

Frontiers in Gamma Ray Spectroscopy FIG18

Contribution ID : 38



Negative Parity States in ^{124}Te

Content :

Investigation of Te-nuclei could provide a base to study shape and phase evolution in nuclei, as it lies between spherical vibrator (Sn) and γ -soft triaxial rotor (Xe, Ba). Systematically, coexistence of collective and non-collective states has been observed in $^{118-122}\text{Te}$ [1-3]. In order to extend systematic on Te-nuclei, high spin states of ^{124}Te has been populated via $^{124}\text{Sn}(^9\text{Be}, \alpha 3n)^{124}\text{Te}$ reaction using INGA array, with 48 MeV beam energy provided by 15UD pelletron accelerator facility at IUAC, New Delhi. Several new excited energy levels have been found in recent measurement based on γ - γ coincidence method. Spin and parity of these excited states have been assigned on the basis of angular correlation and linear polarization measurement. Preliminary results of this work have been reported in ref. [4]. Negative parity states, which may be formed by coupling of $\nu h_{11/2}$ orbital with available $\nu g_{7/2}$, $\nu d_{5/2}$, $\nu s_{1/2}$ and $\nu d_{3/2}$ orbitals lying near $N=72$ Fermi surface, have been established in present work.

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Session classification : --not yet classified--

Track classification : --not yet classified--

Type : Poster