

$^{126}\text{Te}(^{18}\text{O},5n\gamma)$ 2008Fe02

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	P. K. Joshi, B. Singh, S. Singh, A. K. Jain		NDS 138, 1 (2016)	15-Oct-2016

2008Fe02: E=75 MeV beam provided by Tandem accelerator at IPN Orsay. Measured $E\gamma$, $\gamma\gamma(t)$ with one clover and three co-axial Ge detectors with BGO Compton suppression. Evidence of a 272-ns isomer above $19/2^+$ level is reported.

The level scheme reported by **2008Fe02** is apparently deduced from experiments carried out for ^{140}Nd (**2006Pe25,2005Pe24**).

Details of gamma-ray data are not provided by **2008Fe02**.

 ^{139}Nd Levels

E(level) [†]	J ^π [‡]	T _{1/2}	Comments
0	3/2 ⁺		
231.0 [#] 10	11/2 ⁻	5.50 h 20	%IT=13.0 10 T _{1/2} : from Adopted Levels.
896.0 [#] 13	15/2 ⁻		
1098.0 [@] 13	13/2 ⁻		
1943.9 14	15/2 ⁺		
1966.9 [@] 14	17/2 ⁻		
1990.1 15	15/2 ⁺		
2053.3 [#] 15	19/2 ⁻		
2246.5 15	17/2 ⁺		
2571.9 15	19/2 ⁺		
2571.9+x		272 ns 4	Additional information 1. E(level): only the transitions below the 2572, 19/2 ⁺ level are delayed (2008Fe02). The authors could observe neither any delayed transition populating the 2572, 19/2 ⁺ level nor K x-rays of Nd. T _{1/2} : apparent half-life from 1071γ(t) (2008Fe02). The 605-keV transition from 2572 level and 665-keV transition from 896 level were also delayed, but the statistics in 2008Fe02 experiment were not adequate for lifetime determination.
2618.2 ^{&} 15	17/2 ⁺		
2622.6 [@] 15	21/2 ⁻		
2711.3 [#] 16	23/2 ⁻		
2721.3 ^{&} 15	19/2 ⁺		
2843.6 ^{&} 16	21/2 ⁻		
3067.6 ^{&} 19	23/2 ⁺		
3301.6 ^{&} 22	25/2 ⁺		
3533.6 ^{&} 24	27/2 ⁺		
3824.2 18	25/2 ⁻		
3839.0 [@] 17	25/2 ⁻		
3980.1 18	27/2 ⁻		

[†] From least-squares fit to $E\gamma$ data, assuming 1 keV uncertainty for each γ ray.

[‡] As proposed by **2008Fe02** based on yrast population of levels, band structures and earlier known assignments for low-lying levels.

[#] Band(A): Band based on 11/2⁻.

[@] Band(B): Band based on 13/2⁻.

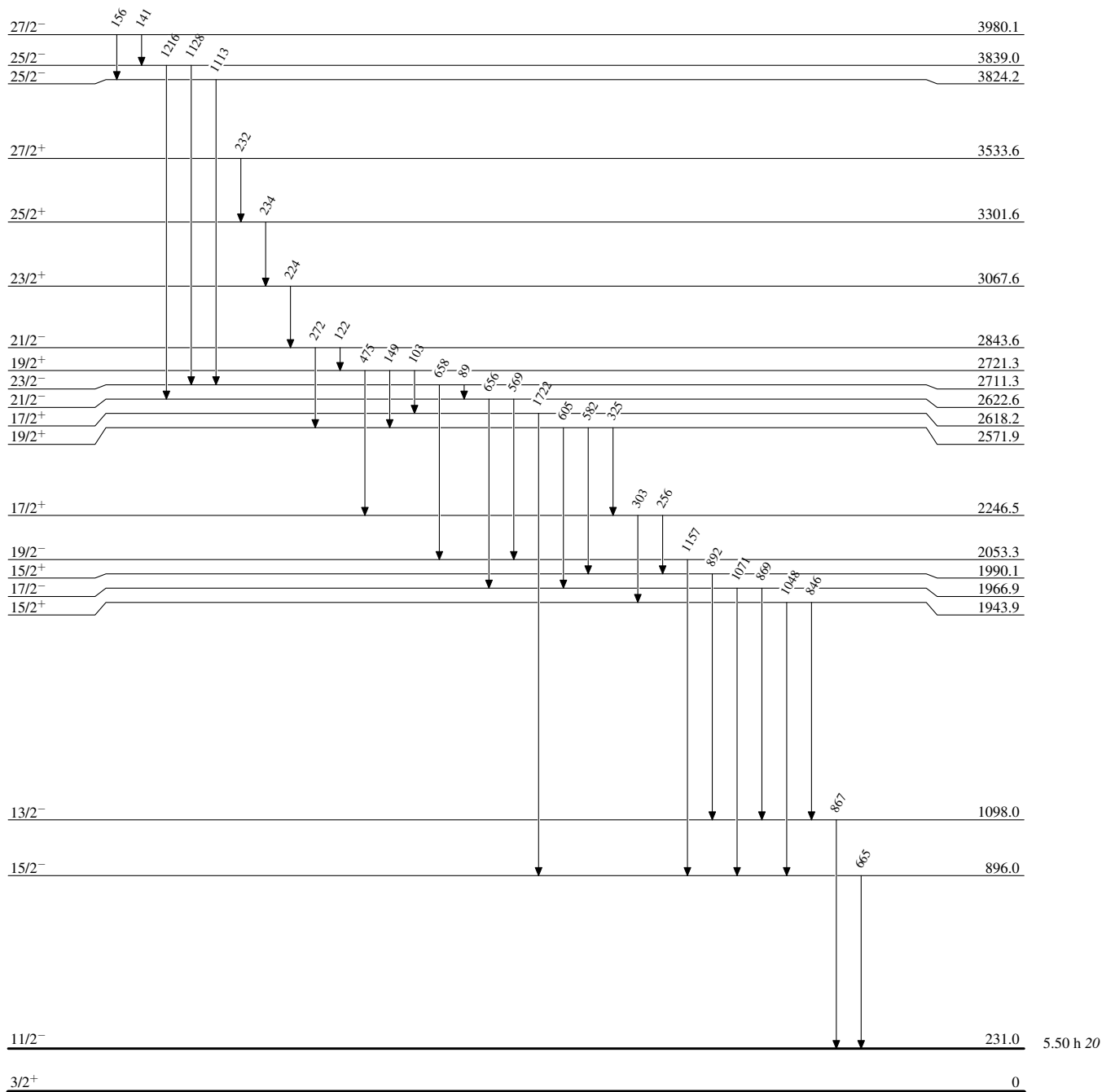
[&] Band(C): Band based on 17/2⁺.

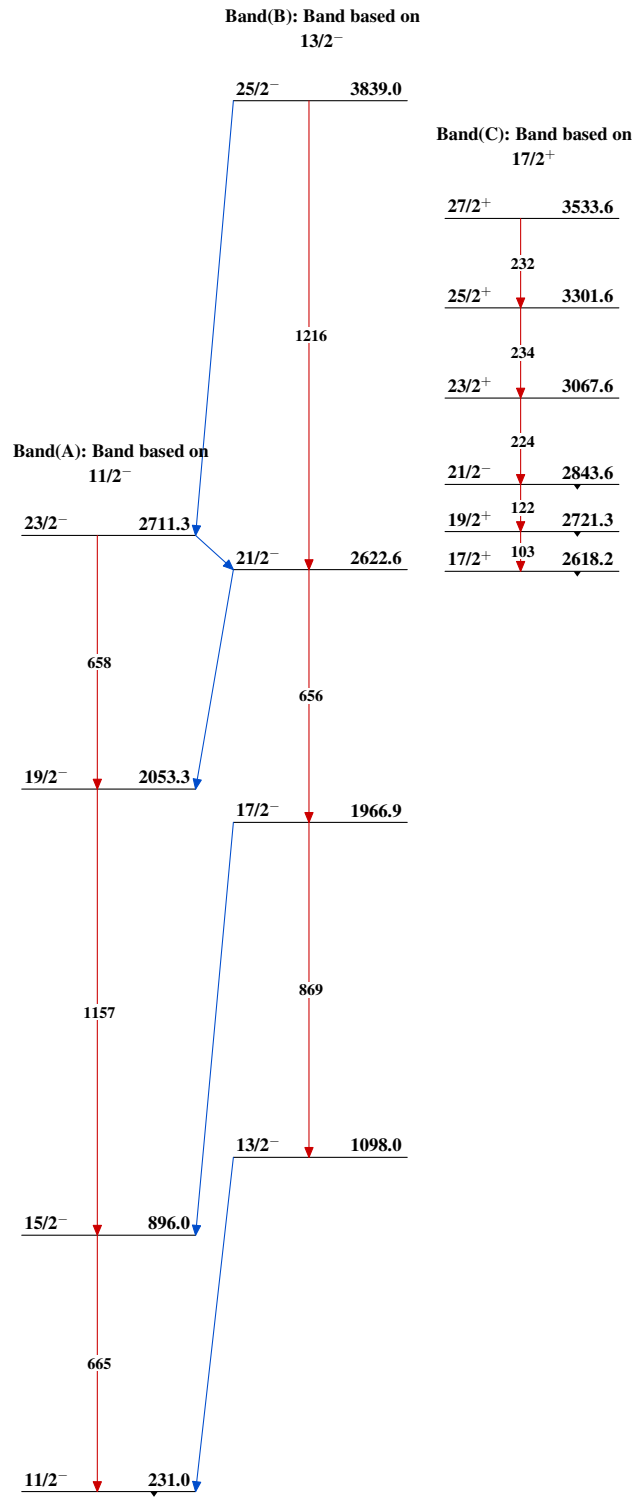
$^{126}\text{Te}(^{18}\text{O},5n\gamma)$ 2008Fe02 (continued) $\gamma(^{139}\text{Nd})$

E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult.	Comments
89	2711.3	23/2 ⁻	2622.6	21/2 ⁻		
103	2721.3	19/2 ⁺	2618.2	17/2 ⁺		
122	2843.6	21/2 ⁻	2721.3	19/2 ⁺		
141	3980.1	27/2 ⁻	3839.0	25/2 ⁻		
149	2721.3	19/2 ⁺	2571.9	19/2 ⁺		
156	3980.1	27/2 ⁻	3824.2	25/2 ⁻		
224	3067.6	23/2 ⁺	2843.6	21/2 ⁻		
(231)	231.0	11/2 ⁻	0	3/2 ⁺	M4	Mult.: from Adopted Gammas.
232	3533.6	27/2 ⁺	3301.6	25/2 ⁺		
234	3301.6	25/2 ⁺	3067.6	23/2 ⁺		
256	2246.5	17/2 ⁺	1990.1	15/2 ⁺		
272	2843.6	21/2 ⁻	2571.9	19/2 ⁺		
303	2246.5	17/2 ⁺	1943.9	15/2 ⁺		
325	2571.9	19/2 ⁺	2246.5	17/2 ⁺		
475	2721.3	19/2 ⁺	2246.5	17/2 ⁺		
569	2622.6	21/2 ⁻	2053.3	19/2 ⁻		
582	2571.9	19/2 ⁺	1990.1	15/2 ⁺		
605	2571.9	19/2 ⁺	1966.9	17/2 ⁻		
656	2622.6	21/2 ⁻	1966.9	17/2 ⁻		
658	2711.3	23/2 ⁻	2053.3	19/2 ⁻		
665	896.0	15/2 ⁻	231.0	11/2 ⁻		
846	1943.9	15/2 ⁺	1098.0	13/2 ⁻		
867	1098.0	13/2 ⁻	231.0	11/2 ⁻		
869	1966.9	17/2 ⁻	1098.0	13/2 ⁻		
892	1990.1	15/2 ⁺	1098.0	13/2 ⁻		
1048	1943.9	15/2 ⁺	896.0	15/2 ⁻		
1071	1966.9	17/2 ⁻	896.0	15/2 ⁻		
1113	3824.2	25/2 ⁻	2711.3	23/2 ⁻		
1128	3839.0	25/2 ⁻	2711.3	23/2 ⁻		
1157	2053.3	19/2 ⁻	896.0	15/2 ⁻		
1216	3839.0	25/2 ⁻	2622.6	21/2 ⁻		
1722	2618.2	17/2 ⁺	896.0	15/2 ⁻		

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Level Scheme

 $^{139}_{60}\text{Nd}_{79}$

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