

Invention relates to smoke detection devices and can be used for detecting a fire hazard and notifying of a danger of catching fire. Invention consists of a plasmon-polariton photodetector (PPPD) with a gold or aluminum coating bordering a medium with combustion products, two laser diodes with p-polarized monochromatic radiation, and an electronic part with a module for receiving and processing information. Detector is implemented in one of two variants: first – two laser diodes with identical wavelengths and different angles of incidence of rays onto a surface of the PPPD, which correspond to a position of a half-width of a maximum of an angular dependence of a photocurrent; second – two laser diodes with different wavelengths, which correspond to a spectral position of a half-width of a maximum in a photocurrent spectrum of the PPPD, at identical angles of radiation incidence. Technical result of the invention is preserving sensitivity of a sensor to smoke with simultaneous insensitivity to dust particles, simplifying a structure and reducing dimensions of the detector.