Indian National Gamma Array in Beam Hall II at IUAC

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Indian National Gamma Array (INGA) is a combined facility by the various Universities and Institutions in India for achieving overall improvement in the resolving power of the array and to push the observational limits to observe various phenomena in the nuclear structure studies at high spin. INGA consists of 24 Compton suppresed Clover detectors (each detector having an intrinsic photopeak efficiency $\sim 0.2\%$) with total solid angle coverage of about 25% of 4π, corresponding to a total photopeak efficiency of 5%. In the first cycle of experiments 20 Compton Suppressed Clover Germanium detectors were pooled from IUAC, UGC-DAE-CSR, TIFR, and SINP. The complete INGA is installed at IUAC and the first campaign of experiments (17 nos) were done non stop for 4 months successfully catering to users across the country.

All the Clover Germanium detectors are cooled by a dedicated automatic liquid nitrogen filling system[1]. Both the Clover Germanium detectors and the Anti-Compton shields are powered (detectors and preamplifiers) by home made modules [2] while the signals from suppressed Clover detectors are processed by home made Clover modules [3]. The signals are digitised by the 8 channel 13 bit CAMAC ADC-814 developed in-house. Multi CAMAC crate based data acquisition CANDLE [4] collects data from all the detectors. An annealing system based on oil free vacuum pumps, turbo-molecular pump backed by roots pump, with dedicated inerlock system is used to service the clover detectors. The detectors are arranged in two hemispherical structures each movable on precision rails by dedicated controlled motor. The arrangement of the detectors are given in [5, 6].

The features and the performance of the array will be presented.

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