

$^9\text{Be}(^{48}\text{Ca},\text{X}\gamma)$  2004So30

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jun Chen	NDS 149, 1 (2018)	1-Jan-2018

**2004So30:** E=60.3 MeV/nucleon  $^{48}\text{Ca}$  beam was produced at GANIL. Target was 2.67 mg/cm<sup>2</sup> thick  $^9\text{Be}$ . Fragments were detected in the focal plane of the SPEG magnetic spectrometer by the combination of ionization and drift chambers and identified based on residual energies obtained in a thick plastic scintillator and time of flight derived from the timing signals in the plastic scintillator with respect to the cyclotron radio frequency.  $\gamma$  rays were detected with an array of 74 BaF<sub>2</sub> and 3 segmented Ge clover detectors. Measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma(\theta)$ . Deduced levels, J,  $\pi$ . Comparisons with shell-model calculations.

 $^{39}\text{P}$  Levels

E(level)	$J^\pi$ <sup>†</sup>
0.0	(1/2 <sup>+</sup> )
352 5	(3/2 <sup>+</sup> )
966 5	(5/2 <sup>+</sup> )
2167? 11	

<sup>†</sup> From [2004So30](#), based on  $\gamma(\theta)$  and assumption of 1/2<sup>+</sup> for g.s.

 $\gamma(^{39}\text{P})$ 

$E_\gamma$	$I_\gamma$	$E_i(\text{level})$	$J_i^\pi$	$E_f$	$J_f^\pi$	Comments
355 6	100	352	(3/2 <sup>+</sup> )	0.0	(1/2 <sup>+</sup> )	Mult.: $\Delta J=1$ transition from $I_\gamma(122^\circ)/I_\gamma(136^\circ)=1.2$ 5; $I_\gamma(85^\circ)/I_\gamma(136^\circ)=1.8$ 9 ( <a href="#">2004So30</a> ).
619 7	60	966	(5/2 <sup>+</sup> )	352	(3/2 <sup>+</sup> )	Mult.: $\Delta J=0$ or 2 transition from $I_\gamma(122^\circ)/I_\gamma(136^\circ)=1.0$ 7; $I_\gamma(85^\circ)/I_\gamma(136^\circ)=1.0$ 8 ( <a href="#">2004So30</a> ).
963 6	90	966	(5/2 <sup>+</sup> )	0.0	(1/2 <sup>+</sup> )	
1201 <sup>†</sup> 9	70	2167?		966	(5/2 <sup>+</sup> )	

<sup>†</sup> Placement of transition in the level scheme is uncertain.

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Legend

Level SchemeIntensities: Relative  $I_\gamma$ 

- ▶  $I_\gamma < 2\% \times I_\gamma^{\text{max}}$
- ▶  $I_\gamma < 10\% \times I_\gamma^{\text{max}}$
- ▶  $I_\gamma > 10\% \times I_\gamma^{\text{max}}$
- - - -▶  $\gamma$  Decay (Uncertain)

