

COLLECTED SCIENTIFIC TRANSACTIONS

# NANOSISTEMI, NANOMATERIALI, NANOTEHNOLOGII

FOUNDED IN OCTOBER, 2003

Volume 15, Issue 1 (2017)

## CONTENTS

<b>Editorial Announcements</b>	Information for Subscribers	VIII
	Information for Contributors	XI
	Topological Phase Transitions in States with Low and High Density of 2D Vortical Pairs Induced by Magnetic Field in Gapless Quantum Spin Liquid with Structural Disorder <i>F. M. BUKHANKO and A. F. BUKHANKO</i>	1
	Influence of Sublayers of Germanium on Metallization of Films of Silver <i>R. I. BIHUN, Z. V. STASIUK, O. V. STROHANOV, M. D. BUCHKOVSKA, V. M. HAVRYLIUKH, Ia. A. PASTYRSKYI, and D. S. LEONOV</i>	15
	Structure and Vibrational Spectra of Thin Films $Y_2O_3:Eu$ <i>O. M. BORDUN, I. O. BORDUN, I. J. KUKHARSKYY, V. V. PTASHNYK, Zh. Ia. TSAPOVSKA, and D. S. LEONOV</i>	27
	Excitons in Nanosystems Consisting of Semiconductor Quantum Dots <i>S. I. POKUTNYI, P. P. GORBYK, S. M. MAKHNO, S. L. PROKOPENKO, and R. V. MAZURENKO</i>	37
	Synthesis and Properties of the Nanostructures Absorbing Microwave Electromagnetic and Neutron Radiations <i>P. P. GORBYK, S. M. MAKHNO, I. V. DUBROVIN, N. V. ABRAMOV, V. M. MISHCHENKO, R. V. MAZURENKO, A. L. PETRANOVSKA, E. V. PILIPCHUK, and S. L. PROKOPENKO</i>	47
	New Nanocomposite Ferroelectric Materials—Layered Crystals of $n$ -InSe<RbNO <sub>3</sub> > and $p$ -GaSe<RbNO <sub>3</sub> > <i>A. P. BAKHTINOV, V. M. VODOPYANOV, Z. D. KOVALYUK, V. V. NETYAGA, and I. G. TKACHUK</i>	83
	Nanocrystalline Powders Based on ZrO <sub>2</sub> for Fabrication of Composites Stable to Ageing <i>I. O. MAREK, O. K. RUBAN, V. P. REDKO, M. I. DANYLENKO, and O. V. DUDNIK</i>	91

Mesoporous Nanocomposites Based on Titanium Dioxide and Carbon as Perspective Photocatalysts for Water Purification <i>M. V. BONDARENKO, T. A. KHALYAVKA, N. D. SHCHERBAN', and N. N. TSYBA</i>	99
Synthesis, Properties, and Applications of Functionalized Carbon Nanostructures <i>N. D. SHCHERBAN' and S. M. FILONENKO</i>	113
Investigation of Factors of Influence on Fabrication of the Developed Surface of an Al–O Condensate <i>S. B. SYDORENKO, O. M. BEVZA, and Ya. S. SYDORENKO</i>	133
Induction-Heating Method for Fabrication of Micro- and Nanodisperse Particles <i>A. I. KUZMICHYOV, L. Yu. TSYBULSKY, S. O. MAIKUT, and I. M. DROZD</i>	141
Features of the Structural Organization and Thermomechanical Properties of Nanocomposites Based on Carboxymethylcellulose, Polyethyleneimine and Cu/Cu <sub>2</sub> O Nanoparticles <i>V. L. DEMCHENKO</i>	163
Influence of Lithium Perchlorate on Structure of Epoxy Polymeric Composites <i>L. MATKOVSKA, I. TKACHENKO, V. DEMCHENKO, M. IURZHENKO, and Ye. MAMUNYA</i>	175
Features of Adsorption of Drugs of Various Molecular Weight by the Biogenic Hydroxyapatite Doped with a Nanomagnetite <i>O. OTYCHENKO, T. BABUTINA, O. PARKHOMEY, L. PROTSENKO, O. BUDYLINA, and I. UVAROVA</i>	185
Calix[4]arene Chalcone Amides—The Nanosize Modulators of Polarization of Mitochondrial Membranes and Content of the Ionized Ca in Them <i>L. G. BABICH, S. G. SHLYKOV, A. M. KUSHNAROVA, O. A. ESYPENKO, and S. O. KOSTERIN</i>	193

Scientific Editor of Issue—*V. A. Tatarenko*

Executive Managing Editor—*V. A. Tatarenko*

Technical Editor—*D. S. Leonov*

Editorial-Publishing Department, G. V. Kurdyumov Institute for Metal Physics, N.A.S. of Ukraine

---

Editorial Office: 36 Academician Vernadsky Boulevard, UA-03142 Kyiv, Ukraine

Telephone: +380 44 4229551, +380 44 4249042, +380 44 4241221. Fax: +380 44 4242561

E-mail: tatar@imp.kiev.ua; dsleonov@gmail.com