Abstract

As an aspect of environmental management, this thesis is a basic science research on common bacteria in hospital settings. By Sputtering technique we have produced silver nanoparticles embedded in thin films of titanium dioxide. Strains of Escherichia coli (E coli) and Staphylococcus aureus (S aureus) are sown on these composite films and then by means of a biological protocol we demonstrate their high antibacterial power. Furthermore, by UV-visible spectrophotometry and x-ray diffraction (XRD), the spectra were obtained which allow us to characterize TiO2 films: thickness, refractive index; and also the presence of silver nanoparticles