

GEM coupled to a short Induction gap: GEM-MIGAS

The Gas Electron Multiplier with a Micro-Induction Gap Amplifying Structure (GEM-MIGAS) is obtained by the coupling of a GEM to a short induction gap, typically 50 μm , where additional charge multiplication occurs. It was observed that the increase of the induction gap thickness from 50 μm to 300 μm leads to an increase of the charge gain by a factor of 100 - from $\sim 2 \times 10^3$ to $\sim 2 \times 10^5$. Moreover, using the GEM-MIGAS, it was observed a strong reduction of the ion back-flow ratio to the drift region when compared with the operation in GEM-mode (i.e. low induction electric field) - by a factor ~ 20 . For typical electric drift fields of 0.1 and 0.5 kV/cm, it was measured minimum values for the ion back-flow fraction $\sim 1\%$ and $\sim 4\%$, respectively, for the corresponding charge gains of $\sim 5 \times 10^4$ and $\sim 2 \times 10^3$. The present studies were carried out with a GEM-MIGAS coupled to a semitransparent CsI-photocathode operated in Ar/5%CH₄ gas mixture at atmospheric pressure.

Summary (Additional text describing your work. Can be pasted here or give an URL to a PDF document):

<http://docs.google.com/fileview?id=0B9XYjvheV2ovNTJlZjMxYmUtNDNmMi00NTlhLTk0ZDEtYjE2ZjEzMWEzOGVh&hl=en>

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