

RETICULATED VITREOUS CARBON DOPED WITH NANO SILVER METALLIC PARTICLES FOR ANTIMICROBIAL INHIBITORY APPLICATION

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The development of composites for biocide application has attracted considerable attention in several research fields. Silver nanoparticles is a very know antimicrobial material. Manufacturing composite materials with high surface area and biocide characteristics is challenge. In this work was studied the morphological and structural characterization of silver nanoparticles dispersed in a structure of carbon Reticulated Vitreous (CVR), treated at different temperatures, resulting in a nanocomposite. The silver impregnation technique in carbon materials is not a simple work due to its chemical stability. The objective in this study was to evaluate the deposition of silver nanoparticles on the CVR as a composite material for microorganisms inhibition or eliminate. The characterization of the material will be carried out using the Raman spectroscopy, spectroscopy Photoelectron Excited by X-rays, diffraction X-ray-EDS. Through the results it was concluded that the CRV treated at 1300 ° C showed the highest concentration of silver on its structure. These results potentiate the deposition of silver nanoparticles on CRV structures and disorganized with large concentration of active sites to anchor silver particles. In addition, the average size of the deposited particles decreases due to heat treatment.