

Silver–Curcumin Polymer System

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Biocompatible Polymer System Development with Enhanced Antimicrobial Properties Using the Additive Effect of Triangular Silver Nanoplates and Curcumin

In this project, Dr. Eduardo Lanzagorta Garcia investigated integration of triangular silver nanoplates (TSNP) as Ag⁺ nanoreservoirs within polymeric materials and biomaterials intended for a wide spectrum of applications was developed, demonstrating effective antimicrobial action and a cost-competitive fabrication process. Moreover, curcumin was introduced into the best-performing polymers as a supplementary antimicrobial compound. The combination of these antimicrobials was shown to potentially lead to increased antimicrobial effectiveness compared to currently commercially available antimicrobial systems. A detailed analysis of polymers incorporating anti-microbial agents was performed in order to assess the induced antimicrobial effect and their biocompatibility using various in vitro and in vivo systems.