^{22}O(p,p′),(d,d′γ) 2006Be04,2006El05

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia	NDS 127, 69(2015)	1-Apr-2015

Other: 2006El06.

inverse-kinematic reaction.

2006Be04: ^{22}O(p,p′) – Target: Polypropylene [$(CH_2)_n$], ^{22}O secondary beam, E=46.6 MeV/nucleon, produced by fragmentation of a primary beam of ^{36}S at 77 MeV/nucleon with a ^{12}C target at GANIL facility. Measured angular distributions of ^{22}O for elastic and inelastic (first 2^+) channels. Scattered ^{22}O nuclei identified in the focal plane of the SPEG spectrometer. The energy and angle of the recoiling protons were measured using MUST, an array of eight silicon-strip detectors, backed by Si(Li) diodes and CsI crystals. Coincidences recorded between SPEG plastic detector and MUST. DWBA analysis of angular distributions. Studied behavior of N=14 neutron gap far from stability.

2006El05,2006El06: ^{22}O(d,d′γ) – Target: CD_2, ^{22}O secondary MeV/nucleon, produced by fragmentation of a primary beam of ^{40}Ar at 94 MeV/nucleon with a ^{9}Be target at RIKEN facility. The scattered particles were detected using silicon telescope, consists of four layers with thicknesses of 0.5, 0.5, 2, and 2 mm. Protons were detected by 156 CsI(Tl) scintillator crystals. For γ-ray detection 80 NaI(Tl) were used. Determined interaction cross section and derived "matter" deformation parameter.

^{22}O Levels

E(level)	J^{π}[†]	Comments
0.0	0^+	
3185 *15*	2^+	E(level): From γ-ray energy (2006El05). Other: 3200 keV *200* (2006Be04). Deformation parameter β(p,p′)=0.26 *4*, smaller than those for ^{20}O and ^{18}O. This result indicates a weak neutron contribution to the 2^+ state (2006Be04). Deformation parameter β(d,d′)=0.23 *2* and ^{22}O+^{2}H reaction cross section $\sigma(0^+ \rightarrow 2^+)$=19 mb *3* (2006El05).

[†] From Adopted Levels.

γ(^{22}O)

E_γ	E_i(level)	J_i^{π}	E_f	J_f^{π}	Comments
3185 *15*	3185	2^+	0.0	0^+	E_γ: From 2006El05.

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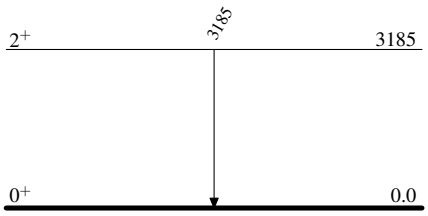
Level Scheme



$^{22}_{8}O_{14}$