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**Ph Responsive Permeability and Ion- Exchange Characteristics of
(PE/EPDM)-g-PMAA Membranes**

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Chemical grafting of methacrylic acid (MAA) on low density exchange membranes for recovery of different cations from their solutions was investigated. When the dialysis permeability of two solutes (glucose + urea) through the membrane were tested at different pH values and compared, glucose was found to be less efficient than urea for permeation through the membrane. The permeability response of such solute was noticed only at higher pH value (pH 8). The grafted film (membrane) with graft yield of ~ 185% is experimentally adequate to permeate all molecules with radius of lower than 4.3×10^{-7} polyethylene blended with EPDM with a ratio (90/10) films was carried out using sodium bisulphite as initiator. Factors affecting grafting and the properties of the grafted films were studied in details and showed improved hydrophilic properties, good thermal stability and nearly unaffected strength properties which make them acceptable for practical uses. In the present work, the possibility of practical uses of such grafted films as pH-responsive membranes in a dialysis process and as ion-exchange membranes was studied. Grafted membranes in different forms (COOH-form), (Na-methacrylate form) and (K-methacrylate-form) were prepared to evaluate the membrane's uptake selectivity to different mono, di- and trivalent cations from their solutions. The results obtained showed very good efficiency of the prepared membranes as compared with the values obtained for the commercial cation exchange resin (Dowex).