

Probing Fission Dynamics using Fission Fragment Spectroscopy

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Unlike other reaction mechanisms, fission process produces huge number of fragment nuclei; all being produced at the same instant of time. Thus γ -spectra following a typical fission reaction are found to be extremely complicated, and often become very challenging to carry out the unambiguous analysis. Although it is very challenging to make an unambiguous analysis of the complicated γ spectra of the fission fragments, a careful analysis of in-beam γ -spectroscopic data can bring out an overall picture of the underlying fission dynamics of the concerned fissioning system [1,2]. The results related to the multi-modal fission dynamics as obtained from the several prompt gamma ray spectroscopic experiments followed by the extensive analysis work carried out by our group will be presented [3,4,5]. The importance of a spectrometer, comprising of a large number of high-resolution gamma detectors, in unveiling the different competing fission modes through prompt gamma ray spectroscopy technique will be discussed.

References:

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