^{139}Eu $Z = 63$ $N = 76$ adopted link ENSDF link

Based on ENSDF from Oct 2022, and mass evaluation from 2020

BE = 1138.023 (0.013) MeV
Qbeta+ = 6.982 (0.017) MeV

	Energy	T	J+	J-	J-other		T1/2	
S-alpha=	-2.239 (0.084)							
139EU 1				0.000	(11/2)-	1	17.9 S	6
139EU 2				0.116	(13/2-)	2		
139EU 3				0.122	(9/2-)	3		
139EU 4				0.148	(7/2+)	4	10 US	2
139EU 5				0.207		5		
139EU 6				0.281		6		
139EU 7				0.319		7		
139EU 8				0.323	(15/2-)	8	36.0 PS	21
139EU 9				0.347	(11/2+)	9		
139EU 10				0.407		10		
139EU 11				0.427	(13/2-)	11		
139EU 12				0.468		12		
139EU 13				0.508		13		
139EU 14				0.530	(13/2-)	14		
139EU 15				0.553		15		
139EU 16				0.588		16		
139EU 17				0.664		17		
139EU 18				0.675		18		
139EU 19				0.691		19		
139EU 20				0.809		20		
139EU 21				0.835	(15/2+)	21		
139EU 22				0.865	(15/2-)	22		
139EU 23				0.877	(19/2-)	23	2.77 PS	35
139EU 24				0.969	(17/2-)	24		
139EU 25				1.025		25		
139EU 26				1.040	(17/2-)	26		
S-p =	1.189 (0.018)							
139EU 27				1.418	(19/2+)	27		
139EU 28				1.438	(19/2-)	28		
139EU 29				1.589	(23/2-)	29	1.52 PS	35
139EU 30				1.623	(21/2-)	30		
139EU 31				1.812	(21/2-)	31		
139EU 32				1.891	(19/2+)	32		
139EU 33				2.012	(23/2+)	33		
139EU 34				2.213	(23/2-)	34		
139EU 35				2.228	(21/2+)	35		

```
139EU  36 |                |                |   2.345     (23/2+)          36
139EU  37 |                |                |   2.406     (27/2-)          37
139EU  38 |                |                |   2.432     (25/2-)          38
139EU  39 |                |                |   2.482     (27/2+)          39
139EU  40 |                |                |   2.612     (25/2-)          40
----------                                                                 -----------------
139EU  41 |                |                |   2.694     (27/2-)          41
139EU  42 |                |                |   2.700     (25/2+)          42
139EU  43 |                |                |   2.878     (27/2+)          43
139EU  44 |                |                |   3.097     (31/2-)          44
139EU  45 |                |                |   3.138     (31/2+)          45
139EU  46 |                |                |   3.142     (27/2-)          46
139EU  47 |                |                |   3.267     (29/2+)          47
139EU  48 |                |                |   3.338     (29/2-)          48
139EU  49 |                |                |   3.358     (29/2-)          49
139EU  50 |                |                |   3.561     (31/2+)          50
----------                                                                 -----------------
139EU  51 |                |                |   3.810     (35/2-)          51
139EU  52 |                |                |   3.970     (33/2+)          52
139EU  53 |                |                |   4.117     (33/2-)          53
139EU  54 |                |                |   4.282     (33/2-)          54
139EU  55 |                |                |   4.352     (35/2+)          55
139EU  56 |                |                |   4.722     (37/2-)          56
139EU  57 |                |                |   4.765     (39/2-)          57
139EU  58 |                |                |   4.787     (37/2+)          58
139EU  59 |                |                |   5.210     (39/2+)          59
139EU  60 |                |                |   5.212     (37/2-)          60
----------                                                                 -----------------
139EU  61 |                |                |   5.701     (41/2+)          61
S-2p   =   5.903 ( 0.019)-------------------------------------------------------------------------
139EU  62 |                |                |   5.937     (43/2-)          62
139EU  63 |                |                |   6.149     (43/2+)          63
139EU  64 |                |                |   6.222     (41/2-)          64
139EU  65 |                |                |   6.716     (45/2+)          65
139EU  66 |                |                |   7.190     (47/2+)          66
139EU  67 |                |                |   7.266     (47/2-)          67


S-p    =   1.189 ( 0.018)-------------------------------------------------------------------------
S-n    =  11.720 ( 0.031)-------------------------------------------------------------------------
S-2p   =   5.903 ( 0.019)-------------------------------------------------------------------------
S-2n   =  21.395 ( 0.014)-------------------------------------------------------------------------
S-alpha=  -2.239 ( 0.084)-------------------------------------------------------------------------

S+p       =  -3.673 ( 0.031)
S+n       =  -9.659 ( 0.053)
S+2p      =  -3.721 ( 0.106)
S+2n      = -20.670 ( 0.018)
S+alpha   =   2.554 ( 0.053)
```

```
gap p     =  -2.484 ( 0.036)
gap n     =   2.060 ( 0.062)
gap 2p    =   2.182 ( 0.108)
gap 2n    =   0.724 ( 0.023)
gap alpha =   0.314 ( 0.099)
```