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## Synthesis and photoluminescence properties of $\text{Ca}_x\text{Si}_y\text{O}_z:\text{Tb}^{3+}$ nanophosphors prepared using solution-combustion method.

Wednesday, 13 July 2011 17:00 (2 hours)

$\text{Tb}^{3+}$ -activated calcium silicate ( $\text{Ca}_x\text{Si}_y\text{O}_z:\text{Tb}^{3+}$ ) nanophosphors have been synthesized by means of simple and low temperatures (500°C) using the solution-combustion of corresponding metal nitrate, TEOS and urea solution mixtures. The structural evolution of the phosphor was studied by X-ray powder diffraction (XRD), scanning electron microscopy (SEM), and the luminescence properties of the phosphor powders investigated as a function of terbium concentration. The XRD study indicates that new peaks appear as the terbium concentration increase results in phase changes from  $\text{CaSiO}_3$  to  $\text{Ca}_3\text{Si}_2\text{O}_7$ . The later phase may be favored as a result of some Si sites substituted by the Tb ions as the concentration of Tb was changed from 1 to 4 mol.

**Level (Hons, MSc, <br> &nbsp; PhD, other)?**

PhD

**Consider for a student <br> &nbsp; award (Yes / No)?**

No

**Would you like to <br> submit a short paper <br> for the Conference <br> Proceedings (Yes / No)?**

Yes

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