

## **IMPROVING THE METHOD OF COMPENSATION OF OUTPUT SIGNAL TEMPERATURE DRIFT IN OPTICAL METHANE CONCENTRATION MEASURER**

The method of compensation of output signal temperature drift in an optical methane concentration measurer has been improved, which allowed to expand the operating temperature range to +55°C preserving regulated metrological characteristics. In the proposed method, in contrast to the existing ones, compensation is made for the temperature-caused change of the constant component of the output signal not by the static polynomial, but by the functional dependency of LED optical radiation intensity change on voltage drop change in it. The improved method of compensation in the measurer using hardware and software components has been implemented, which made it possible to evaluate metrological characteristics of the measurer and its efficiency. During the experimental research of the methane concentration measurer in question, it has been obtained the value of the additional absolute measurement error of methane concentration, which does not exceed the regulated magnitude of the basic error ( $\pm 0.20$  vol. %), which fully meets the requirements for these measurers under conditions of coal mine atmosphere.