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Design and assembling of GEM detector sensitive volume for plasma radiation application.

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This abstract is devoted to design and assembling of GEM detectors for plasma radiation application. In this work we will report the results of mounting of two triple-GEM detectors with different dimensions 100x100mm2 and 200x20mm2. A description of the assembling procedures including the gluing/stretching techniques and selection of materials is given in this work. Particular attention was paid to the selection of materials that will work under special conditions, such as magnetic field, high temperature, neutron flux, electromagnetic and any type interference. Moreover, those materials can not disrupt detector's operation, so to build it only certified materials should be used: checked under outgassing and ageing tests, radiation hardened, having appropriate electrical properties. The choice of materials was carried out so to have first of all the possibility of testing different materials (Ertacetal C and two types of fiberglass) for detector frames. There has also been the selection of assembly glue (Araldite) and the detector window material (thin aluminized Mylar foil).

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