

Table of Contents

Preface

Maximum Swelling of the Surface of the Composite Material D.I. Baidakov, L.Y. Komarova and N.V. Baidakova	1
Effect of the Biodegradable Compounds Composition with Monoglycerides on Mechanical Properties I. Vasilyev, V. Ananiev, Y. Sultanova and V. Kolpakova	7
Using of AlN Aluminum Matrix Composite in Offshore Wind Turbine V.A. Zobov and D.A. Chernousov	17
On Durability of Structurally Inhomogeneous Materials V.I. Mironov, O.A. Lukashuk and D.A. Ogorelkov	24
Method of Preparation for Restoration of Worn Nitrided Journals of Crankshafts A. Kulakov, E. Barylnikova, I. Talipova, I. Galiev and S. Voinash	31
Investigation of Nanofiber Material Production by Catalytic Pyrolysis O.A. Kolenchukov, E.A. Petrovsky, A.Y. Mikhaylov and K.A. Bashmur	37
Dynamics of Strength Gain of an Artificial Stone Based on a Cement Binder I. Ukrainskiy, A.V. Kamenchukov, S. Voinash and V. Sokolova	43
Improvement of the Method for Restoring the Bearing Supports of Steel Crankshaft B. Tarasenko, E. Shapiro, S. Voinash, A.V. Kamenchukov and A.M. Dzhasheev	50
Informational Measures of the Shape of the Amoroso Distributions for the Research of Dispersed Materials V. Polosin	58
Investigation of the SHS Process Initiation in Base Mixture during HFC-Heating and the Combustion Rate Dependence on Various Factors A.V. Ishkov, V.N. Malikov and A. Shegolev	67
The Changing of Deformation Properties of Flexo Plates in the Process of Swelling in Solvents V.Y. Konyukhov, L.Y. Komarova and I.G. Rekus	75
An Effect of Fillers on the Structure and Abrasive Wear of Polyurethane Urea V. Senichev, E. Pogorel'tsev, A. Slobodinyuk, D. Kiselkov and M. Makarova	80
Fiberglass: Lateral Loads from Climatic and Temporary Factors I.V. Zlobina	88
Features of the Process of Obtaining Steel 08H14N5M2DL in the Open Induction Furnace IST-0.16 N. Testoyedov, I. Kovalev, L. Oborin and V. Gerashchenko	97
Modelling the Effect of Temperature on the Stability of Bromide and Carbonate Complexes of Europium, Gadolinium, Terbium and Determination of their Thermodynamic Functions I. Fialkovsky, D. Lutskiy, A. Alekseev and A. Blinov	103
Feasibility of Applying Alkaline-Earth Metal Carboaluminates for Bayer Process Aluminate Solution Purification from Organic Impurities E. Siziakova, P. Ivanov and R. Maximova	109
The Influence of Thermocyclic Treatment on the Structure and Mechanical Properties of Pseudo-Alpha Titanium Alloys for Steam Turbine Blades V. Gadalo, I. Vornacheva, S. Voinash, V. Ignatenko and E. Remshev	117
Preliminary Local Thermal Impact as a Surface Quality Assurance Factor D.Y. Timofeev, A.D. Khalimonenko and M.A. Nacharova	125
The Simulation of Ultra-High Molecular Weight Polyethylene Cryogenic Pipeline Stress-Strain State E. Karyakina, I. Shammazov, V. Voronov and A. Shalygin	132
Method of Forming Microchannels on the Surface of a Glass Substrate V. Bessmeltsev, D. Katasonov, N. Goloshevsky and S. Baev	141
Arc Technological Characteristics and Metal Transfer Behavior of Twin Electrode GMAW Deposition S. Elsukov, I. Zorin, Y. Dubtsov, V.I. Lysak and D. Priyatkin	147
Influence of Deformations on the Filtration Coefficient of Materials E.A. Mikishanina	154

Obtaining the Dependences of the Contact of the Composite Abrasive Material with the Nozzle Walls, which Reduces the Wear of the Focusing Tube of the Waterjet Installation O.G. Kozhus, G.V. Barsukov, V. Shorkin and Y. Stepanov	160
Thermal Processing and Testing for the Heat Blow Materials by Concentrated Flow of Electromagnetic Energy L. Furov	166
Size Analysis Based on Sorption Study Data for Hydroxyapatite Nanoparticles E. Maraeva and K. Khalugarova	172
Sensitive Elements of High Temperature Pressure Sensors Formed from a Doped Polycrystalline Diamond E. Vysotina, R. Rizakhanov, S. Sigalaev, N. Polushin, V. Shokorov and A. Mishanin	178
Minimization of Internal Shrinkage Defects in Cast Parts Using 5VA Powder Solder Application V. Gerashchenko, L. Oborin, N. Testoyedov and I. Kovalev	184
On the Mechanism of Silica Transition into Alumina Solutions in the Leaching of Nepheline Sinters E. Siziakova and P. Ivanov	190
The Use of Acrylic as a Structural Material in the Design of Translucent Elements of Deep-Submergence Vehicles N.A. Gasratova and V.S. Zuev	196
Shungite Carbon Nanoparticles as Modifiers of ZnS:Cu Phosphor, Based on Analysis of the EPR Spectral Lines of Mn^{+2} S.P. Rozhkov, N.N. Rozhkova and M.M. Sychov	201
Study of 3D Models of Composite Duck-Foot Tines M. Ananyev, A.V. Ishkov, V.N. Malikov and N. Karpov	209
Modeling of “Stretching-Over” Static-Dynamic Process I.A. Belyaeva, V. Glushchenkov and A.Y. Pyl'tsin	216
Genotoxic Effect of a New Water-Soluble Fullerene Derivative C70 and its Effect on the Transcriptional Activity of Genes that Regulate the Cell Cycle, DNA Repair and Apoptosis E.A. Savinova, E.S. Ershova, O.A. Kraevaya, P.A. Troshin and S.V. Kostyuk	222
The Temperature Dependence of the Electrical Conductivity Activation Energy of the of Aqueous Electrolyte Solutions Y.M. Artemkina, V.V. Shcherbakov and I.A. Akimova	228
Change of Rigidity of PCM Modified in an Ultrahigh Frequencies Electromagnetic Field under the Action of External Factors I.V. Zlobina	234
Influence of the Structure of Iron Coatings on their Physical and Mechanical Properties Y. Kisel, S. Simokhin, I. Borzdyko and L. Markaryants	242