Supplementary Material (ESI) for Journal of Materials Chemistry

Nitridation from core-shell oxides for tunable luminescence of $BaSi_2O_2N_2:Eu^{2+}$ LED phosphors

Yunxin Gu,[a] Qinghong Zhang,[a] Yaogang Li*[b] and Hongzhi Wang*[a]

ELECTRONIC SUPPORTING INFORMATION

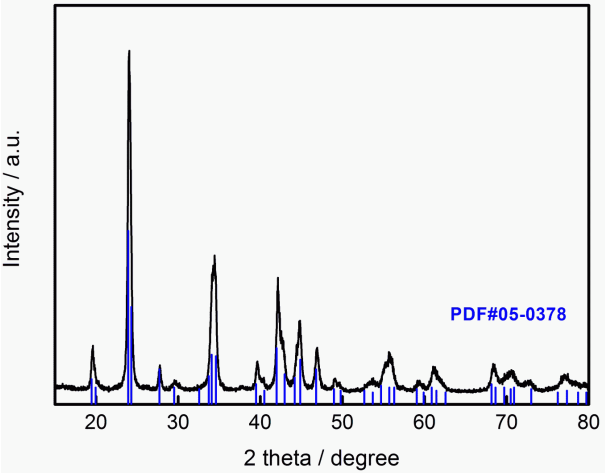

Fig. 1: XRD pattern of (Ba,Eu)CO3 template.

Fig. 1 shows the XRD pattern of $(Ba,Eu)CO_3$ core. It can be observed that the sample is pure $BaCO_3$ with orthorhombic phase, and a=5.27591 Å, b=8.94675 Å, c= 6.41931 Å, V= 303.01 $Å^3$.

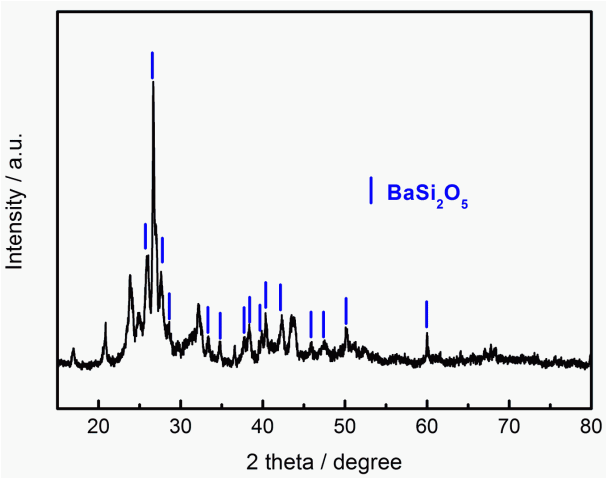

Fig. 2: XRD pattern of the core-shell sample treated at 800 °C in the TGA experiment.

Fig. 2 shows the XRD pattern of the core-shell sample treated after the TGA experiment. The TGA experiment was carried out from 30 °C to 800 °C with the heating rate of 10 °C/min. The main phase of the sample can be corresponded to $BaSi_2O_5$, and some of the impurity phases can be still observed, which may be attributed to the lack of holding time at 800 °C.

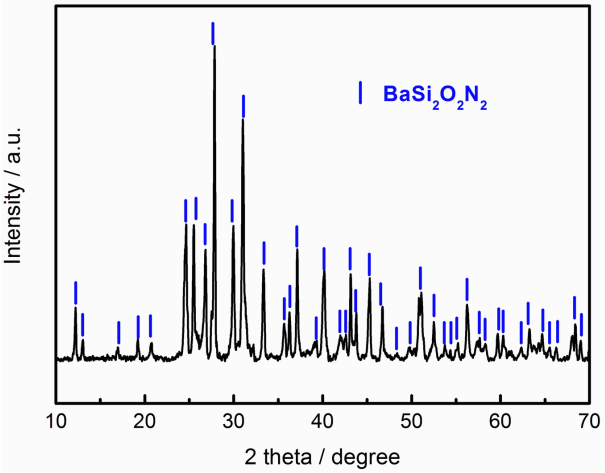

Fig. 3 XRD pattern of the sample prepared at 1300 °C from core-shell precursor.

Fig. 3 shows the XRD pattern of the sample prepared at 1300 °C from core-shell precursor. It can be observed that the sample is pure $BaSi_2O_2N_2$ phase, and N content in the sample was calculated to be 11.87%.