

Effect of Nano-Copper Oxide Synthesized by Solution-Based Chemical Precipitation Method on Antibacterial Polyester Nanocopper Oxide Composite

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Abstract : Antibacterial materials have become future textile materials due to the escalation of people's awareness regarding the importance of maintaining health. Textile materials with antibacterial properties are examples in application which has positive results in various aspects. In this research polyester nano-copper oxide composite with nanoparticle is synthesized by solution-based chemical precipitation method from $\text{Cu}(\text{NO}_3)_2$ solution. Parameters such as precursor concentration is varied to determine which composition would result in effective properties of antibacterial composite. The antibacterial property is observed using disk diffusion method and SEM observation is conducted on each specimen. The composites produced are able to inhibit the growth of both positive gram bacteria (i.e. *S. aureus*) and negative gram bacteria (i.e. *E. coli*), thus, highly capable of helping to prevent the spread of disease.

Keywords : copper oxide nanoparticle, antibacterial, solution-based chemical precipitation, polyester composite

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