^{76}Ge(^{34}S,2α2nγ) 1993Gi02

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen	NDS 172, 1 (2021)	31-Jan-2021

1993Gi02: E=148 MeV ^{34}S beam was produced from the Tandem and booster accelerator at NBI, Riso. Target was three thin stacked ^{76} Ge, with a total thickness of 1.0 mg/cm^2. Charged particles were detected with a silicon ball of 21 detectors and γ rays were detected with the Nordball consisting of 19 coaxial and one planar Ge detectors in conjunction with an inner ball of 60 BaF_2 detectors. Measured Eγ, $\gamma\gamma$-coin, particle-γ-coin, $\gamma\gamma(\theta)$ (DCO). Deduced levels, J, π, band structures, γ-ray multipolarities. Comparisons with theoretical calculations.

^{100}Ru Levels

E(level)†	J$^\pi$‡	E(level)†	J$^\pi$‡	E(level)†	J$^\pi$‡	E(level)†	J$^\pi$‡
0#	0$^+$	3266	8$^{(+)}$	6718#	16$^+$	13173#	26$^{(+)}$
540#	2$^+$	4086#	10$^+$	7830#	18$^+$	14740#	28$^{(+)}$
1227#	4$^+$	4356	(10$^+$)	9060#	20$^+$		
2077#	6$^+$	4921#	12$^+$	10381#	22$^+$		
3062#	8$^+$	5717#	14$^+$	11743#	24$^{(+)}$		

† From Eγ data.
‡ From the Adopted Levels.
# Band(A): Yrast cascade. The band crossing occurs at $\hbar\omega$=0.46 MeV near 10$^+$, associated with angular momentum of 9.5 units and alignment involving low-Ω, high-j orbitals, possibly $h_{11/2}$ neutrons. Possible band termination at the top of the yrast cascade.

γ(^{100}Ru)

DCO ratios correspond to gates on ΔJ=2, quadrupole transitions.

E$_\gamma$†	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.‡	Comments
204	3266	8$^{(+)}$	3062	8$^+$		
540	540	2$^+$	0	0$^+$	Q	DCO=1.07 *8*
565	4921	12$^+$	4356	(10$^+$)		
687	1227	4$^+$	540	2$^+$	Q	DCO=1.14 *10*
796	5717	14$^+$	4921	12$^+$	Q	DCO=0.95 *12*
820	4086	10$^+$	3266	8$^{(+)}$		
835	4921	12$^+$	4086	10$^+$	Q	DCO=0.85 *10*
850	2077	6$^+$	1227	4$^+$	Q	DCO=0.93 *10*
985	3062	8$^+$	2077	6$^+$	Q	DCO=0.98 *12*
1001	6718	16$^+$	5717	14$^+$	(Q)	DCO=0.76 *20*
1024	4086	10$^+$	3062	8$^+$	(Q)	DCO=0.75 *15*
1112	7830	18$^+$	6718	16$^+$	Q	DCO=0.93 *14*
1230	9060	20$^+$	7830	18$^+$	Q	DCO=1.00 *17*
1294	4356	(10$^+$)	3062	8$^+$		
1321	10381	22$^+$	9060	20$^+$	(Q)	DCO=0.88 *17*
1362	11743	24$^{(+)}$	10381	22$^+$	Q	DCO=1.06 *25*
1430	13173	26$^{(+)}$	11743	24$^{(+)}$	(Q)	DCO=0.90 *25*
1567	14740	28$^{(+)}$	13173	26$^{(+)}$	Q	DCO=2.1 *9*

† From 1993Gi02.
‡ Deduced from DCO ratios (by evaluators), not explicitly given in 1993Gi02.

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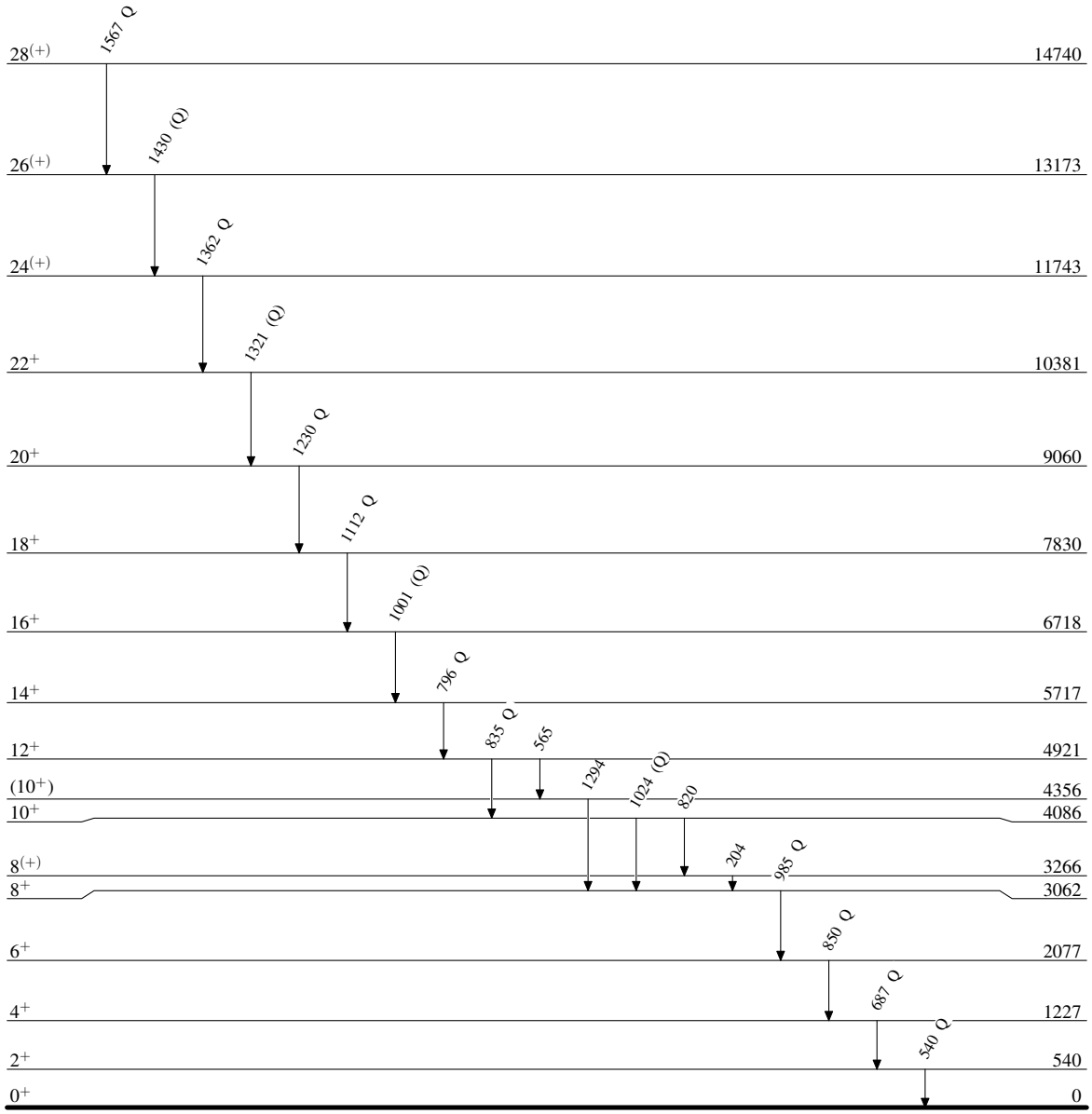
Level Scheme



$^{100}_{44}Ru_{56}$

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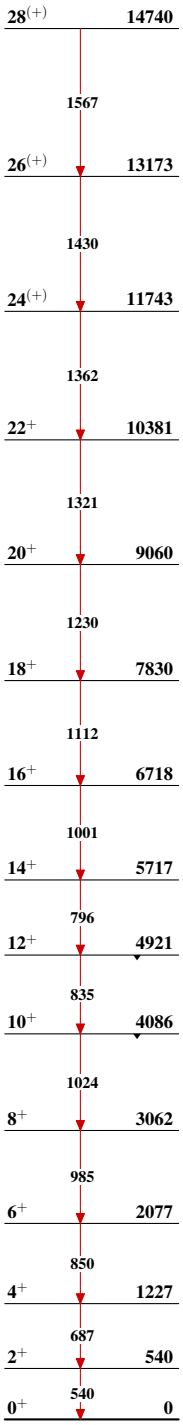
Band(A): Yrast cascade



$^{100}_{44}Ru_{56}$