130 Te(36 S, α 4n γ) 2005Pi21

		History	
Туре	Author	Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 141, 1 (2017)	1-Feb-2017

E=170 MeV. Measured E γ , I γ , $\gamma\gamma$ using Euroball III array of 14 seven-element 'Clusters', 26 four-element 'Clovers' and 30 single- crystal Ge detectors, all detectors were Compton-suppressed. The g.s. band and two negative-parity side bands extended to higher spins.

According to 2005Pi21 the production of ¹⁵⁸Dy channel was 1% of the total cross section (the experiment being designed for the study of other nuclei) reason for which presumably, although they extended the g.s. band and two negative-parity side bands to higher spins, they did not report most of the inter-band linking transitions in the low energy part of the level scheme and three other bands that were previously reported by 2003Ha45.

¹⁵⁸Dy Levels

All three bands experience crossings due to AB and BC ($i_{13/2}$ neutrons) and A_pB_p ($h_{11/2}$ protons), in that order, at higher spins and excitation energies.

E(level)	$J^{\pi \dagger}$	E(level)	$J^{\pi \dagger}$	E(level)	$J^{\pi \dagger}$	E(level)	$J^{\pi \dagger}$
0‡	0^{+}	3370 [@]	15-	6545 [@]	25-	10403#	34-
99 <mark>‡</mark>	2^{+}	3703 [#]	16-	6617 [‡]	26^{+}	10915 [@]	35-
317‡	4+	3781‡	18^{+}	6929 [#]	26-	11337‡	36+
638 [‡]	6+	3905 [@]	17-	7325 [@]	27-	11396 <mark>#</mark>	36-
1045 [‡]	8+	4247 [#]	18^{-}	7462 [‡]	28^{+}	11935 [@]	37-
1521 [‡]	10^{+}	4408 [‡]	20^{+}	7725 [#]	28^{-}	12422 [‡]	38+
2050 [‡]	12^{+}	4492 [@]	19-	8152 [@]	29-	12440 [#]	38-
2453 [@]	11-	4843 [#]	20^{-}	8360 [‡]	30^{+}	13006 [@]	39-
2479 [#]	10^{-}	5087 [‡]	22^{+}	8570 [#]	30-	13539 [#]	40^{-}
2613 [‡]	14^{+}	5129 [@]	21^{-}	9025 [@]	31-	13550 [‡]	40^{+}
2810 [#]	12^{-}	5488 [#]	22^{-}	9305 [‡]	32^{+}	14137 [@]	41^{-}
2888 [@]	13-	5814 [@]	23-	9463 [#]	32-	14724 [‡]	42^{+}
3191 [‡]	16^{+}	5824 [‡]	24^{+}	9946 [@]	33-	15333? [@]	(43 ⁻)
3221 [#]	14-	6183 [#]	24^{-}	10300‡	34^{+}	15946? [‡]	(44 ⁺)

[†] Quoted by 2005Pi21 from 2003Ha45 (can differ from J^{π} values in Adopted Levels, Gammas dataset).

[‡] Band(A): g.s. band.

[#] Band(B): 2-quasiparticle band, $\alpha=0$.

[@] Band(b): 2-quasiparticle band, α =1.

 $\gamma(^{158}\text{Dy})$

Eγ	E _i (level)	\mathbf{J}_i^{π}	$\mathbf{E}_f \mathbf{J}_f^{\pi}$	Eγ	E _i (level)	\mathbf{J}_i^{π}	$\mathbf{E}_f \mathbf{J}_f^{\pi}$	Eγ	E _i (level)	\mathbf{J}_i^{π}	\mathbf{E}_{f}	\mathbf{J}_{f}^{π}
99	99	2+	0 0+	482	3370	15-	2888 13-	590	3781	18^{+}	3191	16+
218	317	4+	99 2+	482	3703	16-	3221 14-	596	4843	20^{-}	4247	18^{-}
321	638	6+	317 4+	529	2050	12^{+}	1521 10+	627	4408	20^{+}	3781	18^{+}
331	2810	12^{-}	$2479 \ 10^{-}$	535	3905	17^{-}	3370 15-	637	5129	21^{-}	4492	19-
407	1045	8+	638 6+	544	4247	18-	3703 16-	645	5488	22-	4843	20^{-}
411	3221	14^{-}	2810 12-	563	2613	14^{+}	2050 12+	679	5087	22^{+}	4408	20^{+}
435	2888	13-	2453 11-	578	3191	16+	2613 14+	685	5814	23-	5129	21-
476	1521	10^{+}	1045 8+	587	4492	19-	3905 17-	695	6183	24^{-}	5488	22^{-}

Continued on next page (footnotes at end of table)

					¹³⁰ Te(³⁶ S, α 4n γ)		2005Pi21 (continued)		
						$\gamma(^{158}\text{Dy})$	y) (contin	ued)	
Eγ	E _i (level)	\mathbf{J}_i^{π}	$\mathbf{E}_f \mathbf{J}_f^{\pi}$	Eγ	E _i (level)	\mathbf{J}_i^{π}	E_f	J_f^π	
731	6545	25-	5814 23-	945	9305	32+	8360	30+	
737	5824	24^{+}	5087 22+	958	2479	10-	1521	10^{+}	
746	6929	26-	6183 24-	969	10915	35-	9946	33-	
760	2810	12^{-}	2050 12+	993	11396	36-	10403	34-	
780	7325	27^{-}	6545 25-	995	10300	34+	9305	32+	
793	6617	26^{+}	5824 24+	1020	11935	37-	10915	35-	
796	7725	28^{-}	6929 26-	1037	11337	36+	10300	34+	
827	8152	29-	7325 27-	1044	12440	38-	11396	36-	
838	2888	13-	2050 12+	1071	13006	39-	11935	37-	
845	7462	28^{+}	6617 26+	1085	12422	38+	11337	36+	
845	8570	30-	7725 28-	1099	13539	40^{-}	12440	38-	
873	9025	31-	8152 29-	1128	13550	40^{+}	12422	38+	
893	9463	32-	8570 30-	1131	14137	41^{-}	13006	39-	
898	8360	30^{+}	7462 28+	1174	14724	42^{+}	13550	40^{+}	
921	9946	33-	9025 31-	1196	15333?	(43 ⁻)	14137	41-	
932	2453	11^{-}	1521 10+	1222	15946?	(44^{+})	14724	42+	
940	10403	34-	9463 32-			. ,			

[†] Placement of transition in the level scheme is uncertain.

Level Scheme		130 Te(36 S, α 4n γ) 2	Legend	
$\begin{array}{c} 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 $		Level Schem	<u>e</u>	Decay (Uncertain)
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$,	(0.1001.111)
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	⁴⁺)τ			<u>15946</u>
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$				<u> </u>
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	+			14724
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$				14137
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	+ -			<u> </u>
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	- +	101		13006
$\begin{array}{c c c c c c c c c c c c c c c c c c c $,− ,+ ,+	10 ⁸²		<u> </u>
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	-	↓ _ ⁰ 0		11935
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	j- j+			11396
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	-	&&		10915
9946 9305 9305 9025 8570 8360 8360 <td>+</td> <td>→ ↓ 0⁴6 50</td> <td></td> <td>10403</td>	+	→ ↓ 0 ⁴ 6 50		10403
$\begin{array}{c c c c c c c c c c c c c c c c c c c $;-			9946
	<u>-</u>		۶ <u>ــــــــــــــــــــــــــــــــــــ</u>	9463
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		¥_		9025
- - 8152 - - - - - <t< td=""><td>)-)+</td><td>¥</td><td></td><td><u> </u></td></t<>) -)+	¥		<u> </u>
3- 7725 3+ 7325 3- 7325 3- 7325 3- 7325 3- 8 3- 8 3- 8 3- 8 3- 8 3- 8 3- 8 3- 8 3- 8)-		[∞]	8152
$\begin{array}{c} 3^{-} & & & & & & & & & & & & & & & & & & &$	3-		×	7725
5^{-} 6929 5^{+} 6929 5^{-} 6617 5^{-} 6545 4^{-} 6545 4^{+} 683 5^{-} 6183 5^{-} 6545 5^{-} 6545 5^{-} 6545 5^{-} 6545 5^{-} 6545 5^{-} 6545 5^{-} 6585 5^{-} 6584 5^{-} 6584 5	3 ⁺			7462
$ \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \end{array}\\ \end{array}\\ \end{array}\\ \end{array} \\ \begin{array}{c} \end{array}\\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\$	5-		×	6929
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	5 ⁺			6617
$\begin{array}{c c} & & & & \\ \hline \\ \hline$	 -		↓ <u>&</u>	6183
2 ⁻ 5488	4+		¥ ↓ Ҭ	5824
	<u>.</u> 2 ⁻			5488

 $^{158}_{66}\text{Dy}_{92}$

¹³⁰Te(³⁶S, α 4n γ) 2005Pi21

Level Scheme (continued)



¹⁵⁸₆₆Dy₉₂

¹³⁰Te(³⁶S,α4nγ) 2005Pi21

Band(A): g	.s. band						
<u>(44</u> ⁺)	15946				Band(l	o): 2-qua band, o	asiparticle =1
1222					(43-)		15333
42+	14724					1100	
1174		Band(B): 2-quaband, α	asiparticle :=0	41-	1196	14137
<u>40</u> +	13550	40-		13539		1131	
1128			1099		39-	_	13006
38+	12422	38-	_	12440		1071	
1085			1044		37-	_	11935
<u>36</u> +	11337	36-	_ _	11396		1020	
1037			993		35-	_	10915
34+	10300	34-	-	10403		969	
995			940		33-	-	9946
32+	9305	32-	+	9463	21-	921	0025
945		30-	893	8570	31	-	9025
<u>30</u> +	8360			0070	29-	873	8152
898		28-	845	7725		827	
28+	7462		796		27-		7325
26 ⁺	6617	26-	+	6929	25-	780	6545
793		24-	746	6183		731	
24+	5824	77 -	695	5/188	23-		5814
22 ⁺ 737	5087		645	3400	21-	685	5129
679 20+	4.400	20-		4843	19-	637	4492
<u>20</u> 627	4408	18-	596	4247	17-	587	2005
18+	3781	16-	544	3703	17	535	3905
<u>16+</u> 590	3191	<u>14</u> -	482	3221	15	482	2888
<u>14</u> ⁺ 578	2613	12 ⁻ /10 ⁻	331	2810 2479	<u>15</u> 11 ⁻	435	2453
<u>12</u> ⁺ 563	2050						•
<u>10+</u> 529	1521	,					
8+ 476	1045						
$\frac{6^+}{407}$	638						
$\frac{4}{2^+}$ 321	99						
$\frac{1}{0^+}$	0						

¹⁵⁸₆₆Dy₉₂