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Easy Method of Synthesis and Functionalzation of Zno Nanoparticules With 3 Aminopropylthrimethoxysilane (APTES)

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Abstract : The use of semiconductor oxides, as chemical or biological, requires their functionalization with appropriate dependent molecules of the substance to be detected. generally, the support materials used are TiO2 and SiO2. In the present work, we used zinc oxide (ZnO) known for its interesting physical properties. The synthesis of nano scale ZnO was performed by co-precipitation at low temperature (60 ° C).To our knowledge, the obtaining of this material at this temperature was carried out for the first time. This shows the low cost of this operation. On the other hand, the surface functionalization of ZnO was performed with (3-aminopropyl) triethoxysilane (APTES) by using a specific method using ethanol for the first time. In addition, the duration of this stage is very low compared to literature. The samples obtained were analyzed by XRD, TEM, DLS, FTIR, and TGA shows that XPS that the operation of grafting of APTES on our support was carried out with success.

Keywords : functionalization, nanoparticle, ZnO, APTES, caractérisation
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