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# Development of low cost adsorbent from recycled polyethylene terephthalate for treatment of acephate contaminated water

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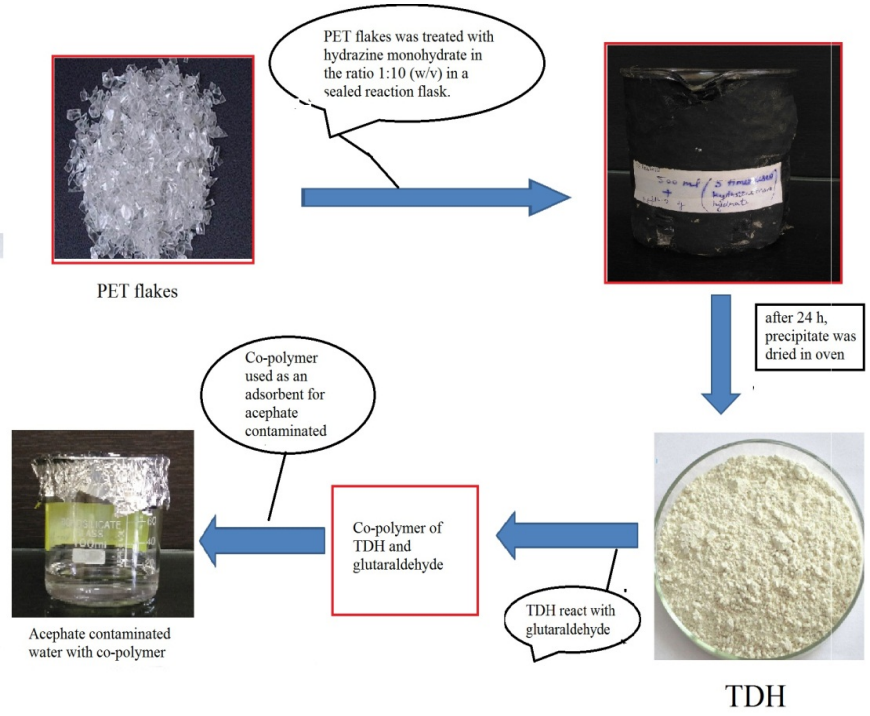


Keeping in view, the need for low cost and effective method for treatment of water, herein an attempt is made to depolymerize polyethylene terephthalate (PET) to aromatic amide terephthalic dihydrazide (TDH). TDH is further used as a precursor for synthesis of co-polymer along with glutaraldehyde. The synthesized co-polymer was well characterized using FTIR and Raman spectroscopy, elemental and thermal analysis. The co-polymer was thermally stable and showed good storage stability as well. The co-polymer has been further used as low-cost and non-conventional adsorbent for organophosphate pesticide (acephate) removal from waste water. Various parameters are used for adsorption studies like adsorbent dose, contact time and pesticide concentration. Hence, the synthetic co-polymer can be used as a good alternative for treatment of contaminated water.

Keywords: Polyimine, PET, TDH, adsorption, organophosphorous, pesticide, water treatment.