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## III–21 Magnetic Moments of High-Spin Isomeric States in Po Isotopes*

S. NAGAMIYA, Y. YAMAZAKI, O. HASHIMOTO,
T. NOMURA, K. NAKAI and T. YAMAZAKI

*Department of Physics, University of Tokyo, Bunkyo-ku, Tokyo*
*Cyclotron Laboratory, the Institute of Physical and Chemical Research, Wako-shi, Saitama-ken*

The $g$ factors of the $8^+$ states of $^{206}$Po and $^{204}$Po have been determined by the stroboscopic resonance method, and the $g$ factors of the $8^+$ states of $^{210}$Po and $^{208}$Po and of the $17/2^-$ state of $^{209}$Po have been remeasured in order to investigate the variation of the $g$ factors in going from $^{210}$Po to $^{204}$Po. The aligned isomeric states were populated by (particle, xn) reactions with microscopic beam bursts from the IPCR cyclotron. Stroboscopic resonance curves are shown in Fig. 1. Experimental results (preliminary values) are listed in the Table I.

All the $8^+$ states show nearly the same $g$ factor, indicating that the main configuration is $(\pi h_{9/2}^2)8^+$ throughout. The decrement of $g(^{210}\text{Po } 8^+)$ from $g(^{209}\text{Bi } 9/2^-)$ is accounted for by the blocking effect on the $(h_{11/2}^{-1}h_{9/2})1^+$ type core polarization. The increment of $g(^{208}\text{Po } 8^+)$ from $g(^{210}\text{Po } 8^+)$ may be due to the $(\nu p_{3/2}^{-1}p_{1/2})1^+$ type core polarization. The rather smaller value of $g(^{209}\text{Po } 17/2^-)$ compared with that expected from the additivity relation is presumably due to a mixing of the $(8^+ \times \nu p_{3/2}^{-1})17/2^-$ state into the $(8^+ \times \nu p_{1/2}^{-1})17/2^-$ state.

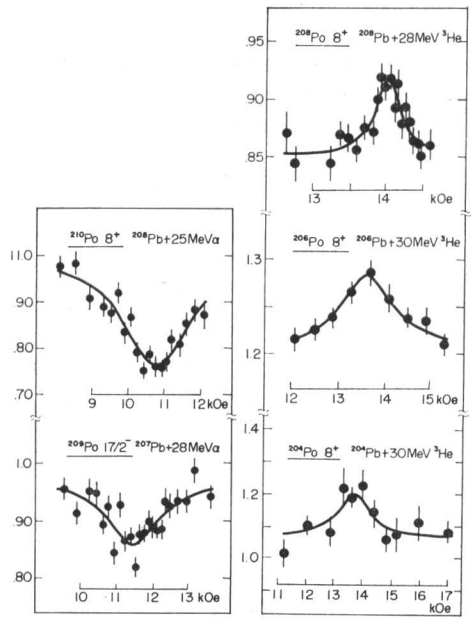


Fig. 1. Stroboscopic resonances for several isomeric states.

Table I.

| | $J^\pi$ | $T_{1/2}$ | Configuration | $g_{exp}$ | $g_{cal}$ from additivity[a)] |
|---|---|---|---|---|---|
| $^{210}$Po | $8^+$ | 110 ns | $\pi h_{9/2}^2$ | 0.901 ± 0.013 | 0.910 |
| $^{209}$Po | $17/2^-$ | 100 | $\pi h_{9/2}^2 \nu p_{1/2}^{-1}$ | 0.897 ± 0.015 | 0.926 |
| $^{208}$Po | $8^+$ | 380 | $\pi h_{9/2}^2(\nu p_{1/2}^{-2})0^+$ | 0.911 ± 0.010 | 0.910 |
| $^{206}$Po | $8^+$ | 212 | $\pi h_{9/2}^2(\nu p_{1/2}^{-2}\nu f_{5/2}^{-2})0^+$ | 0.905 ± 0.018 | 0.910 |
| $^{204}$Po | $8^+$ | 140 | $\pi h_{9/2}^2(\nu p_{1/2}^{-2}\nu f_{5/2}^{-4})0^+$ | 0.905 ± 0.040 | 0.910 |

a) deduced from the known $g$ factors by use of the additivity relation of the $g$ factor.

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