${}^{9}\text{Be}({}^{22}\text{Mg},{}^{20}\text{Mg}\gamma)$ **2007Ga38**

	History		
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	J. H. Kelley, G. C. Sheu	ENSDF	20-June-2019

2007Ga38: Two-neutron removal from ${}^{22}\text{Mg}$ was studied.

A beam of ${}^{22}\text{Mg}$, produced by fragmenting a ${}^{36}\text{Ar}$ beam on a thick ${}^{9}\text{Be}$ target, impinged in a 188 mg/cm^2 ${}^{9}\text{Be}$ foil at the S800 target position. The ${}^{20}\text{Mg}$ reaction products were detected in the focal plane of the spectrometer, while associated gamma-rays were detected using sixteen segmented HPGe detectors from the SeGa array that were positioned either at 37° or 90° with respect to the incident beam.

An Eγ= 1598 *10* transition was observed, which is associated with the first 2$^+$ state in ${}^{20}\text{Mg}$. The Isobaric Mass Multiplet Equation (IMME) is discussed for the A=20 T=2 and Jpi=0$^+$ and 2$^+$ states.

${}^{20}\text{Mg}$ Levels

E(level)	J$^\pi$	Comments
0	0$^+$	
1598 *10*	2$^+$	T=2
		E(level): mirror state of first 2$^+$ state at 1674 in ${}^{20}\text{O}$.

γ(${}^{20}\text{Mg}$)

E$_i$(level)	J$_i^\pi$	E$_\gamma$	I$_\gamma$	E$_f$	J$_f^\pi$
1598	2$^+$	1598 *10*	100	0	0$^+$

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Level Scheme

Intensities: % photon branching from each level

${}^{20}_{12}\text{Mg}_8$