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Recent tests on the construction of a new correlator for neutrons and charged particles

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With the advent of new facilities for radioactive ion beams mainly rich in neutrons, SPES @ LNL, FRAISE @ LNS and FAIR @ GSI to give some examples, the detection of neutrons and charged particles in Heavy radioactive Ion collisions with both high angular and energy resolutions became a mandatory request. As a consequence, the construction of new multi-detection systems suitable for correlations studies between neutrons and charged particles became an important perspective.

The contribution will illustrate the results of recent tests performed on new plastic material, the EJ276 both in the “green-shifted” and in the ordinary versions, coupled with Photon Multiplier Tubes (PMTs) or Silicon based-PM (SiPM) fast device. These experimental works are aimed at designing an advanced high efficiency neutron and charged particles prototype of a multi-element detector with both high energy and angular resolution.

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