Supporting Information: Surface Specific Visible Light Luminescence from Composite Metal Oxide Nanocrystals

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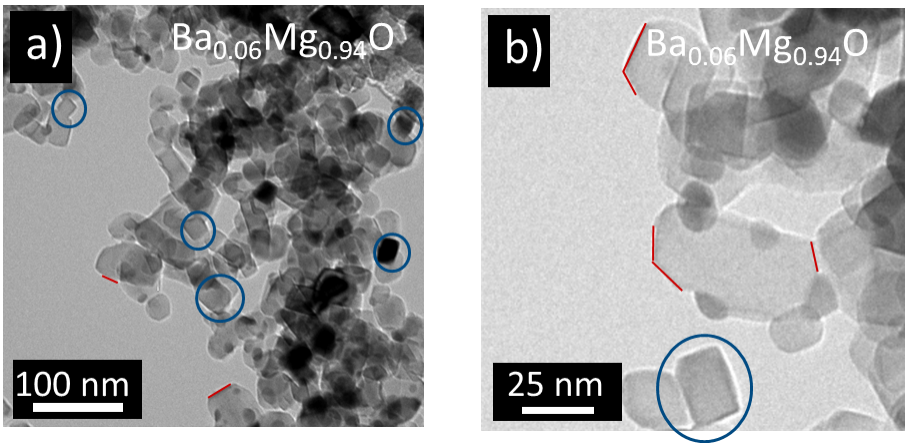

Figure S1: Transmission Electron Micrographs of $Ba_{0.06}Mg_{0.94}O$ nanoparticles after vacuum annealing to T = 1173 K. In comparison to MgO nanocubes and Ba-doped MgO nanoparticles of lower Ba content, these particles are morphologically less distinct. Some adopt cubic shape but have larger sizes than pure MgO particles (circles in Figure S1 a), others support rounded segregates (see also Figure S2).

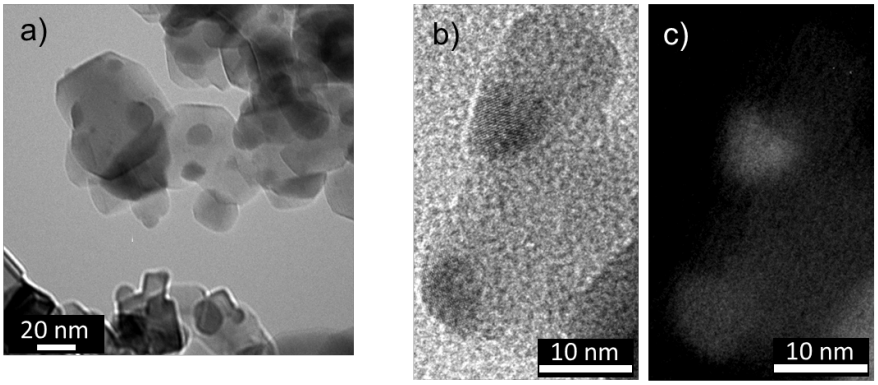

Figure S2: HR-TEM images (a and b) and energy filtering transmission electron microscopy images (c) showing that the rounded dark segregates are rich in Ba (bright area in the energy filtered Ba-map). For energy filtering transmission electron microscopy (EFTEM) investigations, the BaM45 edge at 781 eV was selected for Ba detection using the three-window method. Further details can be found in A. Sternig et al. J. Phys. Chem. C, 115 (2011) 15853.

Table S1: CIE1931 coordinates (x, y, z) for the photoluminescence emission spectra of $Ba_{0.02}Mg_{0.98}O$, $Ba_{0.04}Mg_{0.96}O$, and $Ba_{0.06}Mg_{0.94}O$ particles measured at 298 K and 77 K.

Excitation Wavelength	Measurement Temperature	x	y	z
$Ba_{0.02}Mg_{0.98}O$				
340 nm	298 K	0.1915	0.2326	0.5758
	77 K	0.2280	0.2579	0.5142
390 nm	298 K	0.2653	0.3610	0.3737
	77 K	0.3808	0.4680	0.1512
$Ba_{0.04}Mg_{0.96}O$				
		x	y	z
340 nm	298 K	0.1639	0.1645	0.6715
	77 K	0.2302	0.2758	0.4941
390 nm	298 K	0.2327	0.3239	0.4435
	77 K	0.3572	0.4736	0.1691
$Ba_{0.06}Mg_{0.94}O$				
		x	y	z
340 nm	298 K	0.1650	0.1720	0.6630
	77 K	0.2221	0.2613	0.5166
390 nm	298 K	0.2400	0.3367	0.4234
	77 K	0.3645	0.4697	0.1658