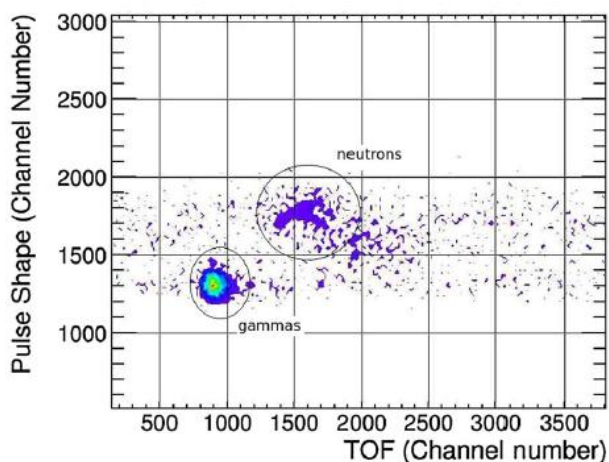
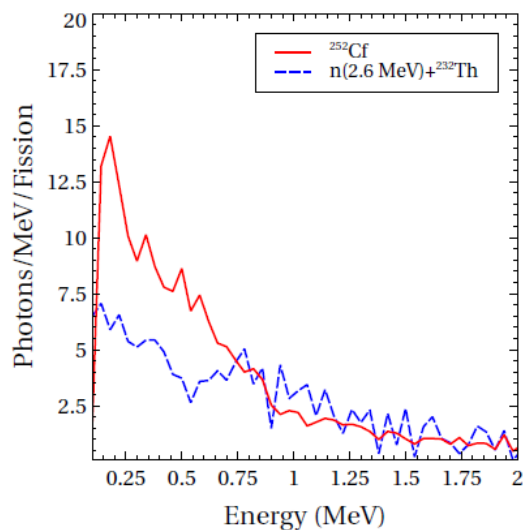


Measurement of prompt fission neutron and gamma spectra in the fast neutron induced fission of ^{232}Th

Measurements of prompt fission neutrons and gamma rays spectra have been carried out in the fast neutron induced fission of ^{232}Th at an average neutron energy of 2.6 MeV at FOTIA, BARC. The Maxwellian temperature obtained from the prompt fission neutron spectrum is found to be 1.22 ± 0.03 MeV. An estimate of the average gamma energy could be obtained as 0.91 ± 0.04 MeV. It is found that, while the measured prompt fission neutron spectrum and the extracted Maxwellian temperature agree reasonably well when compared with the predictions of the GEF model, the average gamma ray energy from the measured prompt fission gamma spectrum is found to be lower by $\sim 17\%$ from the predictions of the model. An estimate of average neutron and gamma multiplicities are obtained as 2.049 ± 0.121 and 6.55 ± 0.32 , respectively, from the measurements.



The 2D plot showing Pulse Shape versus TOF of the neutrons and gammas for the 2.6 MeV neutron induced fission of ^{232}Th .



Comparison of the unfolded gamma spectra in the low energy range (up to 2 MeV), obtained from spontaneous fission of ^{252}Cf and the 2.6 MeV neutron induced fission of ^{232}Th

Ref. :

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