

Surface Graft Copolymerization of ϵ -Caprolactam onto Kevlar Fiber Surface

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The surface of Kevlar fiber was grafted by the metalation of Kevlar surface PPTA poly(p-phenylene terephthalamide) followed by anionic polymerization of metalated PPTA with ϵ -caprolactam.

The effect of reaction conditions such as metalation time, reaction time, reaction temperature and NaH concentration on grafting were investigated. The thermal and mechanical behaviors of the grafted Kevlar fibers were examined using a thermomechanical analyzer(TMA) and an Instron UTM. The grafting of Kevlar and ϵ -caprolactam was identified by FTIR.

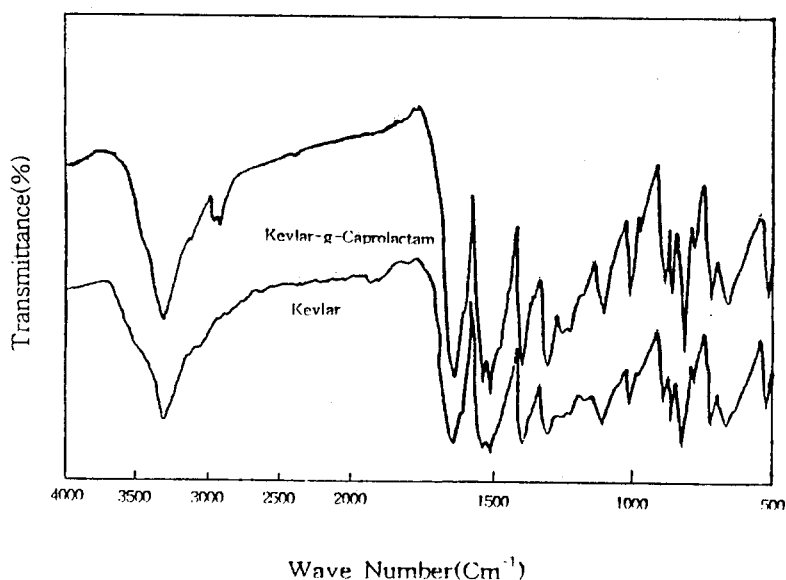


Fig. FTIR spectra of the original Kevlar and Kevlar-g-Caprolactam