(C)AIM OF THE PRESENT WORK

Over the past decades drug delivery represents a vital area of research and development. Polymer chemists have been actively involved in designing polymer materials for biomedical applications. Polymeric prodrug is a conjugation of a drug with a polymer. If the drug molecule contains hydroxyl or amino groups, the polymeric drugs are best prepared by reacting the drug with pre-synthesized polymer with functional side groups able to react selectively with above groups, giving ester or amido bonds.

Copolymerization is the best way to produce a polymer with properties that are intermediate between the properties of the respective homo-polymers. It is an important process from a commercial point of view because it can produce new polymers with completely different properties.

The specific objectives include:

- Determined general condition for the synthesis and polymerization of 2-(N-Phthalimido)ethyl methacrylate (PEMA).

AIM OF THE WORK

- The exchange reaction of the polymer with some aminated and hydroxylated compounds as a model compounds.
- Estimate copolymer composition from Nitrogen analysis to determine the monomer reactivity ratios for copolymerization of phthalimide monomers with methylacrylate, ethylacrylate, butylacrylate, styrene and vinyl acetate.
- Determined antimicrobial activity of some newly synthesized compounds using the diffusion agar techniques were tested against bacterial species as well as against fungal species. Thus, it may be concluded that the new newly synthesized compounds may be useful for preparation of polymer-adducts of biomedical and pharmaceutical interest.