

Saturable-absorber Q-switching of the $\text{Er}^{3+}:\text{Y}_3\text{Al}_5\text{O}_{12}$ (Er:YAG) laser at 1.64 μm by U^{2+} in difluorides

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Eyesafe lasers with wavelengths in the range of 1.5 to 1.8 μm have important applications in remote sensing, lidar, and eyesafe range finding. Several new saturable-absorber Q-switches for the 1.54- μm Er^{3+} :glass laser have recently been reported.¹⁻³ In this work, $\text{U}^{2+}:\text{SrF}_2$ and $\text{U}^{2+}:\text{CaF}_2$ crystals were used to Q-switch the 1.64- μm Er:YAG laser.⁴

The Er:YAG laser crystal used in our experiments was longitudinally pumped with a 1.54- μm free-running Er:glass laser. This method permits us to directly pump the upper energy level manifold ($^4I_{13/2}$) of the

- Er³⁺:Y₃Al₅O₁₂ (Er:YAG) laser at 1.64 μm," submitted to Appl. Phys. Lett.
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