CONTENT

Underground mining

Open mining works

Measurement, control, diagnostics

In this article the assignment of metric characteristics of software quality is defined. The classification of software metrics is presented. The existing approaches to the definition of software metrics are considered. The possibilities of automation definition, analysis and visualization of metric characteristics of the programs in high level languages are discussed.

Key words: complexity of programs, software metrics, high level programming languages, the language MODULA-2.

Aerology

The article presents the data on the quantity and composition of deep sorbed hydrocarbons in the coals of Kuznetsk coal basin, extracted from coal by method of thermal decontamination. Found the difference of the content and composition of deep sorbed hydrocarbons in different brands of coal. Deep sorbed significantly enriched with heavy hydrocarbons relatively free gas of coal layers. The greatest content of deep sorbed hydrocarbons and the enrichment of their heavy hydrocarbons found in the coals of marks G, and QOL. Set the allocation of deep sorbed hydrocarbons in drilling of coal and it is expected that similar processes take place in the process of coal mining coal mining harvesters. The allocation of deep sorbed hydrocarbons in coal mining can be a trigger for the development of the processes of fire and explosions.

Key words: sorption and desorption, deep sorbed in the coal, thermal coal, fire and explosions in coal mines.

Touched upon the problem of oxidation processes, which may arise among the gob and distended rocks. Underground endogenous fires - complicated type of accidents. With the processes of spontaneous combustion of coal losses in the worked-out space is a number of major industrial accidents. For the forecast of zones with dangerous aerodynamic modes of the system «coal-to-air» have developed a method of estimation of parameters of air distribution in the worked-out space of flat layers of the average power of Kuzbass.

Key words: coal mining, aerodynamic modes, the program complex «Geomechanics», oxidative process.

Oil and gas

Potential of application of the developed technique for thermal design of the pipeline, equipped with electric heating system, in software product ANSYS/Fluent for the purpose of derivation of a criterion heat transfer equations is demonstrated. Methods of pipe heat insulation selection and power selection of electric heating system for nonisothermic above-ground pipeline is proposed.

Key words: oil pipeline, electric heating system, criterion equation, selection of power.

To improve diagnostics of subsea pipeline, we propose an integrated method for remote diagnostics, based on a study of the orthogonal components of constant magnetic and low-frequency electromagnetic fields subsea pipeline.

Deposited manuscripts