

STUDY OF LOW-LYING STATES IN  $^{110}\text{Ag}$  FOLLOWING  
 $^{109}\text{Ag}(n,\gamma)$  REACTION

M. Bogdanović, S. Koički, J. Simić, B. Lalović, D. Breitig,  
R. Koch, H.A. Baader, O.W.B. Schult, W.R. Kane, R.F. Casten  
Boris Kidrič Institute for Nuclear Sciences, Belgrade, Yugoslavia,  
Universität Ulm, Germany, Institut für Kernphysik, Kernforschung-  
sanlage, Jülich, Germany and Brookhaven National Laboratory,  
New York, USA

A preliminary decay scheme of  $^{110}\text{Ag}$  is presented contain-  
ing 43 levels up to about 800 keV excitation energy. About 750 lines  
in an energy interval from 50 to 1200 keV following  $^{109}\text{Ag}(n,\gamma)^{110}\text{Ag}$   
reaction have been measured with the bent-crystal spectrometer at  
Risø. Delayed coincidence and singles measurements to investigate  
the population of the 118.718 keV ( $T_{1/2}=37$  ns) isomeric level per-  
formed in Belgrade resulted in about 600 gamma lines in the energy  
interval from 100 to 1200 keV. From these data 15 levels in the  
decay scheme of  $^{110}\text{Ag}^{(1)}$  are confirmed and about 20 new levels are  
proposed. Prompt and delayed coincidence data obtained in Brookha-  
ven National Laboratory have been also used in construction of the  
 $^{110}\text{Ag}$  decay scheme.

From this work and from the measurements of primary  $(n,\gamma)$   
spectrum<sup>(2)</sup>, internal conversion electrons<sup>(3)</sup> and  $(d,p)$  stripping  
reaction<sup>(4)</sup> it was possible to establish a part of the proton-  
neutron multiplet. The  $1^+$ ,  $2^+$ ,  $3^+$  and  $6^+$  levels at energies 0, 198.70,  
304.524 and 117.69 keV, respectively are probably candidates for  
the parabola of the proton-neutron multiplet  $|\kappa 7/2, \nu 5/2| 1^+, 2^+,$   
 $3^+, 4^+, 5^+, 6^+$ . The  $4^+$  and  $5^+$  states seem to be missing. For establi-  
shing of the other multiplet states additional measurements with  
population of higher spin states are necessary. Spin and parity  
assignments have been also made for some low-lying states<sup>(5)</sup>.

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