Electronic Supplementary Material (ESI) for RSC Advances.

Electronic supplementary information (ESI)

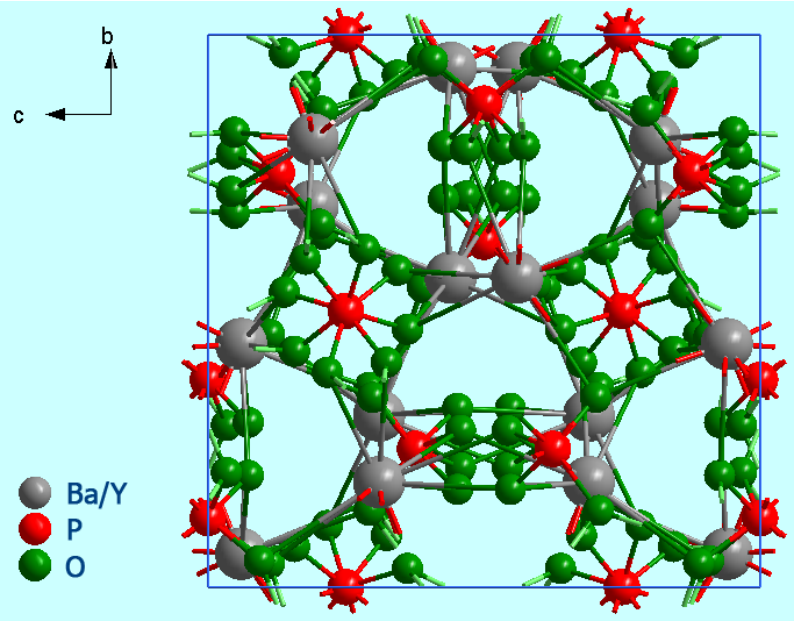

Figure S1. The crystal structure of $Ba_3Y(PO_4)_3$ viewing along [100] direction.

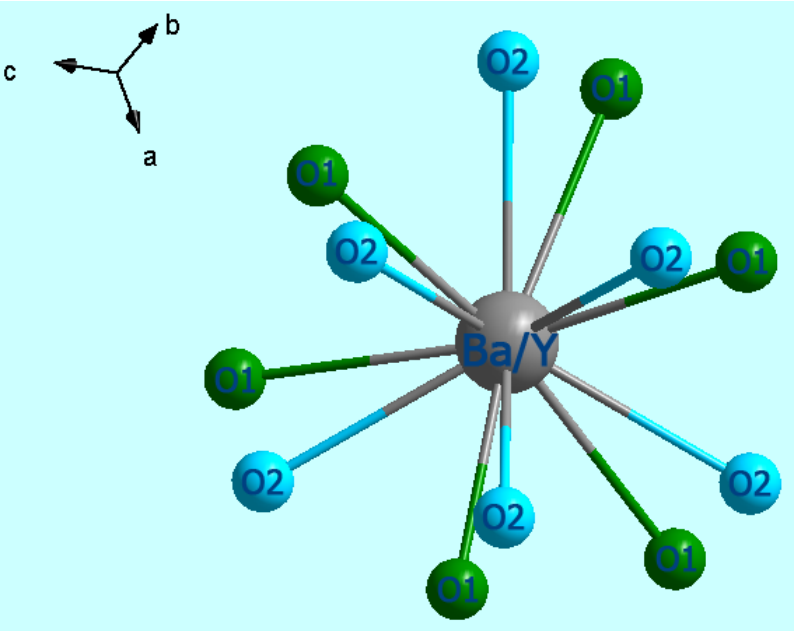

Figure S2. The coordination environment of Ba/Y viewed along [111] direction.

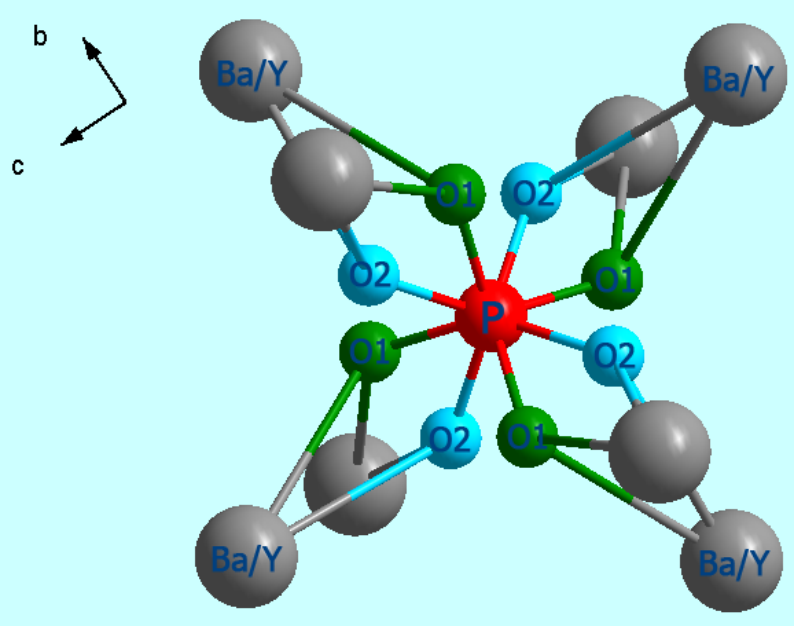

Figure S3. The coordination environment of P viewed along [100] direction.

Description of the Crystal Structure: In $Ba_3Y(PO_4)_3$ crystal, Ba^{2+} and Y^{3+} are disordered in a single crystallographic site, whereas the oxygen atoms are disordered over two orientations (O1 and O2 with 35% and 65% occupancy factors, respectively), giving rise to rotational disorder of the phosphate anion.

Table S1. Comparison of integral area of the four Gaussian components for $Ba_3Ln(PO_4)_3:Eu^{2+}$

$Ba_3Ln(PO_4)_3:Eu^{2+}$	**Integral area of the four Gaussian components**								
Ln	**A**		**B**		**C**		**D**		**SUM**
Lu	**0.052**	↑	**0.775**	↑	**0.038**	|	**0.135**	↓	**1**
Y	**0.050**		**0.767**		**0.036**		**0.147**		**1**
Gd	**0.041**		**0.695**		**0.037**		**0.227**		**1**