Abstracts

Experimental Evaluation of a Ruby Maser at 43 GHz (Short Papers)

C.R. Moore and D. Neff. "Experimental Evaluation of a Ruby Maser at 43 GHz (Short Papers)." 1982 Transactions on Microwave Theory and Techniques 30.11 (Nov. 1982 [T-MTT]): 2013-2015.

The inversion ratio of pink ruby has been measured at several frequencies between 27 and 43 GHz for the push-puff pump angle of 54.7°. From these measurements a single-stage maser was designed which yielded 8±1-dB net gain and a 3-dB bandwidth of 180 MHz at a center frequency of 42.5 GHz. A multistage reflected wave maser could achieve bandwidths exceeding 1 GHz with 30-dB net gain at center frequencies near 40 GHz.

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