Warsaw (Poland) on **September 16-27, 2013**. A group of scientists from the ISM will attend the intership, namely: levdokymovaOlha, KolabylinaTetiana.
3. The "**Delegation tour**" will be held in Warsaw (Poland) on **September 23-25, 2013**. A group of scientists from the ISM will attend the delegation tour, namely: KushchVolodymyr, OsipovOleksandr, Smirnova Tamara, TurkevichVolodymyr, Mr.Kozyrev A
4. EU-Ukraine Partnership Information Day "**HORIZON 2020 and R&D&I in Nanotechnology and Advanced Materials**" will be held in Warsaw at the Institute of High Pressure Physics of the Polish Academy of Sciences on **23 September 2013**.
Organizers of the Info-day:
 - V. Bakul Institute of Superhard Materials NAS of Ukraine (ISM),
 - Institute of High Pressure Physics of the Polish Academy of Sciences (UNIPRESS),
 - Polish National Contact Point for Research Programmes of the European Union (KPK).