

Correlation between leakage current and charge gain in irradiated LGADs

Wednesday 21 June 2023 14:10 (20 minutes)

The gain of charge in LGADs (GQ) and the increase of the leakage current (GI) with respect to the generation current (I_{gen}) are different, due to charge screening of the electric field in the gain layer, trapping-detrapping process and also possible other effects. A TCT was used to simultaneously measure GI and GQ in USFD-FBK4.0 prototypes. A special structure with PIN and LGADs very close together was used. The absolute charge measurements were assured with the use of beam-monitoring circuit. The difference between GI and GQ was found to become substantial at higher fluences and bias voltages.

Authors: HOWARD, Alissa Shirley-Ann (Jozef Stefan Institute (SI)); HITI, Bojan (Jozef Stefan Institute (SI)); KRAMBERGER, Gregor (Jozef Stefan Institute (SI)); MANDIC, Igor (Jozef Stefan Institute (SI)); DEBEVC, Jernej (Jozef Stefan Institute (SI)); SKOMINA, Petja

Presenter: KRAMBERGER, Gregor (Jozef Stefan Institute (SI))

Session Classification: LGAD