

Abstract Submitted  
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**Luminescent Properties of  $\text{Ca}_3\text{Sc}_2\text{Si}_3\text{O}_{12}$ :  $\text{Mn}^{2+}$  and  $\text{Ce}^{3+}$  for a White LED** WILLIAM COGGINS, JESSICA LANG, LI MA, Physics Department Georgia Southern Univ. — In this experiment, we studied the excitation and emission properties, as well as the fluorescence decay of the doubly doped  $\text{Ca}_3\text{Sc}_2\text{Si}_3\text{O}_{12}$ :  $\text{Mn}^{2+}$  and  $\text{Ce}^{3+}$  phosphor. The phosphor is coated on a GaN LED chip, and the  $\text{Mn}^{2+}$  and  $\text{Ce}^{3+}$  centers give red and green emissions, respectively, subject to the blue excitation from the chip. Together with the transmitted blue light from the LED chip, the system yields an ideal white light, with a potential application for lighting. The red emission from  $\text{Mn}^{2+}$  ions has a longer decay time than that of the green emission from the  $\text{Ce}^{3+}$ . The color composition and stability along with the input power have also been studied.

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