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GRAFT COPOLYMERIZATION OF 2-HYDROXYPROPYL METHACRYLATE ONTO POLY (ETHYLENE TEREPHTHALATE) FIBERS USING 4,4- AZOBIS (4-CYANOVALERIC ACID)

Fariborz Azizinezhad^{1*}, Majid Abdouss²

1.Department of Chemistry, Islamic Azad University, Varamin Branch, Varamin, Iran and 2.Department of Chemistry, Amir Kabir University, Tehran, Iran

Corresponding author. Tel: +982912275805, E-mail address: fazizinejad@yahoo.com

In this study, dye ability of the PET fibers after grafting with 2-HPMA is reported using Disperse Red S-BFW as disperse dye. Results of the dye ability showed that, by increasing of the percentage of grafted fibers, their dye ability increases to 21.21%-grafted product and then decreases. The effect of 0.5% emulsifier (anionic, cationic and nonionic) on fibers dye ability was investigated. While at the presence of CTAB no dye ability could be observed, in dyeing of uncopolymerized fibers, the effect of OC-30 was more than SLS and CTAB. But in graft product with the increase of the graft product, SLS, CTAB and OC-30 showed more dye ability effect on the fibers, respectively. On the other hand, with the use mixture initiators including Bz₂O₂, ACV an intensifying effect on the graft product was observed and the copolymerization time at the presence of ((Bz₂O₂)₂ACV=1:3) decreased. This is very important in textile industry. The characterization of graft fibers with thermogravimetric analysis (TGA), scanning electron microscopy (SEM) and Fourier transform infrared (FTIR) methods have been investigated