Abstract Submitted
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Spectroscopic analysis of Pr^{3+} ($4f^2$) absorption intensities in a plastic host (HEMA).[1] DAVID STONESTREET, KELLY NASH, DOUG DEE, RAYLON YOW, JOHN GRUBER, DHIRAJ SARDAR, University of Texas at San Antonio — A spectroscopic investigation has been performed on the Pr^{3+} ions embedded in 2-hydroxyethyl methacrylate (HEMA) solid plastic host. The standard Judd-Ofelt analysis was applied to the room temperature absorption intensities of Pr^{3+} transitions to determine three phenomenological intensity parameters: Ω_2, Ω_4 and Ω_6. Values of the intensity parameters were subsequently used to determine the decay rates (emission probabilities), radiative lifetimes, and branching ratios of the principal intermanifold transitions of Pr^{3+} from the $^3P_2$, $^1D_2$, and $^3P_0$ manifold states to the lower-lying manifolds. The spectroscopic properties Pr^{3+} in HEMA will be compared with those in glasses.

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David Stonestreet
University of Texas at San Antonio

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