

COATED METAL OXIDE NANOPARTICLES AND METHODS FOR PRODUCING SAME

ABSTRACT

Disclosed are coated metal oxide nanoparticles comprising a metal oxide nanoparticle having a surface; and ligands attached to the metal oxide nanoparticle surface. Also disclosed are phosphonic acid compounds comprising the structure $Gn-R-Xn$, wherein G is a terminal group; wherein R is a bridging group; wherein X is a phosphonic acid group; and wherein each n is, independently, 1, 2, or 3. Also disclosed are methods for preparing and using coated metal oxide nanoparticles. Also disclosed are nanocomposite compositions comprising a polymer; and a coated metal oxide nanoparticle dispersed within the polymer. Also disclosed are articles, films, and capacitors comprising a coated metal oxide nanoparticle or a nanocomposite composition. This abstract is intended as a scanning tool for purposes of searching in the particular art and is not intended to be limiting of the present invention.

FIGURE 1