^{18}O(α,γ)   **1978Tr05,1990Vo06**

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia	NDS 127, 69(2015)	1-Apr-2015

^{18}O(α,γ), E=0.6-2.3 MeV.

1978Tr05: Measured Eγ,Iγ,I$\gamma(\sigma)$,Iγ(E); Enriched ^{18}O targets. Ge(Li) detector.

Other references: 1990Vo06: ^{18}O(α,γ), E <0.78 MeV. Measured resonance γ-ray yields.

1968Gr07: ^{18}O(α,γ), E=11,89, 12,28 MeV.

1970Ch18: ^{18}O(α,γ), E=1.6-5.0 MeV. Measured σ(E;Eγ,$\theta(\gamma)$).

1994Gi01: ^{18}O(α,γ), E<1 MeV. Measured $\gamma(\theta)$.

^{22}Ne Levels

E(level)‡	J$^{\pi\dagger}$	T$_{1/2}$$^{@}$	S^b	Comments
0.0				
(1275)				
(3358)				
(4456)				
(5146)				
(5329)				
(6311)				
(6345)				
(6854)				
(7489)				
(8900)				
10208.5$^{\#}$ *10*	1$^-$	<2 keV	0.230 *25*	Eα(lab)=662.1 keV *10* (1990Vo06).
10280.4$^{\#}$ *10*	0$^+$,1$^-$,2$^+$	<2 keV	0.56 *6*	Eα(lab)=749.9 keV *10* (1990Vo06).
10294.8$^{\#}$ *10*	2$^+$	<2 keV	1.20 *12*	Eα(lab)=767.6 keV *10* (1990Vo06).
10617 *5*	5$^-$			
10696 *4*		<4$^{\&}$ keV		
10706 *6*		<10$^{\&}$ keV		
10752 *4*	5$^-$			
10860 *4*				
10925 *5*	1$^-$			
11032 *6*	(8$^+$,6$^+$)	<10$^{\&}$ keV		
11130 *5*		<5$^{\&}$ keV		
11196 *4*		7^a keV		
11272 *5*	2$^+$,3$^+$,4$^+$	7^a keV		
11428 *10*	$^+$	47 keV		
11470 *5*	1$^-$	<3$^{\&}$ keV		
11519^a		6^a keV		
11577^a		16^a keV		
11686 *5*	2$^+$			J$^\pi$: From 1970Ch18.
11745^a		41^a keV		
11751^a	1$^-$	8^a keV		J$^\pi$: From 1970Ch18.
11886 *10*	1$^-$			J$^\pi$: From $\gamma(\theta)$ measurements in 1968Gr07.
12280 *10*	1$^-$			J$^\pi$: From $\gamma(\theta)$ measurements in 1968Gr07.

† Values reported from $\alpha\gamma$ angular distribution (1978Tr05).

‡ From 1978Tr05 for E<11500 and from 1968Gr07, 1970Ch18 for E>11500, except as noted.

$^\#$ Deduced using Eα(lab) (1990Vo06) and reaction Q value of 9666.81 keV *2* (2012Wa38).

^{18}O(α,γ)   **1978Tr05,1990Vo06 (continued)**

^{22}Ne Levels (continued)

@ From 1990Vo06, except otherwise noted.
& From 1978Tr05.
^{a} From 1970Ch18.
^{b} From 1990Vo06. Astrophysical S factor.

$\gamma(^{22}$Ne)

| E_i(level)	J^{π}_i	$E_{\gamma}{}^{\dagger}$	I_{γ}	E_f	Mult.	δ	Comments
10208.5	1^-	8932‡	25‡ 6	1275?			
		10206‡	100‡ 6	0.0			
10280.4	$0^+,1^-,2^+$	2791‡	23‡ 7	7489?			
		3426‡	45‡ 9	6854?			
		4951‡	100‡ 12	5329?			
		5824‡	2‡ 1	4456?			
		9003‡	57‡ 12	1275?			
10294.8	2^+	2806‡	19‡ 5	7489?			
		3441‡	16‡ 5	6854?			
		4965‡	30‡ 7	5329?			
		5838‡	11‡ 4	4456?			
		9018	100 12	1275?	D+Q	0.04 5	δ: From 1994Gi01.
10617	5^-	4270	100 8	6345?			
		7260	52 8	3358?			
10696		7340	100	3358?			
10706		9430	100	1275?			
10752	5^-	4440	100 10	6311?			
		7390	92 10	3358?			
10860		9585	100	1275?			
10925	1^-	9650	100 9	1275?			
		10925	79 9	0.0			
11032	$(8^+,6^+)$	4720	100	6311?			
11130		4820	100	6311?			
11196		2300	100 4	8900?			
		9920	18 4	1275?			
11272	$2^+,3^+,4^+$	6120	100 15	5146?			
		7910	81 15	3358?			
11428	$^+$	10150	100	1275?			
11470	1^-	6320	100 4	5146?			
		10190	33 4	1275?			
		11470	49 4	0.0			

† Not reported by authors. Calculated from level energy differences, recoil energy subtracted.
‡ From 1990Vo06. Eγ deduced from level energy difference and recoil energy subtracted.

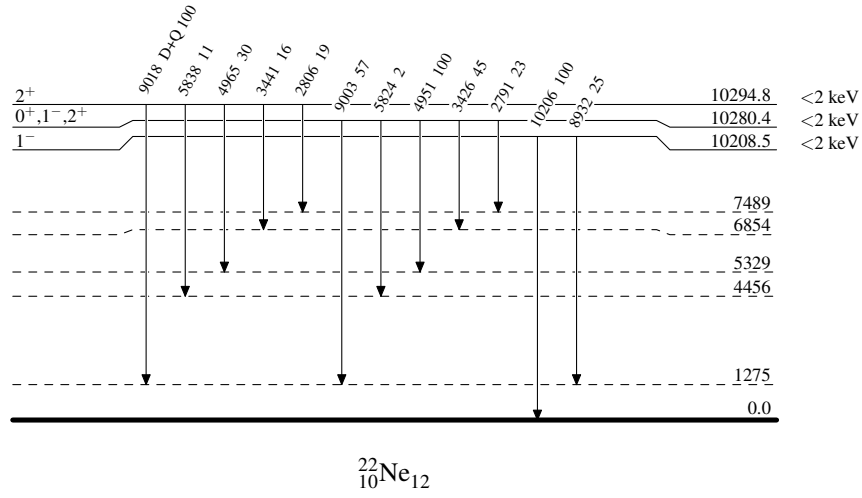^{18}O(α,γ) **1978Tr05,1990Vo06**

Level Scheme

Intensities: Relative photon branching from each level
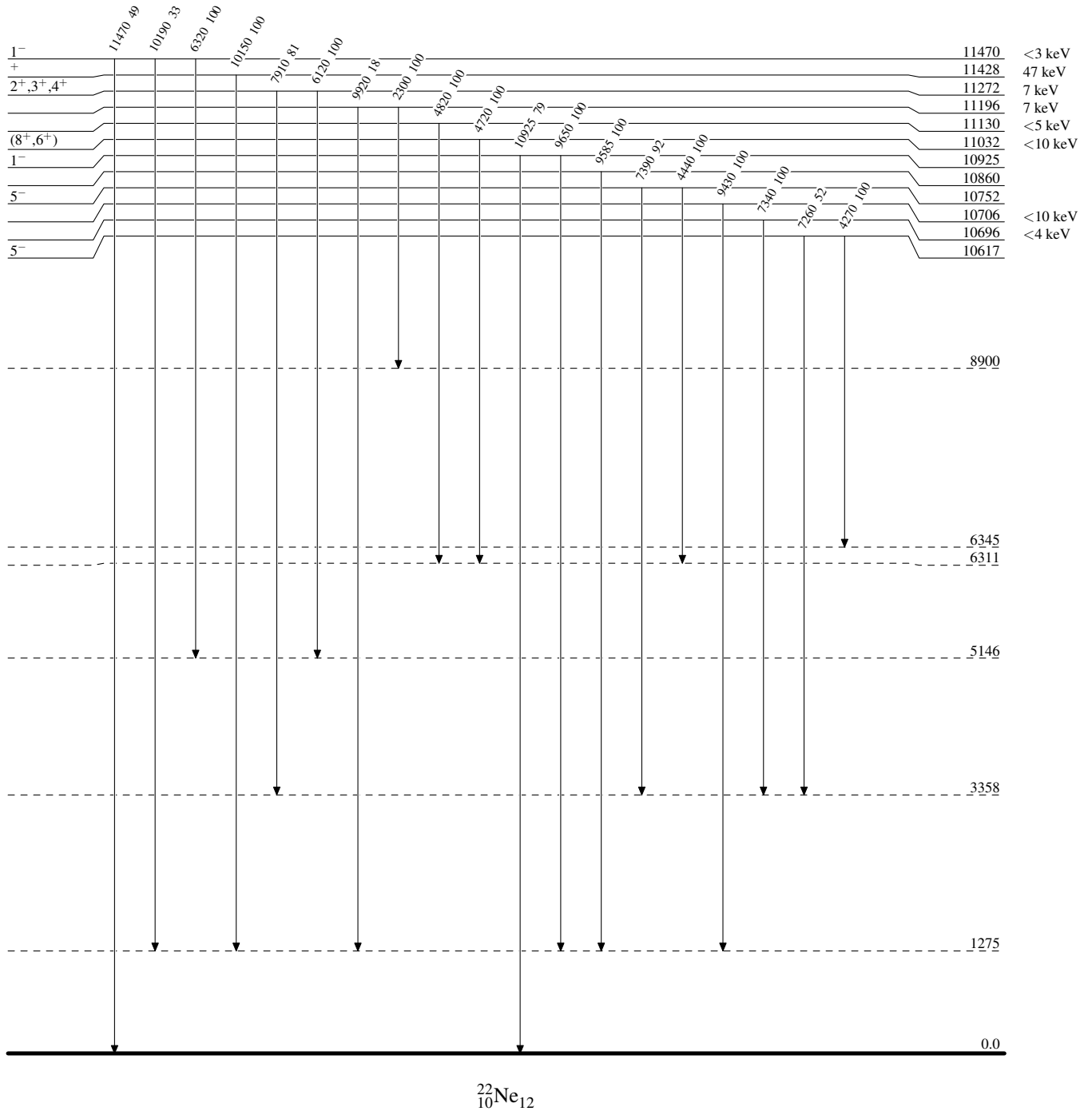
$^{22}_{10}$Ne$_{12}$

^{18}O(α,γ)   **1978Tr05,1990Vo06**

Level Scheme (continued)

Intensities: Relative photon branching from each level

$^{22}_{10}$Ne$_{12}$