Excitation of low-lying state by E3 transition in reaction with real photons


Nuclear experimental physics

Abstract

The yield of the isomeric state $^{117m}$Sn ($E_{iso} = 314.58$ keV) has been measured in $(\gamma, \gamma')$ reaction by activation method with the bremsstrahlung end-point energy from 2.1 to 3.0 MeV. Only one intermediate state (IS) responsible for the isomer feeding has been found. The excitation energy of the IS ($2.25 \pm 0.05$) MeV and photoproduction integral cross section ($0.022 \pm 0.002$) eV b have been deduced. Microscopic calculations within the Quasiparticle-phonon model have been performed to learn on the IS structure. We conclude that the IS is excited in the present experiment by the $E3$ transition.