Preparation of Polymeric Materials by the Use of γ-rays for Some Environmental Applications

THESIS
Submitted in Partial Fulfillment of the
Requirements for the Degree of
Doctor of Philosophy of Science in Chemistry

By

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APPROVAL SHEET

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AIM OF WORK

The main part of this study is restored and maintains the chemical, physical and biological of water from industrial wastewater treatment by the adsorption for removal of toxic heavy metals that effect on the human in the world by through three steps:

(1)- Grafting of backbone LDPE film by GMA as a monomer and irradiated by γ-ray.

(2)- Opining the epoxy groups in grafted-films with different functional groups using chemical modification of ion exchange.

(3)- The reaction between epoxy groups and different functional groups of grafted films was converted from hydrophobic into hydrophilic films by ion exchange to improve the adsorption process.

The characterization of grafted-treated films have been investigated. Many modification treatments have been investigated on these graft-treated films to possess excellent properties in field of ion-exchange and can be used in industrial wastewater treatments and adsorption processes with high efficiency and good tool economically.

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