

## **Laser performance investigation of a new UV active media $\text{LiY}_{0,3}\text{Lu}_{0,7}\text{F}_4:\text{Ce}^{3+}$ and $\text{LiY}_{0,3}\text{Lu}_{0,7}\text{F}_4:\text{Ce}^{3++}\text{Yb}^{3+}$**

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### **Abstract**

We show that the  $\text{LiY}_{0,3}\text{Lu}_{0,7}\text{F}_4:\text{Ce}^{3+}$  and  $\text{LiY}_{0,3}\text{Lu}_{0,7}\text{F}_4:\text{Ce}^{3++}\text{Yb}^{3+}$  crystals are promising active media of UV spectral range with low-threshold lasing (30-90 mJ/cm<sup>2</sup>). Due to crystal-chemical approach (additional doping by ions  $\text{Yb}^{3+}$ ) we obtained the effect of suppression of spurious photodynamic processes. The active medium  $\text{LiY}_{0,3}\text{Lu}_{0,7}\text{F}_4:\text{Ce}^{3++}\text{Yb}^{3+}$  combines properties of saturable amplifier and oscillator with small saturation energy, and promising to generate pulses of ultrashort duration in the UV spectrum. © Published under licence by IOP Publishing Ltd.

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