# Intensification of multiwavelength picosecond oscillation of synchronously pumped Raman lasers based on $SrMoO_4$ and $Sr(MoO_4)_{0.8}(WO_4)_{0.2}$ crystals

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The present work is aimed at solving the scientific problem of intensification of multiwavelength repetitively pulsed oscillation of picosecond crystalline Raman lasers with a combined frequency shift on primary and secondary vibrational resonances for the tasks of fluorescent molecular bioimaging. A one of the most perspective Raman crystals – $SrMoO_4$ with the widest secondary vibrational resonance (among the scheelite-type crystals) and its solid solution $Sr(MoO_4)_{0.8}(WO_4)_{0.2}$ with the combined vibrational resonances were used as the active medium. Simultaneous Raman oscillation at up to five closely spaced wavelengths of 1193, 1242, 1294, 1335, and 1396 nm under high-intense synchronous picosecond pumping at 1080 nm with different combinations of long (888 cm-1) and short (327 cm-1) Raman shifts was achieved.

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