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## Geology

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- Key words: a wheel, a rail, vertical loading, the stain of contact crossing at right angle cylinders, rapprochement of contacting cylinders, the big and small semiaxes of a stain of contact, contact pressure, approximating factors of the big and small semiaxes of a stain of contact.*
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*Key words: fan, circulation, vortex chamber, aerodynamic scheme, aerodynamic loading, vorticity source, circular blade cascade, conformal mapping method.*
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*Key words: computational ventilation network, aerodynamic resistance, booster fan, aerodynamic characteristics, approximation accuracy.*
- Levin L.Yu., Semin M.A., Zaitsev A.V.** NUMERICAL SIMULATION OF COUPLED HEAT DISTRIBUTION PROBLEM IN MINE ATMOSPHERE AND ADJACENT ROCK FORMATION FOR ARBITRARY MINE ROADWAY NETWORKS..... **176**  
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*Key words:* Mine ventilation, differential equations, air velocity, depression, head characteristic, temperature field, conditioning environment unit, mathematical model, microclimatic conditions, mine atmosphere, air conduit, heat exchange, heat flux, air-depression measurements, heat-humidity measurement.

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*Key words:* gas suction fan, vorticity source, vortex chamber, equivalent diffuser, boundary layer, blade channel angle, separation vortex generation, aerodynamic loading, circular blade cascade, circulation, blade channel, energy method, effectivity criteria, aerodynamic configuration, radial vorticity fan.

#### Technology

**Altuhov A.A., Mitenkin A.V., Teplova T.B., Doronin M.A.** PROCESSING OF DIAMOND PREPARATIONS BY THERMOCHEMICAL METHOD WITH RECEIVING A SURFACE OF A NANOMETER ROUGHNESS.....

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*Diamond application in microelectronics sets technological tasks of formation of a surface of diamond preparation of a nanometer roughness. For production of products of scientific and technical, research and medical appointment it is necessary to use new ways. One of such ways is thermochemical which allows to reach Ra roughness to 5 nanometers.*

*In article the problem of achievement of a nanometer relief of a surface of diamond reveals at its application in hi-tech products of microelectronics and medicine. The description of a thermochemical way, design of thermochemical installation is provided, the scope is specified. In article there is a description of a pilot study with the subsequent scheduling and a conclusion of a formula of dependence of quality of processing of a surface from temperature of a processing disk. At the end of article conclusions are drawn on need of further researches.*

*Key words:* microelectronics, thermochemical way of processing of diamond, roughness of a surface of nanometer level, temperature mode.

**Desyatov A.M., Malinsky R.A., Mantsevich M.I., Shcherbakova G.V., Kozlov P.A., Panshin A.M.** RESOURCE-SAVING CLINKER PROCESSING TECHNOLOGY AT CHELYABINSK ZINC PLANT.....

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*Energy-saving technology has been developed for processing of Waelz slag from zinc plants incorporating production of coal concentrate for re-use in the Waelz process and intermediate products containing other valuable components for further processing.*

*Key words:* Waelz slag, coke fines, mineral processing, concentrates, environmental performance, sulfides.

**Kasatkin V.V., Ilichev V.A., Kamnev E.N., Kasatkin A.V.** EXPERT ASSESSMENT OF RADIATION RISK OF OBJECTS OF PEACEFUL NUCLEAR EXPLOSIONS (PNE) ON THE BASIS SELECTED EMPIRICAL CRITERIA.....

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*Key words:* peaceful nuclear explosions, radiation hazard, expert appraisal, empirical criteria, rehabilitative measures.

### **Blasting operations**

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*Key words: charges, explosive, block, breaking, deposit.*

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*Key words: rock, blasting energy, fragmentation, bench, charge, parameter, height, diameter.*

- Rakhmanov R.A.** BASIS FOR PARAMETERS OF COMBINED BLASTHOLE CHARGE DESIGN FOR DIFFERENT-STRENGTH ROCK MASS..... **207**

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*Key words: rock, hard inclusion, layer, blast, charge, fragmentation.*

- Rakhmanov R.A.** BLASTHOLE CHARGE ENERGY CONTROL BY SHORT-DELAY EFFECT ON DIFFERENT-STRENGTH ROCK MASS LAYERS..... **210**

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*Key words: rock, rock mass, hard inclusion, blast, charge, energy, bench.*

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*Key words: open mining, coal mines, drilling and blasting operations, the parameters of blasting operations, hole charges, Vietnam.*

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*Key words: open pit mines, engineering structures, seismically safe blasting.*

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*Key words: land rent, cadastral value of land, land value assessment, method for determination of the land rent.*

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