R-process experiments with the Advanced Implantation Detector Array

ALFREDO ESTRADE, Central Michigan University, CHRIS GRIFFIN, TOM DAVINSON, CARLO BRUNO, OSCAR HALL, ZHONG LIU, PHIL WOODS, University of Edinburgh, PATRICK COLEMAN-SMITH, MARC LABICHE, IAN LAZARUS, VICTOR PUCKNELL, JOHN SIMPSON, STFC Daresbury Lab, LAURA HARKNESS-BRENNAN, ROBERT PAGE, University of Liverpool, GABOR KISS, JIAJIANG LIU, KEISHI MATSUI, SHUNJI NISHIMURA, VI PHONG, RIKEN Nishina Center, GIUSEPPE LORUSSO, National Physical Laboratory, FERNANDO MONTES, NSCL, NEERAJAN NEPAL, Central Michigan University, BRIKEN COLLABORATION, RIBF106 EXPERIMENT TEAM — Decay properties of neutron rich isotopes, such as half-lives and $\beta$-delayed neutron emission probabilities, are an important input for astrophysical models of the r-process. A new generation of fragmentation beam facilities has made it possible to access large regions of the nuclear chart that are close to the path of the r-process for some astrophysical models. The Advanced Implantation Detector Array (AIDA) is a segmented active-stopper detector designed for decay experiments with fast ion beams, which was recently commissioned at the Radioactive Ion Beam Factory in RIKEN, Japan. In this presentation we describe the main characteristics of AIDA, and present preliminary results of the first experiments in the region of neutron-rich selenium isotopes and along the N=82 shell closure.

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