

ARTIFICIAL LIGHTNING IN MINES**Grinko D. N.**, studentScientific supervisor – Slesaryonok E. V., senior lecturer
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A sufficient amount of lightning in places with increased danger, where landslides and explosions are possible – these are one of the main requirements for the design of lightning devices intended to work in mines. The main purpose of mine lightning is to provide comfortable working conditions for people and their safety. A number of requirements have been set for lamps intended for lightning mines, in particular: in the presence of a high accumulation of combustible gaseous substances, the lamp must be designed in such a way as to guarantee the protection of mine workers from fires and explosions; two types of production of mine light sources (network, battery) optimize the possibilities of working processes in mines; in the bottomhole and mine faces, the lightning devices with a maximum voltage level of 127 volts can be used; the minimum period of operation of the rechargeable lamp must be at least 10 hours. In addition, under special control should be the level of exposure to high temperatures, high humidity on mine lightning devices. LED light sources can be considered as a revolution in the world of lightning technology. They help to solve a wide range of tasks: they increase the service life of lightning devices and the safety of their use. Besides, they reduce electricity consumption and improve light output. The low voltage characteristic of LED batteries is the basis for the explosion safety of mine lightning devices. The source of light is characterized by low power that leads to an increase in the duration of the battery cycle. The big advantage of LED lamps is that they have a low ripple factor when connected to AC networks that reduces the strain on the eyes of mine workers. This feature significantly improves the working conditions in mines.

List of literature

1. Lighting for mines and shafts, mine lamps [Electronic resource]. – Mode of access: <https://vatra.in.ua/ru/info/statti/osvitlennia-rudnykiv-i-shakht/> – Date of access: 13.02.2022.