

08,09

Investigation of Ce^{3+} impurity centers in UV active media $\text{Ce} : \text{LiCaAlF}_6$ and $\text{Ce} : \text{LiSr}_{0.8}\text{Ca}_{0.2}\text{AlF}_6$ *

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Fluoride crystals with the colquiriite structure LiCaAlF_6 doped with Ce^{3+} ions are used as active media for lasers of ultraviolet spectral range with advantages of laser wavelength tuning range and no photoinduced degradation of laser properties. In this work we show that the multicenter character of Ce^{3+} segregation in this matrix agrees with the previously known peculiarities. On the basis of spectral-kinetic properties investigation, we show the increase of segregation coefficient for Ce^{3+} in $\text{LiSr}_{0.8}\text{Ca}_{0.2}\text{AlF}_6$ mixed crystal. In laser experiments with $\text{Ce} : \text{LiCaAlF}_6$ crystal, the differential efficiency of 47% and the wavelength tuning from 281 to 312 nm have been reached.

Studies were carried out in the frame of the state assignment in the sphere of scientific activities (Project no. 3.1156.2017/4.6 and no. 3.5835.2017/6.7) and laser experiments was funded by RFBR according to the research project 18-32-00936.

DOI: 10.21883/FTT.2019.05.47579.05F

* Полный текст статьи опубликован в журнале „Physics of the Solid State“ (Т. 61. Вып. 5).