

CONTENTS

MINING SCIENCE

1. **V. Boiko, A. Han, T. Khlevnyk, E. Zagoruyko, O. Han, V. Dubovyk** Assessment of the stress-strain state of slopes in landslide-prone areas where critical infrastructure facilities are located..... 7
2. **M. Hlukhoveria** Technology of extraction of fuel mass from ash and slag waste in Ukraine..... 18
3. **K. Kovbyk** Study of the influence of ore water saturation on its losses in the process of release in laboratory conditions depending on changes in the fractional composition..... 30
4. **V. Ruskikh, S. Poimanov, I. Filippov** Study of methods for predicting the stability of preparatory workings in the mines of Western Donbas..... 38
5. **A. Khorolskyi, Yu. Zabolotna, V. Pochevov, V. Medianyuk, V. Lapko, O. Mamaikin** Justification of rational parameters for thin seam extraction based on the study of energy characteristics of the coal cutting process by the executive body..... 46
6. **M. Shyshov** Degassing methods and means analysis of mine workings and methane utilization to improve site degassing efficiency in the Western Donbas mines..... 56

EARTH AND PLANETARY SCIENCES

7. **I. Nikitenko, O. Starik, M. Netecha** On the provenance of stone artefacts from the excavation materials of the zaporozhian Nekhvoroshchansky monastery of the Dormition of the Mother of God..... 74
8. **M. Ruzina, I. Zhiltsova, Y. Dementieva, M. Malova, A. Loktev** Structural factors controlling ore-bearing metasomatites of the Middle Dnieper megablock of the Ukrainian shield..... 84
9. **S. Shevchenko, O. Kurasa** The role of branding for the marketing of gemmological information: global experience and features of the domestic market..... 94

ELECTRIC POWER ENGINEERING, ELECTROTECHNICS AND ELECTROMECHANICS

10. **A. Rukhlov, N. Rukhlova, M. Kyrychenko** Power consumption profiles of the main fans at coal mines..... 111

APPLIED MECHANICS, CONSTRUCTION AND CIVIL ENGINEERING

11. **N. Zuievskaya, L. Shaidetska, T. Kosenko, I. Matviichuk** Prognostication of zones with variable physical and mechanical characteristics of soil massifs... 118
12. **N. Zuievskaya, L. Shaidetska, R. Semchuk, O. Khalymendyk** Ensuring the protection of critical infrastructure energy facilities from explosions..... 126

ENVIRONMENT PROTECTION TECHNOLOGIES

13. **O. Berezniak, O. Borysovska** Assessment of atmospheric air pollution in Dnipro city as a result of dust entrainment from the ash-disposal areas of Prydniprovsk TPP..... 136
14. **O. Borysovska, O. Berezniak, A. Harbar** Assessment of the non-carcinogenic risk to population health from atmospheric air pollution in Dnipropetrovsk Oblast..... 147
15. **A. Hetta, O. Kovrov, V. Fedotov, V. Gruntova, Ye. Panova** Study of the life cycle of California worm *Eisenia fetida*..... 161
16. **P. Lomazov, A. Pavlychenko** Improvement of methodological approaches to the assessment and forecasting of changes in the environmental condition as a consequence of military actions..... 174

MATERIALS SCIENCE AND INDUSTRIAL MACHINE-BUILDING

17. **D. Kolosov, O. Bilous, H. Tantsura, S. Onyshchenko, A. Shustova, K. Antonova** Continuity breakage of cable in orthotropic stay rope of rectangular cross-section..... 184
18. **I. Belmas, D. Kolosov, O. Bilous, H. Tantsura, S. Onyshchenko, A. Shustova, O. Krasnokutskyi** Algorithm for determining tensions in a stay cable with a manufacturing defect..... 194
19. **K. Zabolotnyi, V. Temchenko** Research of the influence of dynamic loads on butterfly valves using computer modeling..... 207
20. **K. Zabolotnyi, A. Shkut** Development and testing of a stand for studying the dynamics of an inertial screen with two motor-vibrators..... 218
21. **K. Zabolotnyi, O. Panchenko, M. Polushyna, M. Kovyrev** Analysis of torsional properties of a rubber rope as a composite material in multilayer winding..... 230
22. **Ya. Liashok, S. Podkopayev, O. Povzun, S. Virych, V. Kalynychnenko** Energy-saving technology of silicate pressed material with use of micro-porous silica-earth raw materials..... 239