

Preface

International Conference on Oxide Materials for Electronic Engineering – fabrication, properties and applications (OMEE-2014) was held in Lviv, Ukraine, May 26-30, 2014.

The Conference continued a tradition of firstly regional workshops and afterwards international scientific conferences on complex oxide materials carried out in Lviv. Previous OMEE meetings were held in September 3-7, 2012 (OMEE-2012), June 22-26, 2009 (OMEE-2009) and May 28-31, 2007 (OMEE-2007).

The Conference was devoted to actual problems of modern science and technologies in the field of oxide and related materials and application them in new energy sources, electronic engineering and information technologies, quantum and optoelectronics, sensors, transducers, nanotechnologies, etc. Scientific topics of the Conference covered basic and applied problems in the area of oxide and related materials including fabrication technology, investigation of their structural, optical, magnetic and electro physical properties, as well as possibilities of their practical application.

In spite of disturbing events in Ukraine in 2014, about 90 participants (including 43 young scientists and students) from 9 countries (Ukraine, Poland, Germany, Turkey, Belarus, Great Britain, Estonia, Hungary and Japan) have come to the Conference and presented more than 100 presentations in the form of lectures, orals and posters. We are grateful to those who supported by their participation not only our Conference, but also aspirations of Ukraine to live in peace.

The volume contains selected conference papers. All the papers have passed the peer-reviewing procedure. The volume consists on the following chapters: Technology of the Active Media of 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 Materials, Multiferroics, Superconductors; Materials for Sensing and Catalysis.

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-2014 Conference, co-organizing institutions – Lviv Polytechnic National University (Ukraine), Scientific Research Company "Carat" (Ukraine) and Institute of Physics of the Polish Academy of Sciences (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) and 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
The International Centre for Diffraction Data (ICDD)
IEEE Dielectrics and Electrical Insulation Society (IEEE DEIS)
IEEE MTT/ED/AP/CPMT/SSC West Ukraine Chapter
Academy of Technological Sciences of Ukraine
The Ukrainian Physical Society

International Advisory Committee

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

Program Committee

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

Local Organizing Committee

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

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