

Gamma-ray tracking with AGATA a new perspective for spectroscopy at RIB facilities

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The Advanced GAMMA Tracking Array is a next generation high-resolution gamma-ray spectrometer for nuclear structure studies based on the novel principle of gamma-ray tracking. It is built from a novel type of high-fold segmented germanium detectors which will operate in position-sensitive mode by employing digital electronics and pulse-shape decomposition algorithms. The unique combination of highest detection efficiency and position sensitivity allows sensitive spectroscopy studies with unstable beams of lowest intensity. AGATA will be employed at the leading infrastructures for nuclear structure studies in Europe. The first implementation of the array consisted of five AGATA modules; it was operated at INFN Legnaro. A larger array of AGATA modules was employed at GSI for experiments with unstable ion beams at relativistic energies. The presentation will describe the novel gamma-ray tracking method. Examples of physics cases from the two different exploitation sites demonstrate the opportunities given by the new spectrometer.

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