^{209}Bi(γ,n) 1991Mo25

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	J. Chen # and F. G. Kondev	NDS 126, 373 (2015)	30-Sep-2013

1991Mo25: E=7.637, 7.915 MeV γ-source was produced from the McMaster Nuclear Reactor. A 2.5 cm diameter, 4 cm long cylindrical target of metallic ^{209}Bi was used. Neutrons were detected by a cylindrical ^{3}He neutron detector, FWHM=15 keV for thermal neutrons and 17 keV at a neutron energy of 177 keV. Measured photoneutron spectra. Deduced J, π, widths, resonance σ, dynamic neutron source possibility for the level at 7637 keV.

Others:

1985Be55: E=7.5-12 MeV, source=bremsstrahlung. Measured cross sections and report resonances (Γ) at 7900 (160), 8200 (130), 8500 (130), 8800 (140), 9300 (190), 10100 (280), and 11300 (410).

1986Bi12: E=7-11.4 MeV, source=(n,γ). Measured angular distributions. Deduced the presence of strong E1-E2 (and possibly also E1-M1) interference effects from the asymmetries from the asymmetries.

1995Be61: E=7-26 MeV. Measured photoneutron yields. Deduced giant quadrupole resonances characteristics.

1979Ba06: E=9-9.7 MeV. Measured photoneutron spectrum.

^{209}Bi Levels

E(level)	J^π	Comments
7637	$9/2^+$	Γ=40 eV *+40−20*, Γ_0=0.44 eV *+40−20* (1991Mo25). 1991Mo25 observed two neutron groups at E_n=177 and 114 keV, with σ=275 mb *40* and 93 mb *14*, respectively. J^π: l_n=0 transitions to 5^+ and 4^+ states in ^{208}Bi.