

### **Joint research at the Universities of Cologne and Paterborna (Germany) - project DFG UKR-68**

For grants of the German Science Foundation (DFG) Prof. VV Buldyhin and OI Klesov conduct joint research on topical areas of probability theory, mathematical analysis and number theory together with the leading scientists in Germany and France. In particular, grant DFG supported the joint Ukrainian-German project "Theory of functions of pseudo-regular variations and its Applications", which authors are VV Buldyhin, K.-H. Indlekofer, O. Klesov and J. Shtaynebah.

In July-August 2011, Professors V. Buldyhin, O. Klesov trained in Germany at the invitation of the Institute of Mathematics, Cologne (Germany).

In September 2011 an international conference "Functional methods in probability theory and probabilistic number theory" organized by Prof. V. Buldyhin and O. Klesov and their German partners J. Shtaynebah and K.-H. Indlekofer. To participate in the conference, invited leading experts on modern "theory of recovery" from Hungary, Lithuania, France, Poland, Canada, Australia, USA, Russia and from Ukraine and Germany.

### **Agreement with the Faculty of Science University of Cergy Pontoise, France**

Continued cooperation under the agreement on scientific and educational relations between the Faculty of Science and Technology University of Cergy-Pontoise, physical and mathematical faculty, signed in 2009. The purpose of the agreement is the development and improvement of teaching and research on those areas of physics and mathematics of common interest to professionals in each of the faculties. Scientific communications between scientists of our schools have some traditions that are based on joint publications and participation in joint research activities. Cooperation will be implemented by participating teachers and graduate students in seminars, conferences, reading and listening to lectures, work in the library and more. Both departments are working on mechanisms that allow exchange students to study various terms, including the level of mutual training of students at the undergraduate, master joint management diplomas. Ability to work on under the direction of renowned experts in France will allow graduates FMF acquainted with modern applications of physics and mathematics to develop scientists Cergy-Pontoise. In combination with a high theoretical level, our scientists' inherent cooperation will be beneficial to both departments. Together will also develop more advanced courses applied direction. We discuss also the opportunity to attend French language courses organized by the Embassy of France in Ukraine, students at FMF cost the French side. On the basis of competition the best students can also receive scholarships for study of the French Embassy in Ukraine.

### **International Project P-273 (EOARD 068003)**

In international project R-273 (EOARD 068009) "Computer simulation of the basic physical and mechanical processes for ceramic composites crystallized directed system LaB6 - MeB2 (Me - Ti, Zr, Hf) in macro-, meso-and micro structure" (Leading organization - Institute of Materials Science named of I.M. Frantsevich NASU, Department of Applied Mathematics and computer simulation in materials science NASU, Department of Applied mathematics and computational experiments in materials science) involved Assoc. Baranovska L.

### **Cooperation Agreements "KPI" and Clarkson University**

Compatible with Clarkson University, NY, Centre of Advance Material Processing at the Department of Physics and Solid State Physics research is conducted and controlled growth of colloidal nanoparticles in the framework of a cooperation agreement "KPI" and Clarkson University in October 2008.

### **Los Alamos National Laboratory USA, NM**

In collaboration with Los Alamos National Laboratory USA, NM conducted research on optical communications in turbulent atmosphere and supersensitive detectors of optical radiation. Appropriate collaboration performed by Prof. V. Gorshkov and post-graduate students S.Torous, J. Pobyvaylo.

### **The contract of partnership, cooperation and scientific exchange between the NTU "KPI" and the establishment of the Russian Academy of Sciences of the Computing Centre name of Dorodnitsyn**

Coordinator of NTU "KPI" - Professor of Mathematical Physics Bejko IV,