

## **Gamma Tracking Array: A new generation high resolution gamma ray spectrometer for exotic nuclear structure studies**

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### **ABSTRACT**

*A high efficiency gamma detector array offers an opportunity to explore the nuclear structure at the extreme condition of its temperature, angular momentum and isospin. In the present proposal a new generation gamma detector array based on Pulse Shape Analysis (PSA) and gamma-tracking technique to improve the detection efficiency of the array will be discussed. Proposed array with existing accelerator facilities in India will be enhanced the possibility to explore the exotic nuclei at its extreme conditions. A technique, which helps in identification of interaction points, based on pulse shape of the core signal and the mirror signal from the neighboring segments of the same detector will be presented. In the present presentation a brief overview of the development of 'imaging capable' new generation advance gamma ray tracking array in connection decay spectroscopy will also be discussed. I would also like to propose a g-factor setup based on transient filed technique for our present accelerator facilities along with the proposed array of gamma tracking detectors to address several key issue of nuclear structure physics.*