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Methods for the Self Calibration of Ion Mobility Spectrometer

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In transport systems like airports, subway or railway stations widely used ion mobility spectrometers for hazardous toxic gases or explosives traces detection. At the present time ion mobility spectrometers use ionization sources based on the corona discharge. These sources of ionization require frequent calibration, especially if the device is used in the portable embodiment where rapid changes in ambient atmosphere are possible. Error false positives in such systems are critical – the evacuation of passengers transport terminal and emergency calls. To improve situation with false errors we develop system for the self calibration of ion mobility spectrometer based on combination of explosives vapors of and products released during the corona discharge combustion. Designed calibration system is based on corona discharge for ion mobility spectrometry. The control system is integrated into the overall spectrometer structure.