

## Effect of Sr and Ti substitutions on optical and photocatalytic properties of $\text{Bi}_{1-x}\text{Sr}_x\text{Fe}_{1-x}\text{Ti}_x\text{O}_3$ nanomaterials

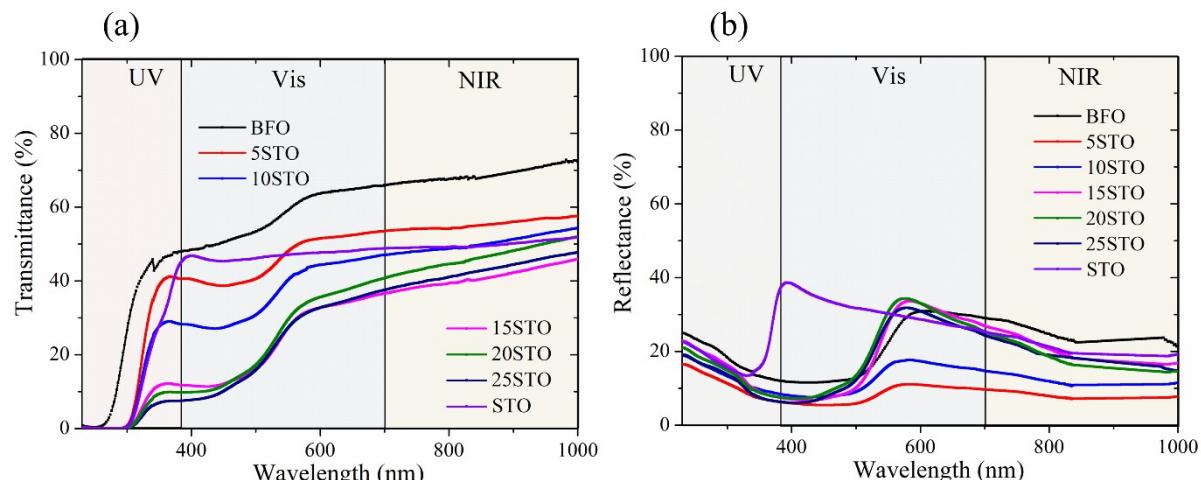
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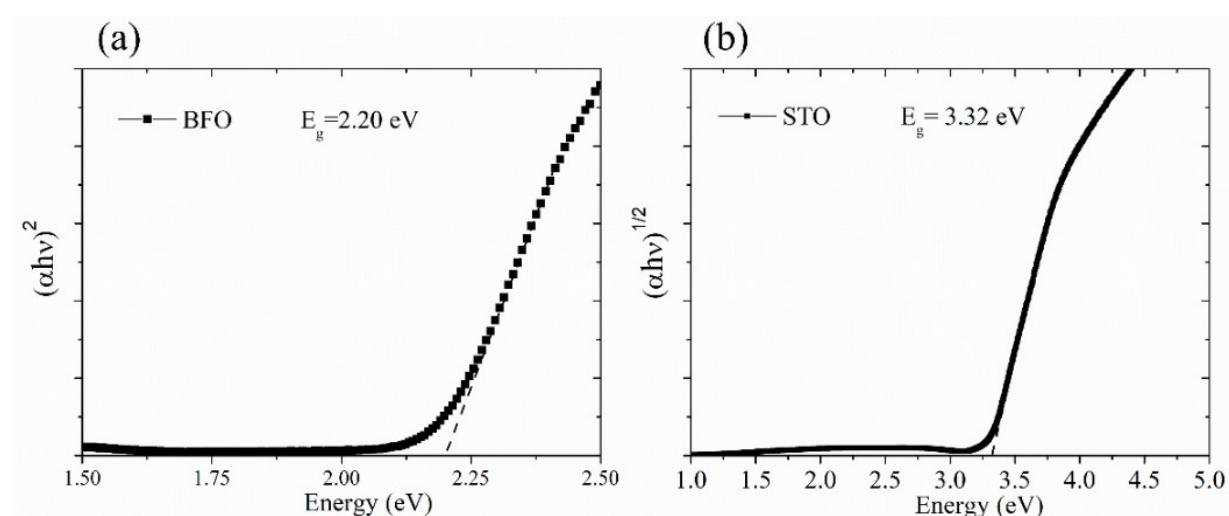
<sup>b</sup> Université d'Artois, CNRS, Centrale Lille, ENSCL, Université de Lille, UMR 8181, Unité de Catalyse et Chimie du Solide (UCCS), 62300 Lens, France.

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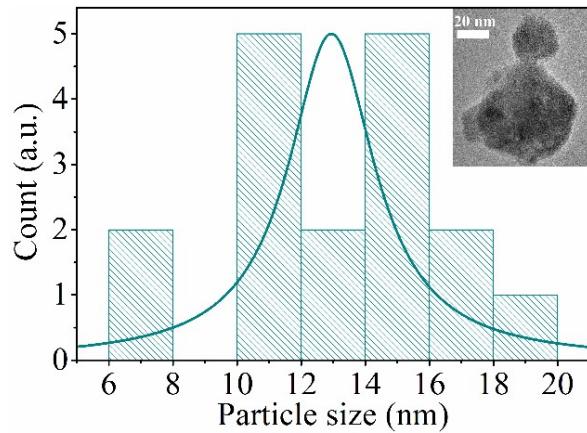
\* Correspondence Email: mustapha.jouiad@u-picardie.fr



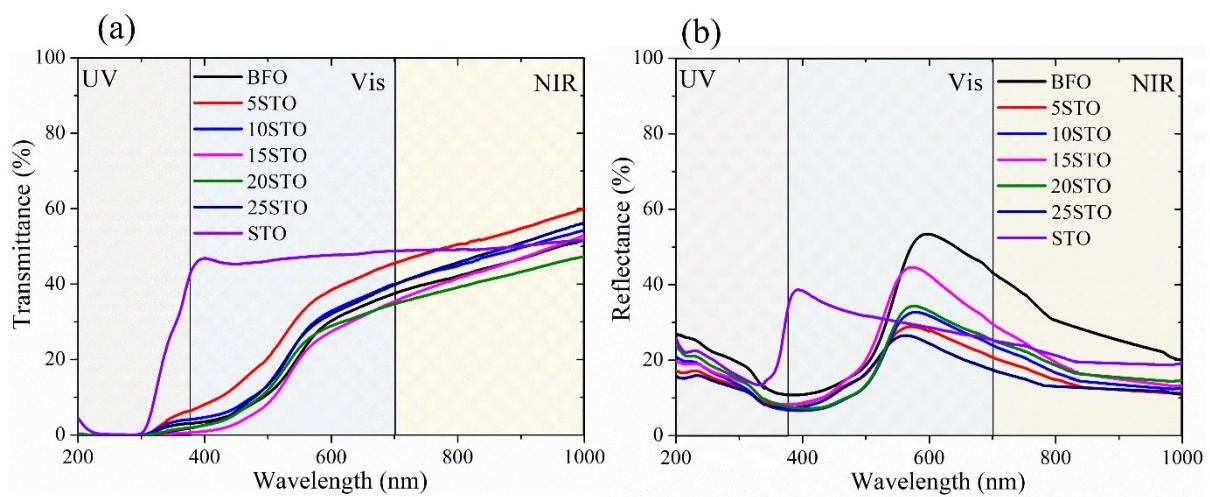
**Figure S1:** Optical properties of BFO-xSTO films using as-synthesized powders: a) transmittance, and b) reflectance of BFO-xSTO films.



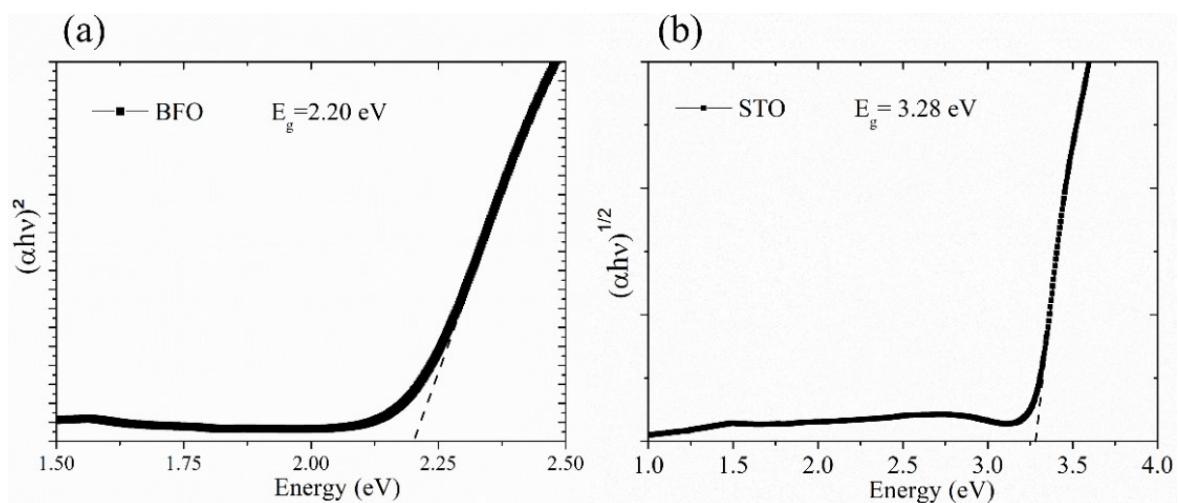
**Figure S2:** Tauc plots of pristine (a) BFO, and (b) STO films using as-synthesized powders.



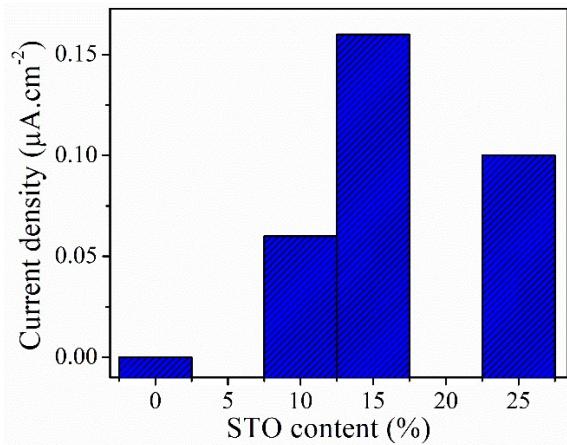
**Figure S3:** The size distribution of the 5%STO nanoparticles. The inset shows its corresponding bright field TEM image.



**Figure S4:** Optical properties of BFO-xSTO films with second milled powders of tens of nanometers: a) transmittance, and b) reflectance.



**Figure S5:** Tauc plots of pristine (a) BFO, and (b) STO films with secondly milled powders.



**Figure S6:** Evolution of  $\Delta j$  with STO content for an excitation of 450 nm at  $118 \text{ mW.cm}^{-2}$  with no applied bias potential.