



ACRYLIC ACID/CITRIC ACID BASED POLYMERIC HYDROGEL: SYNTHESIS, CHARACTERISATION AND APPLICATIONS

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ABSTRACT

Citric acid based polyester hydrogel network cross-linked with acrylic acid was synthesized by the melt polycondensation method without adding a catalyst. The structure of the polymeric hydrogel was characterized by Fourier transform infrared spectroscopy (FT-IR) and ¹H NMR spectral studies. The surface morphology of the synthesized hydrogel was studied. The influence of the swelling behavior of polymer hydrogel in water was studied and the antibacterial activity of the synthesised hydrogel was evaluated against *Staphylococcus aureus* and *Escherichia coli* microorganisms. Degradation studies were evaluated by soil burial test.

KEYWORDS: Citric acid, Acrylic acid, Hydrogel, Antimicrobial activity and Soil Burial.