

A CONCEPT OF CSI-Li₂B₄O₇ SANDWICH DETECTOR FOR SIMULTANEOUS LIGHT CHARGED PARTICLES AND NEUTRONS MEASUREMENT

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Detectors based on the most popular scintillation materials (as for example CsI or NaI) are usually dedicated to light charged particles or gamma ray detection: their properties are well known and the Pulse Shape Analysis can be applied to determine atomic mass and charge of the incident particle. On the other hand simultaneous neutrons measurement is often required, especially in the case of ions collision or fission investigations. In the case of some multidetectors arranged in 4□ geometry (INDRA [1], CHIMERA [2, 3]) non additional neutron detector is used according to assumption that we can reconstruct the event via total charge of detected products. This way any information about incomplete events is generally lost.

Recently most of oxide materials containing ⁶Li or/and ¹⁰B isotopes appear promising neutron detectors. Especially Li₂B₄O₇ offers a few interesting possibilities. Some of them are reported in literature [4] but many others require further investigations. In this paper a concept of new detection cell sensitive both to light charged particles and neutrons is proposed and discussed.

References

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