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Judd-Ofelt Intensity Analysis of Tb^{3+} in $TbAlO_3$[1] KELLY NASH, RAYLON YOW, JOHN GRUBER, DHIRAJ SARDAR, Department of Physics and Astronomy, University of Texas at San Antonio, San Antonio, TX 78249-0697, USA, UYGUN VALIEV, Uzbekistan National University, 700174 Tashkent, Uzbekistan, EDVARD KOKANYAN, Institute for Physical Research, National Academy of Sciences, 378410 Ashtarak, Armenia — Spectroscopic and laser properties of Tb^{3+} in $TbAlO_3$ are analyzed using the standard Judd-Ofelt (J-O) theoretical model. The J-O model has been applied to the room temperature absorption spectra of Tb^{3+} in $TbAlO_3$ to determine the radiative decay rates, branching ratios, and radiative lifetimes. The quantum efficiency of the $^5D_4 \rightarrow {}^7F_5$ transition is determined using the radiative and fluorescence lifetimes. Finally, the spectroscopic results of Tb^{3+}in $TbAlO_3$ are compared with those of Tb^{3+} in other hosts.

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