

STUDY OF THE $^{46,48}\text{Ti}(\vec{p},\alpha)$ REACTION

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The $^{46,48}\text{Ti}(\vec{p},\alpha)$ reaction has been studied using 80 MeV polarized protons from the IUCF. Reaction alpha particles were detected using the magnetic spectrograph and helical wire counter. This reaction was found to populate selectively high spin states in the residual nuclei which can be reached by pickup of $(\nu_{f_{7/2}}^2 \pi_{f_{7/2}}^-)J^-$ configurations. Preliminary analysis of the data revealed that states having spins ranging from $7/2^-$ to $19/2^-$ were populated in both ^{43}Sc and ^{45}Sc . Large analyzing powers were observed to most of the levels. In addition, the $^{45}\text{Sc}(21/2^-, 23/2^-)$ level at 5.44 MeV was strongly populated. A two-step reaction calculation involving triton pickup and inelastic excitation appears to explain the observed strength to this state if the spin is assumed to be $23/2^-$, but produces much too small a cross section if the $21/2^-$ assignment is chosen.

The analysis of the data is in progress. While it may be desirable to take a few more data points, the experimental phase of this experiment is nearly completed.

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