

$^{104}\text{Ru}(^{36}\text{S},3n\gamma)$ 1992Mu09

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	E. Browne, J. K. Tuli		NDS 108,2173 (2007)	1-Oct-2006

A high-spin rotational band in ^{137}Nd was first reported by 1987Wa18 using the $^{104}\text{Ru}(^{36}\text{S},3n\gamma)$ reaction at 150 MeV and an array of up to 28 Ge detectors. A later work by the same group, 1992Mu09, reported the band quadrupole moment from DSAM measurements. The value, $Q_0=4.0$ 5, and its deduced deformation, $\beta_2=0.22$, established the highly deformed character of the band.

The energy and spin of the band were determined by the Legnaro group, 1997Pe06.

See the $^{110}\text{Pd}(^{30}\text{Si},3n\gamma)$, $^{123}\text{Sb}(^{19}\text{F},5n\gamma)$ data set for additional high-spin data.

 ^{137}Nd Levels

<u>E(level)[†]</u>	<u>J^π[†]</u>	<u>E(level)[†]</u>	<u>J^π[†]</u>	<u>E(level)[†]</u>	<u>J^π[†]</u>
4885.6 3	(29/2 ⁺)	7742.9 5	(45/2 ⁺)	11558.7 8	(61/2 ⁺)
5520.4 4	(33/2 ⁺)	8604.4 6	(49/2 ⁺)	12673.9 10	(65/2 ⁺)
6198.9 4	(37/2 ⁺)	9525.0 6	(53/2 ⁺)	13851.8 11	(69/2 ⁺)
6940.5 5	(41/2 ⁺)	10508.9 6	(57/2 ⁺)	15090.3 15	(73/2 ⁺)
				16389.0 18	(77/2 ⁺)

[†] From adopted values.

 $\gamma(^{137}\text{Nd})$




<u>E_γ</u>	<u>I_γ</u>	<u>E_i(level)</u>	<u>J_i^π</u>	<u>E_f</u>	<u>J_f^π</u>	<u>E_γ</u>	<u>I_γ</u>	<u>E_i(level)</u>	<u>J_i^π</u>	<u>E_f</u>	<u>J_f^π</u>
635	100	5520.4	(33/2 ⁺)	4885.6	(29/2 ⁺)	983	100	10508.9	(57/2 ⁺)	9525.0	(53/2 ⁺)
679	100	6198.9	(37/2 ⁺)	5520.4	(33/2 ⁺)	1049	100	11558.7	(61/2 ⁺)	10508.9	(57/2 ⁺)
742	100	6940.5	(41/2 ⁺)	6198.9	(37/2 ⁺)	1114	100	12673.9	(65/2 ⁺)	11558.7	(61/2 ⁺)
802	100	7742.9	(45/2 ⁺)	6940.5	(41/2 ⁺)	1177	100	13851.8	(69/2 ⁺)	12673.9	(65/2 ⁺)
861	100	8604.4	(49/2 ⁺)	7742.9	(45/2 ⁺)	1238	100	15090.3	(73/2 ⁺)	13851.8	(69/2 ⁺)
920	100	9525.0	(53/2 ⁺)	8604.4	(49/2 ⁺)	1297	100	16389.0	(77/2 ⁺)	15090.3	(73/2 ⁺)

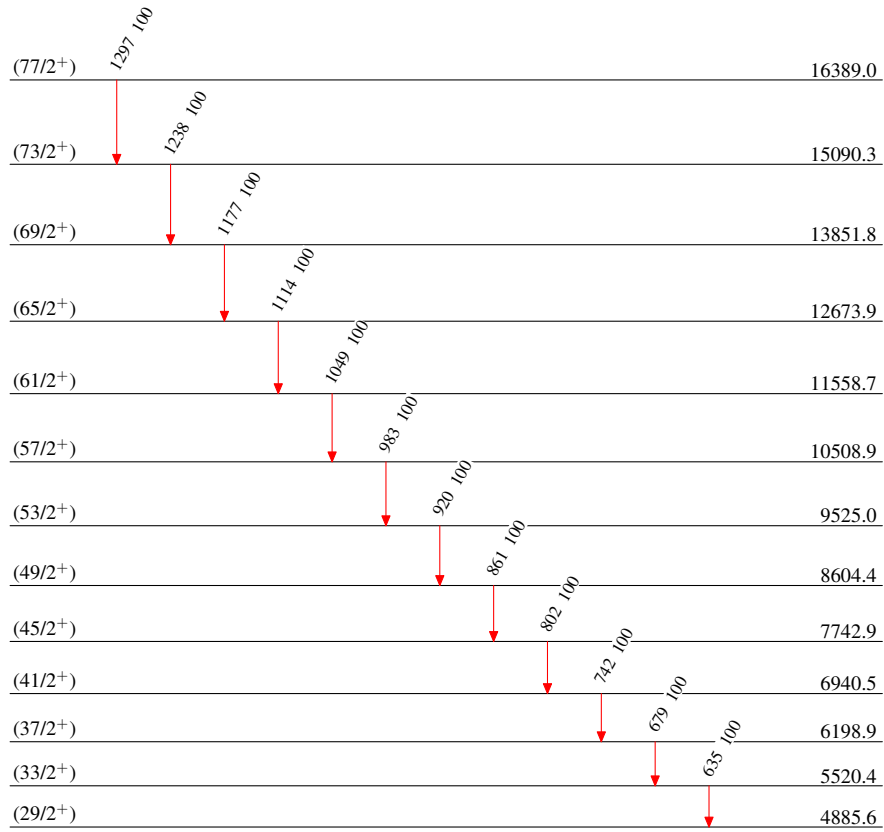
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Level Scheme

Intensities: Type not specified

Legend

-  $I_\gamma < 2\% \times I_\gamma^{\text{max}}$
 $I_\gamma < 10\% \times I_\gamma^{\text{max}}$
 $I_\gamma > 10\% \times I_\gamma^{\text{max}}$

 $^{137}_{60}\text{Nd}_{77}$