

CONTENTS

MINING SCIENCE

1. **Sobko B., Lozhnikov O., Hoichuk M.** Resource provision of Ukraine with critical raw materials in the context of global trends in the development of the electric vehicle industry 7
2. **Kononenko M., Khomenko O., Myronova I., Kovalenko I.** Economical-ecological efficiency of using emulsion explosive in underground ore mining 22
3. **Rudniev Ye., Antoshchenko M., Filatieve E., Popovych V.** Dangerous properties of coal seams and accidents in the main coal-mining countries of the world 36
4. **Khorolskyi A., Kosenko A., Chobotko I.** Methodology for designing multiparameter processes for control of the stress-strain state of a rock mass 46

APPLIED MECHANICS, CONSTRUCTION AND CIVIL ENGINEERING

5. **Zuievskaya N., Vovk O., Shaidetska L., Shukurlu E.** Features of the construction of a collector network in difficult topographic conditions by microtunnel 57
6. **Ilina I., Bobryshov O., Trofymova O., Komissarov Y.** Mathematical model of dynamic processes in inclined lifting installations 68

EARTH AND PLANETARY SCIENCES

7. **Ishkov V., Kozii Ye., Chernobuk O.** Analysis of the influence of the c_8^H coal seam thickness of Dniprovska mine on the content of germanium 76

MATERIALS SCIENCE AND INDUSTRIAL MACHINE-BUILDING

8. **Belmas I., Kolosov D., Dolgov O., Onyshchenko S., Tantsura H., Bilous O.** Influence analysis of hoisting machine vessel turning on stress state of head rubber-cable rope 91
9. **Belmas I., Kolosov D., Onyshchenko S., Bilous O., Tantsura H., Chernysh P.** Stress-strain state of composite rope considering influence of its nonlinear deformation and reinforcement element breakage 99
10. **Bondarenko A.** Introduction of a jet pump dredger equipped with an innovative suction head 107
11. **Monia A.** Efficiency of mine locomotive braking on prolonged slope by pulsating braking torque 118
12. **Ostashko I., Karpenko V.** Research of the process of crushing graphite grinding in a central mill 126

AUTOMATION AND COMPUTER-INTEGRATED TECHNOLOGIES

13. **Bublikov A., Isakova M., Nadtochiyi V., Zybalov D., Halchenko Yu., Khoroshailov M.** Modified algorithm of automatic temperature control in an electric resistance furnace for metal heat treatment 134

14. **Bublikov A., Isakova M., Nadtochyi V., Zybalov D., Halchenko Yu., Khoroshailov M.** Research and synthesis of the automatic water level control system of the mine water tank according to the criterion of minimizing the dispersion of fluctuations of power consumption 146
15. **Bublikov A., Isakova M., Nadtochyi V., Zybalov D., Halchenko Yu., Khoroshailov M.** Research and synthesis of the automatic temperature control system of the heat medium in the cooking boiler for the manufacture of fruit jam 157

ENVIRONMENT PROTECTION TECHNOLOGIES

16. **Borysovskaya O., Bovsunovsky V.** Recycling of multilayer polymer packaging doypack 171
17. **Rusakova T., Zolotko O., Dolzhenkova O., Voitenko Y.** Estimation of pollution zones from emissions of industrial enterprises 182
18. **Krasovskyi S., Kovrov O., Klimkina I.** The effect of biochar on the phytoremediation properties of *Avena fatua* and *Bromus inermis leyss* 192