

Preface

International Conference on Oxide Materials for Electronic Engineering – fabrication, properties and applications (OMEE-2012) was held in Lviv, Ukraine, September 3-7, 2012.

Lviv Polytechnic National University had an honour to host this scientific meeting that continues the good tradition that has been commenced as a local workshop in Lviv, which gathered researchers and engineers of several educational and scientific institutions of our city engaged in technology, studying and practical developments of oxide materials for electronic engineering. Afterwards this tradition was continued as series of international scientific workshops. The first one, in 2007, was devoted to the memory of Prof. Andriy O. Matkovskii who initiated this forum. The extended subject matter as well as geography of participants of the second workshop in 2009 allowed thinking about new format of the OMEE meeting. In 2012, this event was held as the international conference.

About 120 participants from more than 60 scientific, educational and industrial institutions from 11 countries (Armenia, Belarus, France, Germany, Hungary, Moldova, Poland, Russia, Spain, Turkey, and Ukraine) participated at the OMEE-2012 Conference. Experienced scientists and young researchers, experimentalists and theoreticians in different fields of chemistry and physics, technology and engineering had a forum for direct and unimpeded discussion of their results and new trends, exchange of knowledge and ideas, joining their efforts in collaboration and multidisciplinary research.

The volume contains conference papers on some contributions presented at the OMEE-2012 Conference. It consists on the following chapters: Technology of the active media for electronic engineering; Active media fundamentals: crystal structure, micro- and nanostructure, electronic structure; Nanoparticles, nano-ceramics and nano-composites; Materials for quantum and optoelectronics, defects, impurities and transport phenomena; Magnetic properties, superconductivity and applications; Materials for sensing.

All the papers have passed the peer-reviewing procedure. We would like to thank to members of the Program Committee and other experts involved in the reviewing process and having made it possible to issue these conference papers.

We would like to thank to all participants of the OMEE-2012 Conference, co-organizing institutions – Lviv Polytechnic National University (Lviv, Ukraine), Scientific Research Company "Carat" (Lviv, Ukraine) and Institute of Physics of the Polish Academy of Sciences (Warsaw, Poland) as well as to all those, who promoted the Conference organization and supported it financially. Especial acknowledgement to the International Centre for Diffraction Data (ICDD) and IEEE Dielectrics and Electrical Insulation Society (IEEE DEIS) as well as to the IEEE MTT/ED/AP/CPMT/SSC West Ukraine Chapter.

Editors

Prof. Sergii Ubizskii

Prof. Leonid Vasylechko

Dr. Yaroslav Zhydachevskii

Conference Board

Organizers

Lviv Polytechnic National University (Ukraine)
Scientific Research Company “Carat” (Ukraine)
Institute of Physics of the Polish Academy of Sciences (Poland)

Under support of

Ministry of Education, Science, Youth and Sport of Ukraine
The Ukrainian State Agency for Science, Innovation and Informatization
Scientific Council on Laser Physics and Laser Technologies at NAS of Ukraine
The International Centre for Diffraction Data (ICDD)
IEEE Dielectrics and Electrical Insulation Society (IEEE DEIS)
IEEE MTT/ED/AP/CPMT/SSC West Ukraine Chapter

International Advisory Committee

E. Antipov (Russia)	Yu. Gorobets (Ukraine)
V. Baryakhtar (Ukraine)	Yu. Grin (Germany)
K.-D. Becker (Germany)	B. Grinyov (Ukraine)
A. Bilous (Ukraine)	V. Kharton (Portugal)
U. Bismayer (Germany)	V. Pecharsky (USA)
Yu. Bobalo (Ukraine)	B. Raveau (France)
M. Brodin (Ukraine)	H. Szymczak (Poland)
H. Fuess (Germany)	I. Troyanchuk (Belarus)

Program Committee

L. Arizmendi (Spain)	A. Maziewski (Poland)	L. Vasylechko (Ukraine)
M. Berkowski (Poland)	S.G. Nedilko (Ukraine)	O. Vasylyev (Ukraine)
V. Berzhansky (Ukraine)	B. Padlyak (Poland)	R. Vlokh (Ukraine)
I. Blonskii (Ukraine)	W. Paszkowicz (Poland)	A. Voloshinovskii (Ukraine)
E. Hristiforou (Greece)	T. Prikhna (Ukraine)	A. Weidenkaff (Switzerland)
R. Gladyshevskii (Ukraine)	R. Przeniosło (Poland)	H. Yükselici (Turkey)
V. Grachev (USA)	A. Senyshyn (Germany)	Yu. Zorenko (Ukraine)
M. Grinberg (Poland)	A. Suchocki (Poland)	P. Zavalij (USA)
H. Kirkici (USA)	D. Sugak (Ukraine)	
L. Kovács (Hungary)	S. Ubizskii (Ukraine)	
M. Kosmyna (Ukraine)	M. Vakiv (Ukraine)	

Local Organizing Committee

S. Ubizskii (Chairman)
Ya. Zhydachevskii (Scientific Secretary)

M. Andriychuk	N. Martynyuk	I. Solskii
O. Buryy	L. Pavlyk	D. Sugak
I. Ivasenko	M. Shpotyuk	L. Vasylechko