

# **SYNTHESIS AND STRUCTURAL CHARACTERIZATION OF POLYANILINE- EMERALDINE SALT GRAFTED NYLON 6 FILMS**

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## **ABSTRACT**

The grafting of polyamide nylon 6 (N6) with polyaniline-emeraldine salt (PANI-ES) was accomplished by in situ polymerization of the monomer on the nylon 6 film using chemical method of polymerization. The primary goal of the work is to graft a conducting polymer onto a non conducting one and likewise study the structural changes. The grafting of PANI-ES onto nylon 6 film was verified by X-ray diffraction (XRD) analysis. The graft parameters such as % grafting, % efficiency and total conversion were also calculated. The results thus obtained show that grafting has altered the crystallinity of the host polymer. From the analytical study and its discussions it can be concluded that polyaniline-emeraldine salt grafted nylon 6 films show an overall structural modification, asserting formation of a different crystal structure irrespective of the parent polymers.

**KEYWORDS:** Polymer Grafting, X-Ray Diffraction Analysis, Grafting Parameters, Crystal Structure