Synthesis and Characterization of metal oxide core-shell nanocomposites.

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Core-shell nanocomposite structures are nanomaterials constructed with inner material (core) and outer layer material (shell), **figure 1**. Metal oxides core-shell nanocomposites, SnO_2@TiO_2, SnO_2@Al_2O_3 and SnO_2@ZnO were prepared and studied because they have presented themselves as the most important materials. They have outstanding properties which include strong UV light absorption, wide band gap, low cost, high stability, strong physical and chemical interaction with adsorbed species and low operating temperature. The purpose of coating on the core particle is to enhance the photoluminescence, stability and functionality of the nanomaterials. These nanomaterials have a potential application in energy efficiency, sensors and phototherapy.

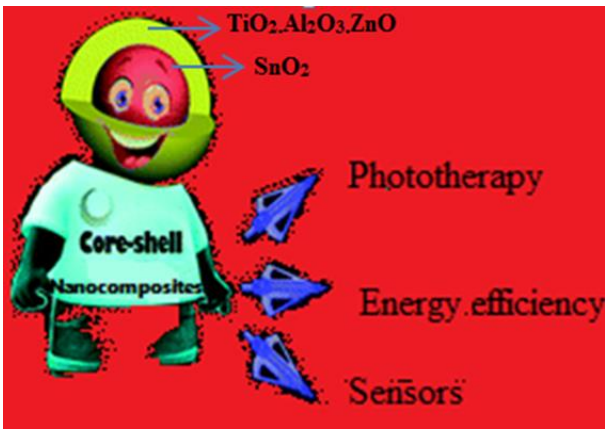

Figure 1: Schematic illustration of Core-Shell Nanocomposite.