

Supplementary Materials

# Novel CaO–SiO<sub>2</sub>–P<sub>2</sub>O<sub>5</sub> Nanobioglass Activated with Hafnium Phthalocyanine

Yuriy Gerasymchuk, Anna Wedzynska and Anna Lukowiak \*

Institute of Low Temperature and Structure Research, PAS, ul Okolna 2, 50-422 Wroclaw, Poland; y.gerasymchuk@intibs.pl (Y.G.); a.wedzynska@intibs.pl (A.W.)

\* Correspondence: a.lukowiak@intibs.pl

The obtained calcium oxide, which was used as a source of calcium needed in the glass synthesis, was characterized using the X-ray diffraction analysis. The XRD pattern of the powder is shown in Figure S1. The Scherrer equation

$$D = K\lambda/(\beta\cos\theta)$$

(where D is the mean size of the grain size, K is a dimensionless shape factor (0.9),  $\lambda$  is the X-ray wavelength (Cu K $\alpha$ , 1.5406 Å),  $\beta$  is the line broadening at half the maximum intensity (FWHM).  $\theta$  is the Bragg angle), was used to calculate the size of the crystallites showing that the particles had diameter of 40 nm.

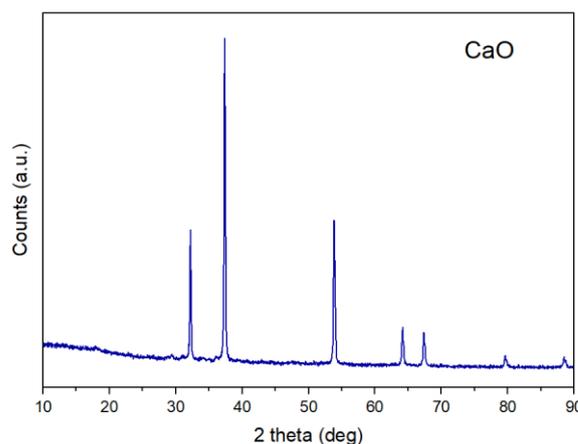


Figure S1. X-ray diffraction pattern of the obtained CaO powder.

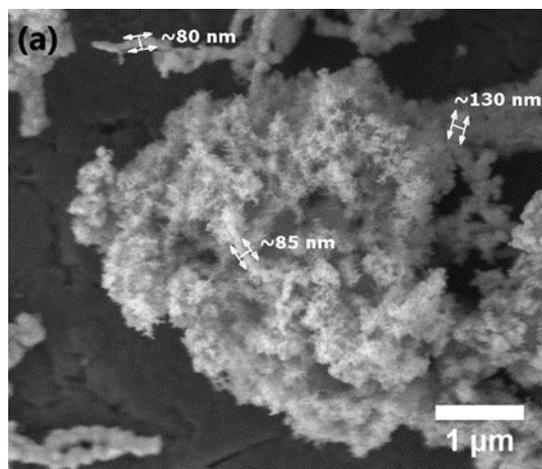
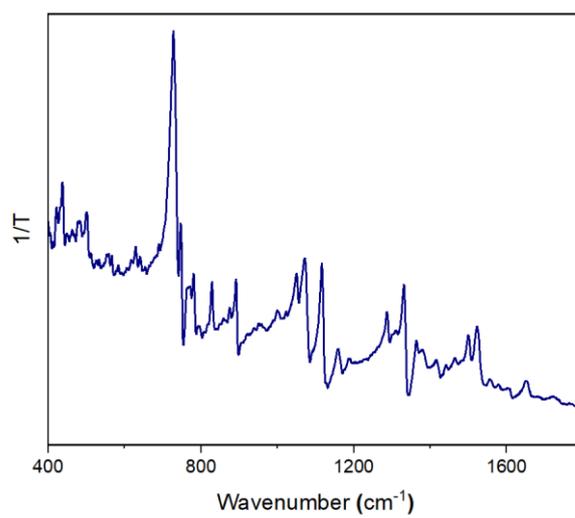


Figure S2. SEM image showing diameters of selected nanoparticles.



**Figure S3.** IR spectrum of dichlorohafnium(IV) phthalocyanine.