

Abstracts

Two-Photon Pumping of a Four-Level System in Ammonia to Obtain 12.16 μ m Radiation for Isotope Separation

J.W. Leap, K.J. Kim, E.G. Malk and P.D. Coleman. "Two-Photon Pumping of a Four-Level System in Ammonia to Obtain 12.16 μ m Radiation for Isotope Separation." 1978 MTT-S International Microwave Symposium Digest 78.1 (1978 [MWSYM]): 424-426.

Radiation at 12.16 μ m (822.65 cm⁻¹) has been obtained from $^{14}\text{NH}_3$ using the $2\text{U}\text{2p}_{3/2}(53)$ to $2\text{S}_{1/2}(63)$ transition with the upper level pumped from $\text{Ga}(33)$ via $2\text{S}_{1/2}(43)$ by two CO_2 TEA lasers. In an unoptimized cavity, efficiency was 1%: 0.5 mJ of 12.16 mJ out with 50 mJ of input (25% $\text{P}_9/(8)$ /sup 13/CO₂ and 75% $\text{P}_9/(24)$ /sup 12/CO₂). This particular wavelength is relevant to LIS of uranium.

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