

EVENTS 2013:
INTERNATIONAL SCIENTIFIC CONFERENCE
“FUNCTIONAL MATERIALS” ICFM’2013
(Haspra, Crimea, Ukraine, September 29 - October 5, 2013)

Berzhansky V. N.

Taurida National V. I. Vernadskii University, 4 Vernadsky Ave., Simferopol 95007, Ukraine
E-mail: roton@crimea.edu

International conference “Functional Materials” (ICFM'13) held in Haspra (Yalta, Crimea, Ukraine) from September 29 to October 5, 2013.

During last 12 years Taurida National V. I. Vernadsky University holds international scientific conferences “Functional Materials” (ICFM) to discuss topical problems in physics, technology and applications in modern materials engineering with novel functional properties. Special attention is paid to the development of new directions in nanophysics and nanotechnology, such as spintronics, magnonics, biosensorics. During the Crimean Conferences ICFM (from 2001 to 2013) more than 3,000 reports on various aspects of the science of functional materials were heard. The conference ICFM'13 was dedicated to 150th Anniversary of V. I. Vernadsky and 95th Anniversary of Taurida National V. I. Vernadsky University.

Co-organizers of the conference were ICFM'13 Ministry of Education and Science of Ukraine, a number of a top academic institutes and universities of Ukraine (Taurida National V.I. Vernadsky University, Institute of Magnetism of NASU&MESU, Donetsk Institute for Physics and Engineering of NASU, Institute for Scintillation Materials of NASU, Institute for Single Crystals of NASU) and State Fund for Fundamental Researches of Ukraine. International Associated Laboratory “LICS/LEMAC” established of the National Center for Scientific Research (CNRS) and the State Funds for Fundamental Researches of Russian Federation and Ukraine were included to the organizers. Leading scientists of UK, France, USA, Spain, Finland, Germany, Japan, Korea, Russia, Belarus and Ukraine were the members of International Advisory and Scientific Committees.

International Advisory Committee: V. Baryakhtar, Chairman (Ukraine), J. Barandiaran (Spain), S. H. Cho (Korea), S. Demokritov (Germany), V. Fedosyuk (Belarus), B. Grinyov (Ukraine), J. Gonzales (Spain), D. Mapps (UK), S. Nikitov (Russia), Ph. Pernod (France), K. Sato (Japan), A. Slavin (USA), H. Szymczak (Poland), K. Ullakko (Finland), V. Ustinov (Russia).

Scientific Committee: Yu. Gorobets, Co-Chairman (Ukraine), A. Zvezdin, Co-Chairman (Russia), N. Bebenin (Russia), A. Belyaeva (Ukraine), V. Berzhansky (Ukraine), A. Granovsky (Russia), B. Ivanov (Ukraine), B. Kyyak (Ukraine), V. Loktev (Ukraine), I. Lyubutin (Russia), S. Oshkaderov (Ukraine), S. Ovchinnikov (Russia), G. Petrakovsky (Russia), A. Pogorily (Ukraine), V. Preobrazhensky (France),

L. Prozorova (Russia), S. Ryabchenko (Ukraine), A. Sigov (Russia), A. Tolmachev (Ukraine), M. Valakh (Ukraine), V. Varyukhin (Ukraine), A. Zhukov (Spain), S. Ubizsky (Ukraine).

Organizing Committee: V. Berzhansky, Chairman (Ukraine), A. Gorbovanov (Ukraine), A. Murava-Sereda (Ukraine), T. Mikhailova (Ukraine), M. Paukov (Czech Republic), S. Polulyakh (Ukraine), V. Popov (Ukraine), H. Potapova (Ukraine), I. Pozdeyeva (Ukraine), T. Starchevskaya (Ukraine).

The conference was held in cooperation with the national scientific journal "Functional Materials", which, thanks to the high level of the published articles included in the international electronic system "Scopus".

At the initiative of the French partners of Taurida National V. I. Vernadsky University on International Laboratory LIA "LICS" and the National Center of Scientific Researches of France the separate meeting was held. The future program for scientific and technological cooperation of EU «Horizon 2020» was discussed. The Co-Director of the Laboratory LIA "LICS" Prof. Philippe Pernod and Head of International Relations of Taurida National V. I. Vernadsky University Aurika V. Murava-Sereda made the presentations.

By the Ministry of Education and Science, Youth and Sports of the ARC Members of the International Advisory Committee of the conference ICFM'2013 Prof. Andrei Slavin (Chair of Department of Physics, Oakland University, Rochester, USA) and Prof. Philippe Pernod (Co-Director of Joint International Laboratory LICS/LEMAC, Institut of Electronics, Microelectronics and Nanotechnology, Ecole Centrale de Lille, France) have been awarded the Certificate of Merit for his personal contribution to the development of science and support of the international scientific conferences in Crimea.

The materials on ICFM'2013 were submitted by 1416 authors from 36 countries: Austria, Azerbaijan, Algeria, UK, Belarus, Germany, Hungary, India, Jordan, Iran, Ireland, Italy, Kazakhstan, China, Korea, Lithuania, Moldova, Netherlands, Poland, Portugal, Russia, Saudi Arabia, Syria, Slovakia, USA, Turkey, Uzbekistan, Ukraine, Finland, France, Czech Republic, Switzerland, Sweden, Estonia, Japan. Program committee considered about 500 abstracts and included in the conference program 467 reports, among them 28 lectures, 75 orals and 364 posters. About 330 people, including 90 academicians, professors, doctors from different countries, attended in the work of conference.

Ukraine was represented by the following scientific and educational institutions:

- Institute of Magnetism NASU and MESU (Kyiv);
- G.V. Kurdyumov Institute for Metal Physics NASU (Kyiv);
- Taras Shevchenko National University of Kyiv (Kyiv);
- National Technical University of Ukraine "KPI" (Kyiv);
- Institute for Macromolecular Chemistry NASU (Kyiv);
- V.Ye. Lashkaryov Institute of Semiconductor Physics NASU (Kyiv);
- Institute of Molecular Biology and Genetics NASU (Kyiv);
- Institute of Physics NASU (Kyiv);
- National University of Life and Environmental Sciences of Ukraine (Kyiv);
- Taurida National V.I. Vernadsky University (Simferopol);

- Institute for Scintillation Materials NASU (Kharkov);
- Institute for Single Crystals NASU (Kharkov);
- B. Verkin Institute for Low Temperature Physics and Engineering NASU (Kharkov);
- V.N. Karazin Kharkiv National University (Kharkov);
- National Scientific Center “Kharkov Institute of Physics and Technology” (Kharkov);
- Polus-N LLC (Kharkov);
- A.A. Galkin Donetsk Institute for Physics and Engineering NASU (Donetsk);
- Donetsk National University (Donetsk);
- Lviv Polytechnic National University (Lviv);
- A.V. Bogatsky Physico-Chemical Institute NASU (Odessa).

In conference 3 plenary, 10 oral and 14 poster sessions (total 27) were held from the following of scientific sections:

- Fundamental Physics of Functional Materials;
- Hard & Soft Magnetic Materials;
- Materials for Spintronics. Thin Films & Multilayers;
- Plasmonics & Photonics. Electro & Magneto-optic Materials;
- Piezo & Magnetoelectric Materials. Multiferroics;
- Magnetoelastic & Adaptive Materials;
- Magnetic Dynamics. Meta & Microwave Materials;
- Luminescent & Radiation Sensing Materials;
- Nanophysics & Nanotechnologies for Functional Materials;
- Materials for Medical Applications. Biosensors;
- “Green” Materials & Technologies for Sustainable Development;
- New Techniques & Equipment for Materials Research.

The working language of the conference was English. In plenary and oral sessions 34 invited reports of leading scientists were presented. Such important topics as topological insulators, spintronics and magnonics, scanning probe microscopy, laser control of magnetism and femtosecond magnetism, magnitoplasmonics and acoustomagnitoplasmonics, magnetoelectric and multiferroics have been reflected in the invited reports and lectures.

The conference proceedings were published before the conference [1] and full papers will be published in a special issue of the journal “Functional Materials” in the first quarter of 2014 [2].

Registration of participants and the presentation of its program held at the conference web-site <http://www.icfm.crimea.edu>, which was widely represented in the World Electronic Scientific Resources.

Interdisciplinary nature of the conferences ICFM allows professionals working in various fields of functional materials, to assess the achievements and enrich ideas that are implemented in the related fields of solid state physics.

As the priority tasks that were resolved at the conference it was noted the following:

- Expansion of theoretical and applied research related to the study, the synthesis and application of spintronics materials and metamaterials;
- Theoretical and experimental investigation of magnetoelectric phenomena and the search for new materials with magnetoelectric properties;
- Expansion of research in the field of femtosecond spin dynamics, nonlinear magneto-optics and magnetoacoustics;
- Expansion of works in the field of synthesis of new adaptive materials (materials with shape memory effect), sensitive to external magnetic field;
- Synthesis and study of new fast scintillation materials with high energy resolution and light output;
- Synthesis and study of new nanostructured materials, including materials with giant magnetoresistive effects;
- Development of the theory of static and dynamic properties of nanoscale films and particles;
- Search for new materials and application of known materials for medical diagnostic equipment;
- Development of innovative technologies (“green” materials and technologies) to lower negative influence to the environment.

It should be noted that many young scientists, graduate and undergraduate students, participated in conference. Organizing Committee held the competition for the best young scientists report. Diploma for outstanding presentation among young scientists on the International Scientific Conference ICFM'2013 is awarded to I. Kazakov (Moscow, Russia), D. Afanasiev (Nijmegen, The Netherlands), A. Poltoratskaya (Donetsk, Ukraine), P. Bondarenko (Kiev, Ukraine), N. Lugovs'kyi (Simferopol, Ukraine), V. Khatsaiuk (Simferopol, Ukraine), K. Chichay (Kaliningrad, Russia), V. Chicherina (Kiev, Ukraine), L. Gorbach (Kiev, Ukraine), S. Kondovych (Kiev, Ukraine), S. Makarenko (Kiev, Ukraine).

International Conferences on Functional Materials, which Taurida National V.I. Vernadsky University holds, enable Ukrainian researchers regularly present the results of their works, to get acquainted with the current state of science and applied research in this area, serve as stimulus for further development of the physical and technological research of functional materials in Ukraine. It was decided the Eighth International Scientific Conference “Functional Materials ICFM'2015” to be held in Crimea in 2015.

References

1. “FUNCTIONAL MATERIALS – 2013,” *Abstracts of International Conference “Functional Materials” ICFM'2013, September 29 – October 5, 2013*, Ed. by V. Berzhansky (DIP, Simferopol, 2013). – (ISBN 978-966-491-465-6).
2. *Functional Materials* **20**, No. 1 (STC “ISC” NAS of Ukraine, Kharkiv, 2014).