ABSTRACT

A BIOMIMETIC APPROACH TO LOW-COST FABRICATION OF COMPLEX NANOSTRUCTURES OF METAL OXIDES BY NATURAL OXIDATION AT LOW-TEMPERATURE

A metal oxide nanostructure is formed by oxidizing metallic metal in the presence of a solution containing a liquid ligand to form a metal-ligand complex, and decomposing the metal-ligand complex to form the metal oxide nanostructure. The metal-ligand complex can be a complex of zinc or copper with formamide. In one form, the nanostructure forms ZnO nanorods having a diameter of 10 to 1000 nm, where the nanorods having a hexagonal crystallographic morphology, and the nanorods are oriented perpendicular to a substrate.

Figure 6