

^{220}Th $Z = 90$ $N = 130$ [link to full NNDC output](#)

Based on ENSDF from Dec 2018, and mass evaluation from 2016

BE = 1690.609 (0.022) MeV

Qbeta+ = 0.925 (0.023) MeV

	Energy T	J+	J-	J-other	T1/2

S-alpha=	-8.953	(0.024)	-----		
220TH 1	0.000	0+			1 9.7 US 6
220TH 2	0.387	2+			2
220TH 3	0.760	4+			3
220TH 4			0.994	5-	4
220TH 5	1.166	6+			5
220TH 6			1.329	7-	6
220TH 7	1.598	8+			7
220TH 8			1.719	9-	8
220TH 9	1.934	8+			9
220TH 10	2.013	10+			10

220TH 11				2.102	10(+)
220TH 12			2.159	11-	12
220TH 13				2.345	10
220TH 14			2.434	12-	14
220TH 15	2.442	12+			15
220TH 16				2.461	11
220TH 17			2.555	13-	17
220TH 18			2.686	13-	18
220TH 19				2.710	(12)
220TH 20	2.885	14+			20

220TH 21				2.900	(14+)
220TH 22				2.958	
220TH 23			3.005	15-	23
220TH 24			3.027	14-	24
220TH 25			3.203	15-	25
220TH 26				3.317	(15)
220TH 27	3.376	16+			27
220TH 28			3.467	17-	28
220TH 29				3.481	
220TH 30				3.559	(16-)

220TH 31				3.681	17(-)
220TH 32	3.867	18+			32
220TH 33			3.954	19-	33

S-p	= 4.189	(0.055)	-----		
220TH 34				4.226	20
220TH 35	4.320	20+			35

220TH	36				4.433	21-				36
220TH	37				4.520	21-				37
220TH	38							4.716	(22+)	38
220TH	39							4.892	(23-)	39

S-p = 4.189 (0.055)-----
 S-n = 7.874 (0.055)-----
 S-2p = 6.560 (0.025)-----
 S-2n = 13.840 (0.025)-----
 S-alpha= -8.953 (0.024)-----

S+p = -1.582 (0.056)
 S+n = -5.800 (0.024)
 S+2p = -4.974 (0.057)
 S+2n = -13.609 (0.025)
 S+alpha = 8.628 (0.032)

gap p = 2.607 (0.079)
 gap n = 2.074 (0.060)
 gap 2p = 1.586 (0.062)
 gap 2n = 0.232 (0.035)
 gap alpha = -0.325 (0.040)