



## Synthesis of ZnO for biocide activity on SEBS/PP applications

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### Abstract

Antimicrobial activity represents a challenge for scientific community. Polymer processing conditions impose temperature limitation for stability of biocide nanoparticles. In the present work, we evaluate ZnO synthesized in laboratory, utilizing  $Zn(NO_3)_2 \cdot 6H_2O$  as precursor. The main proposal is to improve the incorporation of this nanoparticle on SEBS/PP resulting on biocide material films. Before application on SEBS/PP, the nanoparticles was tested by reduction of forming colony units (CFU)(%), Dynamical Light Scattering (DLS) and Zeta potential. On CFU tests, all samples showed biocide properties. The samples with concentration of 1% showed the higher biocide effect on *E.coli* bacteria, in comparison of lower concentrations. The obtained material biocide was processed on SEBS/PP for obtaining of polymeric films with biocide activity and the new material was characterized by: forming colony units (CFU)(%), Differential Scanning Calorimetry (DSC), and Fourier Transformed Infrared (FT-IR).

Keywords: *ZnO*, *SEBS*, *PP*

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