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Title	**Method for decreasing the working temperature and increasing the sensitivity to n-buthanol and hydrogen gas by gamma radiation field treatment of Pd functionalized ZnO:Eu sensors**
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Description EN	The invention relates to the method of improving the performance of n-butanol and hydrogen gas nanosensors based on Pd functionalized ZnO:Eu at lower operating temperatures by treatment for 60 seconds in gamma radiation field from Cs-137 source. The gas response (S) is determined as the ratio of the signal in the presence of the detected object to the signal in the absence of the detected object $S=I_{gas}/I_{air}$. After treating the nanosensor in gamma radiation field, the response value increased from 2.3 to 3.3 for 100 ppm hydrogen gas at 150 °C. After treatment in the gamma radiation field the response value for 100 ppm n-butanol was 1.5 at 150 °C and 1.4 at 200 °C, compared to the response level below the detection threshold of the nanosensor untreated in the gamma radiation field.