Advances in Radioactive Isotope Science



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Transfer Reactions with Isomeric Beams

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Nuclear reactions induced by isomeric beams have long been considered an extremely attractive tool for nuclear structure, nuclear reactions and nuclear astrophysics studies. One of the most interesting cases is in 26Al, where a 0+ isomer is located 228 keV above the 5+ ground state. Proton captures on both, the ground state and the isomeric state, could have a direct impact on the abundance of 26Al in the Galaxy. In this talk, I will discuss our efforts to develop and characterize an isomeric 26Alm beam with sufficient intensity, purity, high isomer-to-ground state ratio and energy resolution to study transfer reactions induced by the 0+ isomer in 26Al. Results on the measurement of the 26Alm(d,p)27Al reaction and its astrophysical

implications will also be presented.

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