

Table of Contents

Preface

Features of Obtaining Ni-Cr-Fe Alloy Powders by Plasma Atomization S.B. Ermakov, S.A. Vologzhanina and B.S. Ermakov	1
Study of the Bimetallic Joint CuCrZr/316L(N) P.Y. Piskarev, A.A. Gervash, S.A. Vologzhanina, B.S. Ermakov and A.M. Kudryavceva	8
Thermal Properties of Fullerene C₅₆ N.M. Barbin, L.V. Yakupova, D.I. Terentev and V.T. Kuanyshev	15
Influence of the Microstructure of Cutting Ceramics on the Efficiency of the Machining Process A.D. Khalimonenko, E.G. Zlotnikov, I.V. Gorshkov and M.A. Popov	21
The Places of Products Localization and the Influence of this Factor on the Technological Characteristics S.D. Pozhidaeva and E.G. Klikin	28
Synthesis and Electron-Beam Modification of Zinc-Sulphide Phosphors for Solid-State Radioluminescent Light Sources (SRLS) E.V. Zelenina, V.V. Bakhmetyev, M.M. Sychoy and M.A. Shvindin	35
Foamed Glassy Phosphate Materials for Biosorbents K.G. Karapetyan and O.V. Denisova	41
Assessment of the Thermal Effect on the Surface of Metal Structural Materials on the Stability of Laser-Induced Codes Readability E.I. Pryakhin, A.E. Ligachev, Y.R. Kolobov, E.A. Zakharenko and V.V. Romanov	47
Solvothermal Synthesis of YF₃:Ce³⁺ Nanophosphors for Medical Applications A.M. Dorokhina, V.V. Bakhmetyev, M.M. Sychoy, H. Kominami and A. Fujii	55
Synthesis of Y₂O₃: Eu Luminescent Phosphor with Increased Dispersion for Use in Medical Purposes A.B. Vlasenko, V.V. Bakhmetyev and S.V. Mjakin	61
Improvement of Mechanical Properties of the Tool Using Nanocomposite Coatings E.M. Salpagarov, A.A. Belyakov and A.V. Sivenkov	68
Development of Scientific Fundamentals for the Conversion of a Virtual Binary Lead Selenide Ferroelectric into a Real Ferroelectric of Lead Selenite for Physico-Chemical Sensors V.V. Tomaev, A.G. Syrkov, M.M. Sychoy and V.V. Taraban	75
Development of New Plasma Technology Methods in Synthetic Materials Production and Research A.N. Popova, V.E. Kison, V.S. Sukhomlinov and A.S. Mustafaev	87
Electrophilic and Nucleophilic Modifiers as a Factor of Formation of Lipophilic Properties of Surface-Modified Materials D.T. Musina, V.R. Karibov and N.Q. Khanh	94
Nanotechnologies of Strength Control of Materials V.V. Nosov, E.V. Grigoriev, S.A. Peretyatko and A.P. Artyushchenko	101
Deactivation of Red Mud by Primary Aluminum Production Wastes V.Y. Piirainen, A.A. Barinkova, V.N. Starovoytov and V.M. Barinkov	109
Comparative Wear Resistance of Existing and Prospective Materials of Fast-Wearing Elements of Mining Equipment V.I. Bolobov, S.A. Chupin, E.V. Akhmerov and V.A. Plaschinskiy	117
Determination of the Optimal Structure of a Layered Composite Material for Maximum Strength Characteristics L.A. Bokhoeva, I.O. Bobarika, A.B. Baldanov, V.E. Rogov and A.S. Chermoshentseva	124
Properties of Microfibers of Various Compositions as a Component of Cellular Composites D.D. Netsvet, A.L. Popov, V.V. Nelubova and S.V. Lasunova	132
Increase of Stainless Steel Wear Resistance by Diffusion Chromium Plating Using Iodine Transport S.P. Bogdanov, N.A. Khristiuk, A.V. Anisimov and M.M. Sychoy	139
Properties of Cement with Photocatalytic Composite Material Y.N. Ogurtsova, V.V. Strokova, P.Q. Zhao, M.V. Antonenko and E.N. Gubareva	153

Effect of Agents of Initiation of Carbonate Biomineralization on Cement Properties V.V. Strokova, V.V. Nelyubova, U.N. Duhanina, D.A. Balitsky and O.I. Drozdov	159
Influence of a Hydrophobic Emulsion on the Surface Properties of Coatings of Water-Dispersion Acrylic Paint V.V. Strokova, M.V. Nikulina, P.S. Baskakov, A.V. Abzalilova and A.Y. Esina	165
Gas Atomization of X6CrNiTi18-10 Stainless Steel Powder for Selective Laser Melting Technology L.Y. Saubanova, S.V. Diachenko, V.S. Loray, L.A. Nefedova, S.P. Bogdanov, N.A. Khristiuk and M.M. Sychov	172
Development of 3D Printing Technology with Ceramic Paste and Study of Properties of Printed Corundum Products A. Dolgin, A.I. Makogon and S.P. Bogdanov	178
Mechanical Properties of Samples Based on Schwartz-P Minimal Surface S.V. Balabanov, A.I. Makogon, M.Y. Arsentev and M.M. Sychov	185
630 C±30 C - Nodal (Critical) Temperature of Iron and Carbon Steel K.Y. Shakhnazarov, E.I. Pryakhin and A.V. Mikhailov	191