

# The utilization of energy waste in Polish underground coalmines

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## **ABSTRACT**

Fly ash and other energy wastes are disposed in Polish underground coalmines by use of the gravitational hydraulic transport. Currently more than 2 million tons of fly ashes per year are disposed as fly ash suspension. Some of the purposes and reasons for underground waste disposal have been known and distinguished for many years. One of them, the decrease of the amount of waste stored on the surface, is the most important one from the environmental point of view. It is also very important for the power industry, especially under the new regulations.

What is more, the utilization of energy waste in underground coalmines, especially in the form of suspension, is very advantageous for the mining industry. Energy waste utilization can improve mine ventilation systems, diminish fire hazards and improve exploitation systems. These purposes can be obtained by different, still upgrading methods. Those most popular and also the newest one, preventing spontaneous gob fires in underground coalmines by means of fly ash suspension with inert gas, were described in the paper.

The fly ash suspensions have to fulfill many requirements to be effectively applied in underground coal mines. A suitable recipe is one of the most important things because different fly ashes could distinctly differ in properties depending on combustion technology, desulfurization method, etc. Before any application, detailed tests should be done to propose the best recipe, in some cases with other components such as cement or wastes from flotation processes. The most important properties of fly ash suspensions with the methods of the tests are presented in the paper.

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