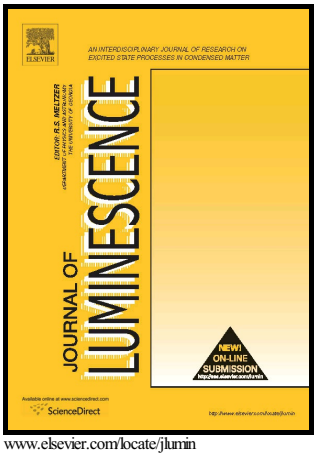

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Fe^{3+} Red Phosphors based on Lithium Aluminates and an Aluminum Lithium Oxyfluoride Prepared from LiF as the Li Source

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Abstract

LiF was used as the Li source to prepare Fe^{3+} red phosphors based on lithium aluminates and an aluminum lithium oxyfluoride. LiF led to the three types of the host materials of α-$LiAlO_2$, γ-$LiAlO_2$ and Al_4LiO_6F with the different synthetic conditions. Metastable α-$LiAlO_2$ crystallized up to 800 °C under Li-rich conditions in the starting mixture (eg. LiF/$Al(OH)_3$ =3). α-$LiAlO_2$ converted to γ-$LiAlO_2$ above 800 °C. The flux effect of the