

Abstract: The present invention describes methods for obtaining functionalized polymeric surfaces (MPn-PSm) from polymers or copolymers with appropriate functionalizations (X), which can be a halogen or a leaving group, such as polyvinyl chloride (MP1) and (chloromethyl)polystyrene-Merrifield (MP2), and curcumin photosensitizers (PS1), *meso-tetra*(aryl)porphyrins, chlorins or bacteriochlorins halogenated and functionalized with nucleophilic groups (PS2), in particular including P2 of the type meso-imidazolyl-porphyrins, chlorins or bacteriochlorins (PS3). The structures of all the photosensitizers in the present application incorporate a functional group (Y), which is a OH, SH or NH₂ nucleophile. The application also describes the covalent bonding process of the photosensitizers PS1-PS3 to the functional polymeric materials MP1-MP2 by means of a nucleophilic substitution reaction to prepare the MPn-Psm products. The formed products prevent microbial proliferation, which can cause the serious infections that are one of the main causes of death in patients using these devices.

[Figure 1]