Structural characterization of polyaniline thin films doped by Ag+ ion implantation

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Polymeric thin films in electronic device applications are becoming more commonplace due to relatively low production and material cost when compared to conventional semiconductors.
Polyaniline is one of the most widely studied conducting polymers and organic semiconductor due to its rich chemistry and relative stability.
Current research efforts into polymer based photo-voltaic and radiation sensorsaregeared towards tailoring material properties of the polymers to improve their quantum efficiency to at least match that of silicon based detectors.
This contribution presents results of a study carried out to establish the relationship between film structure of conjugate polyaniline films spin-coated onto silicon substrates and Ag+ ion implantation dose.
The polyaniline (PANI) films were prepared by dissolving of Emeraldine Base (EB-PANI) in 1-Methyl-2-Pyrrolidinone and spin coating onto silicon substrates. Film characterization was carried out using SEM, RBS, XRD and Raman Spectroscopy before and after Ag+ ion implantation to different doses.

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