

# Contents

## Characterization and properties

Enhancement of scintillation characteristics by doping ZnWO <sub>4</sub> crystals <i>I.Tupitsyna, A.Dubovik, V.Alekseev</i> .....	5
1. Physical parameters of the energy barrier of graphene/ <i>p</i> -CdTe Schottky diodes <i>I.P.Koziarskyi, M.I.Ilashchuk, I.G.Orletskyi, L.A.Myroniuk, D.V.Myroniuk, E.V.Maistruk, D.P.Koziarskyi, I.M.Danylenko</i> .....	12
Conductive properties of solid solutions of the system $x\text{YF}_3-(1-x)\text{BaF}_2-\text{SnF}_2$ <i>R.M.Pshenychnyi, O.V.Lysenko, T.V.Pavlenko, A.O.Omelchuk</i> .....	18
Optical studies of magneto-electric interactions in yttrium-iron-garnet films <i>V.E.Koronovskyy, YA.Vakyla</i> .....	24
Influence of topological features and $U^-$ -centers on electric charge carrying at strong electric fields in $\text{Ge}_x\text{As}_y\text{Te}_{100-x-y}$ amorphous films <i>A.I.Isayev, S.I.Mekhtiyeva, H.I.Mammadova, R.M.Rzayev, R.I.Alekberov</i> .....	28
Intensification of the formation process of sodium sulfate-modified biocomposite materials based on the glutinous matrix <i>V.P.Kashytskyi, O.L.Sadova, S.L.Yanchuk</i> .....	35
Use of materials based on cobalt alloys for the eco- and energy technologies <i>T.A.Nenastina, M.D.Sakhnenko, V.O.Proskurina</i> .....	43
Electrophysical properties of polychlorotrifluoroethylene-carbonile iron system at low and high frequencies <i>S.M.Makhno, O.M.Lisova, P.P.Gorbyk, G.M.Gunya, M.T.Kartel</i> .....	49
Influence of ultrasonic and mechanochemical treatment on the electronic structure of functional composites of TiO <sub>2</sub> and ZrO <sub>2</sub> <i>V.V.Zaika, V.L.Karbiivskii, E.V.Sachuk, L.I.Karbiivska, NA.Zueva, V.H.Kasiyanenko, A.I.Sobolev, S.I.Shulyma, N.K.Shvachko, V.O.Zazhigalov</i> .....	55
Study of viscosity and quasi-thermodynamic activation parameters for viscous flow in the system water-(propylene glycol-macrogol 400) <i>O.P.Bezugla, A.P.Krasnopyorova, A.M.Liapunova, G.D.Yukhno, M.O.Lyapunov</i> .....	60
Comparing of the characteristics of thermal spray coating technologies: air-fuel detonation aluminum spraying onto steel with other technologies <i>K.V.Korytchenko, V.Yu.Kucherskyi, R.Y.Krasnoshapka, D.P.Dubinin, S.M.Shevchenko, R.I.Kovalenko</i> .....	65
Influence of structure and phase composition on wear resistance of sparingly alloyed alloys <i>D.B.Hlushkova, VA.Bagrov, V.M.Volchuk, UA.Murzakhmetova</i> .....	74

Analysis and industrial application of the soft reduction model in continuous bloom casting of C92D2 steel <i>Yujun Li, Yihong Xu</i> .....	79
Synthesis, characterization and electrochemical performance analysis of nanomaterials for high capacity lithium batteries <i>Zhaona Lu, Yan Wang, Junlong Wang, Chuanxing Wang</i> .....	84
Comparative analysis of abrasion wear resistance of ultra-high-molecular-weight polyethylene and basalt plastics on its basis <i>O.V.Yeromenko, A.-M.V.Tomina, Ye.A.Yeriomina, O.V.Chernyavskiy</i> .....	90
Electrochemical impedance spectroscopy of concrete with nanoscale mineral additives <i>Yuxia Liang, Qiuyan Meng, Ruihong Jia</i> .....	94
Effect and mechanism of action of glass waste powder as an additional binder on the properties of recycled concrete <i>Qidong Wang, Minghua Yang, Xudong Wang</i> .....	104

### Technology

Large-sized neutron-sensitive plastic scintillator <i>P.M.Zhmurin, D.A.Yeliseiev, O.V.Yeliseieva, V.D.Alekseev, Yu.O. Hurkalenko, S.M.Kovalchuk</i> .....	115
Guanidinium-containing oligoether as a complexing agent of transition metal ions <i>M.Ya.Vortman, O.S.Berezhnytska, O.A.Aksenovska, S.M.Kobylinskyi, L.V.Kobrina, V.N.Lemeshko, V.V.Shevchenko</i> .....	120

### Methods

The methodology for determination of 1-methylcyclopropene in gas-air mixtures after release from supramolecular complexes <i>D.Yu.Miasnikova, N.A.Pinchukova, H.S.Vlasenko, I.O.Zinchenko, O.I.Zbruyev, Ye.V.Evtushenko, T.M.Gurina, O.S.Prokopyuk, V.A.Chebanov</i> .....	128
Highly sensitive voltammetric method in electrochemistry for the determination of jateorisin with a modified electrode <i>Xiaobo Wang, Yi Zhang</i> .....	134