

## V-TH UKRAINIAN SCIENTIFIC CONFERENCE ON PHYSICS OF SEMICONDUCTORS

The V-th Ukrainian scientific conference on physics of semiconductors was held in Uzhgorod from 9 till 15 October 2011. The conference was held by the initiative of the Scientific Council of the NAS of Ukraine on the problem “Physics of semiconductors and semiconductor devices”, Ministry of Education and Science, Youth and Sport (MESYS) of Ukraine, Ukrainian physical Society, V.E. Lashkaryov Institute of Semiconductor Physics of the NAS of Ukraine, Institute of Electron Physics of the NAS of Ukraine, Institute of Problems of Information Recording of the NAS of Ukraine, Uzhgorod scientific-technological center MONI IPRI NAS Ukraine, Uzhgorod National University, and Academy of Sciences of Higher School of Ukraine. Topics presented at the conference reflected the achievements, state of art, and perspectives of investigations of the main branches of physics of semiconductors in Ukraine and in some countries abroad.

More than 200 representatives of the academic institutes, higher educational institutions and scientific-industrial organizations from all regions of Ukraine and scientific institutions and universities from 25 countries: Belarus, China, Czech Republic, France, Germany, Greece, Hungary, Italy, Latvia, Moldova, Poland, Russia, Slovakia, the USA, *etc.* The total number of presented reports was 416, among them 21 with the status of the plenary invited reports. The reports on the scien-

tific directions of the conference (new physical phenomena in the bulk semiconductors, physical phenomena in the low- and quantum-sized structures, physics of semiconductor devices, and technological aspects of the perspective semiconductor materials) covered the modern actual directions of investigations.

Among the presented results, it is worth to mention the reports on the following topics: on graphene – reports of V.O. Kochelap, V.G. Litovchenko; on quantum structures: M.V. Tkach – cascade lasers with the changeable frequency of emission; V.I. Boichuk – doped quantum dots; V.M. Poroshin – analysis of quantum dots with the spatial-changeable position of dopants; D.V. Korbutyak and O.V. Kovalenko – photoemitting quantum dots and quantum structures; on the investigation of the structure of quantum systems by the methods of X-spectroscopy under low angles – V.F. Machulin and V.P. Kladko; properties and practical applications of the amorphous and vitreous semiconductors – M. Vlček, A.M. Andriesh, V.M. Mitsa, A. Stronski; sensors and terahertz devices – V.A. Smyntyna, V.A. Borschak – image sensors of a new type on the base of non-ideal heterostructures; V.G. Litovchenko, T.I. Gorbanyuk – catalytic properties of semiconductor oxide clusters; O.E. Belyaev, R.V. Konakova – terahertz systems.

After the discussions of the presented plenary and section reports, the V-th Ukrainian scientific conference



Fig. 1. Opening of the conference (from left to right): Acad. of the NAS of Ukraine O.B. Shpenyk, Acad. of the NAS of Ukraine V.F. Machulin, Acad. of the NAS of Ukraine M.S. Brodyn, Corr. Member of the NAS of Ukraine V.G. Litovchenko



Fig. 2. Photo made during a coffee-break

on physics of semiconductors stated that the conference program comprised the wide spectrum of scientific and technological problems of the physics of semiconductors and semiconductor devices; the scientific level of the reports and the geographical representation correspond to those of the leading international scientific conferences; in Ukraine, the scientific schools on the physics of semiconductors are preserved and rather successfully functioning in the scientific groups of Kyiv, Lviv, Kharkiv, Zaporizhzhya, Odesa, Dnipropetrovsk, Chernivtsi, Uzhgorod, and other places; they have substantial achievements; it is necessary to facilitate a more active participation of representatives of the industry in the future conferences.

The conference stated substantial achievements of the Ukrainian scientists, investigators, and engineers in the development of fundamental and applied directions in the physics of semiconductors. It was noted also that nanoelectronics became now one of the main directions of the modern development of electronics. For the effective development of studies in the field of nanoelectronics, the additional substantial financing, including the supplies of technological, analytical, and other equipment, is required.

At the closing of the Conference the work of the group of authors Ya.I. Lepikh, Yu.O. Gordienko, S.V. Dzyadkevich, A.O. Druzhynin, A.O. Evtukh, S.V. Lenkov, V.G. Melnik, V.O. Protselko, and V.O. Romanova "Microelectronic sensors of a new generation for the intellectual systems" was unanimously supported as deserving for the reception of State prize of the Ukraine in the field of science and technology 2011 and stated that sensorics is an important scientific direction.

It is also necessary to mention the participation of young scientists in this conference. Their best reports were marked by prizes. It was stated that The further enhancement of the participation of young scientists in the future conferences was indicated as an important task.

The participants of the conference considered also necessary to address to the Presidium of the NAS of Ukraine and to the MESYS of Ukraine with the proposal to support the scientific and applied research works in the field of the physics of semiconductors and semiconductor devices, including semiconductor nanostructures and devices on their base, organic semiconductors, semiconductor materials science, where Ukrainian scientists have substantial achievements and which are strategically important directions of the development of the Ukraine's economy. It was also noted that especially important for the Ukraine is the support of the renewal of the silicon material production in different modifications (blocks, films, and composites) as a base material for the prevailing part of the industry of modern semiconductor devices. In this connection, the conference addressed to the Presidium of the NAS of Ukraine with the request on the necessity of the renewal of the scientific-technological program "Creation of the chemico-metallurgical branch of the pure silicon production 2009–2015".

The next VI-th conference USCPS-6 is planned to be held in 2013.

*V.F. Machulin, O.B. Shpenyk, V.G. Litovchenko,  
A.V. Stronski*