luminescence, fluorescence (solids and liquids)

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Optimizing of Gd_2O_3-Based Red Phosphors Using Combinatorial Chemistry Method. — Using a combinatorial chemistry method to optimize $(Gd_{2-x-y}M_x)O_3:Eu_y{}^{3+}$ (M:Al, Ca, Mg) phosphors for field emission displays, the compositions $(Gd_{1.83}Al_{0.05})$ $O_3:Eu_{0.12}{}^{3+}$, $(Gd_{1.73}Mg_{0.15})$ $O_3:Eu_{0.12}{}^{3+}$, and $(Gd_{1.73}Ca_{0.15})$ $O_3:Eu_{0.12}{}^{3+}$ are obtained. The cathodoluminescence efficiency of the Al co-doped phosphor is superior to that of the commercial red phosphor $Y_2O_3:Eu^{3+}$ at low voltage excitation by at least a factor of 2. — (SEO, SOO YEON; SOHN, KEE-SUN; PARK, HEE DONG; LEE, SEONGHOON; J. Electrochem. Soc. 149 (2002) 1, H12-H18; Dep. Mater. Sci. Eng., Inst. Sci. Technol., Kwangju 500-712, S. Korea; EN)