

## Contents

### *Characterization and properties*

Influence of Se vacancies on the electron energy spectrum transformation of 2H-NbSe <sub>2</sub> <i>A.A.Mamalui, O.N.Andreeva, A.V.Sinelnik</i> .....	357
Electron gas pressure in pure metals and metal superconductors <i>V.F.Khirnyi</i> .....	364
Effect of pressure on paraconductivity in HoBa <sub>2</sub> Cu <sub>3</sub> O <sub>7-δ</sub> single crystals with oxygen deficiency <i>K.V.Tiutierieva, Ya.V.Dovgopolova, O.O.Chernovol-Tkachenko, I.L.Ivrij, R.V.Vovk, S.I.Prihod'ko</i> .....	370
Inhomogeneity of dielectric properties of cadmium zinc-telluride crystals grown from melt <i>O.O.Poluboiarov, O.N.Chugai, O.O.Voloshin, D.P.Zherebyatiev, S.V.Oleynick, S.V.Sulima</i> .....	378
Luminescence of PbI <sub>2</sub> nanoinclusions in CdI <sub>2</sub> crystal lattice <i>I.M.Bolesta, V.V.Vistovskyy, N.V.Gloskovska, I.M.Rovetskij</i> .....	382
Bi nanolines characterization by linear optical methods <i>V.V.Buchenko, A.A.Goloborodko</i> .....	387
Structure of magnetron hydroxyapatite films with small stoichiometry deviation <i>I.F.Mikhailov, V.V.Starikov, A.A.Baturin</i> .....	394
Mutual influence of additives of Ca and Si on properties of Cr-doped YAG ceramics <i>M.A.Chaika, O.M.Vovk, N.A.Safronova, S.V.Parkhomenko, A.G.Doroshenko, A.V.Tolmachev</i> .....	398
Fabrication and electrical characteristics of nano black phosphorus thin film transistor <i>Wang Lie-long</i> .....	404
Fast plastic scintillator with the high light yield <i>P.N.Zhmurin, D.A.Eliseev, V.N.Lebedev, V.N.Pereymak, O.V.Svidlo, E.S.Velmozhnaya</i> .....	408
Investigation of effect of viscosity on crystallization ability of spodumene glass-ceramic materials <i>O.Savvova, O.Babich, G.Shadrina, M.Kuriakin, A.Grivtsova</i> .....	414
Functional properties of electrolytic alloys of Cobalt with Molybdenum and Zirconium <i>M.V.Ved', M.A.Koziar, N.D.Sakhnenko, M.A.Slavkova</i> .....	420
Degradation of lignin in cassava residue with Phanerochaete chrysosporium by solid state cultivation <i>Bin Xu, Huixing Li, Chaojun Du, Ying Wang, Bin Li</i> .....	427
The mechanical characteristic of rock salt under uniaxial compression with low temperature effect <i>Jie Chen, Xilinx Shi, Jiankun Zhou</i> .....	433
Determination of free phenolics and combined phenolics in foliage of Magnolia sieboldii K. Koch <i>Gao Hongbing, Wang Huan, Du Fengguo</i> .....	437

**Modeling and simulation**

Features of generalized dynamics of quasiparticles in the presence of an external potential field.  
 Part 2. Minkowski equations and degeneration of mobility in the strong fields  
*A.D.Suprun, L.V.Shmeleva*..... 443

Mechanical-magneto coupled model of polymer-bonded magnetostrictive composites  
*Ran Zhao, Bowen Wang, Yafang Li, Shuying Cao, Jianwu Yan*..... 450

Use of time series models to forecast the evolution of corrosion pit in steel rebars  
*Xu Yidong*..... 457

Target prediction in blast furnace based on BP network optimized by variable neighborhood PSO  
*Yang Kai, Zhijun He* ..... 463

Compressive test and simulation of cassava stems using ANSYS  
*Zhang Jin, Xue Zhong, Zhang Yanlin, Song Deqing*..... 468

**Technology**

Strontium iodide: technology aspects of raw material choice and crystal growth  
*A.Gektin, S.Vasyukov, E.Galenin, V.Taranyuk, N.Nazarenko, V.Romanchuk*..... 473

High-efficient microwave-assisted method for the preparation of foamed liquid glass granules  
*T.E.Rimar, E.Ju.Kryuchkova, N.A.Pinchukova, A.Y.Voloshko, V.A.Chebanov* ..... 478

Synthesis of ferroceramics for electromagnetic shock waves generators by vacuum aerosol deposition method  
*O.L.Rezinkin, M.M.Rezinkina, O.G.Gryb* ..... 484

Use of amino-naphthoquinones for production of antimicrobial textiles  
*Hong Li, Chao Ding, Yingchao Ji, Ying Wang, Qihong Wang*..... 490

Studying on plasma acid using in hemp degumming process  
*Wang Ying, Yin Di, Ji Yingchao, Zhang Qingli, Yu Zhihua, Li Hong, Wang Qihong*..... 496

Study on effect of the inner vortex finder length on the flow properties of the hydrocyclone with double vortex finders  
*Yuekan Zhang, Peikun Liu, Xinghua Yang, Junru Yang, Linjing Xiao*..... 502

The influence of rotating magnetic field on the welding arc motion status  
*Zhi-gang Li, Liang-ping Qiu, Ji-zhong Liu, Jian-xiong Ye, Di-qing Wan*..... 509

Stamp stress analysis with low temperature nanoimprint lithography  
*Hongwen Sun, Xiaochao Ma, Chenhui Hu* ..... 517

**Green Chemical**

Capability of separate determination of colored components in their mixture using digital RGB-colorimetry  
*S.V.Khimchenko, L.P.Eksperiandova* ..... 521