

# Bismuth three oxyde Nanopowder to inhibit and photostabilize 2-Aminophenol

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Bismuth three oxide (Bi<sub>2</sub>O<sub>3</sub>) nanoparticles (NPs) were synthesized by chemical method, this method it's about choosing the right parameters, to control, the sizes, shapes and the composition of particles. The obtained Bi-NPs were thermally treated to obtain Bi<sub>2</sub>O<sub>3</sub>, which were characterized by several techniques like SEM, UV-Vis and XRD. The SEM observation shows the formation of particles with nanometrical sizes. UV-Vis spectrum reveals one strong bands for Bi<sup>3+</sup> oxide and we got also one peak for Bi<sup>0+</sup> oxide after the reducing process. The XRD confirmed the formation of 'Bi<sub>2</sub>O<sub>3</sub>' NPs with a specific cristalline phase. Finally, as an application, we monitored the effect of Bi<sub>2</sub>O<sub>3</sub> NPs on the photo-stabilization of 2-Aminophenol (2AP) from oxydation under UV light, this kind of application has not been reported before to the best of our knowledge.