

عنوان مقاله:

Synthesis, characterization and investigation of polybenzimidazoles containing ether linkages

محل انتشار:

بیست و هفتمین کنفرانس شیمی آلی ایران (سال: 1398)

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خلاصه مقاله:

Benzimidazole polymers are important series of aromatic polymers because of their heat resistance, stability, and durability against oxidative reagents as well as proton conducting capability. [1] This ability of benzimidazole polymers have significantly attracted researcher's attention in the last decades. Based on structure-properties approach, co-polybenzimidazole synthesis by introducing the other functional groups presents many benefits. [2, 3] In this work, two diacid monomers were synthesized based on isophthalic and pyridine dicarboxylic acid. A nucleophilic nitro displacement reaction with 4-hydroxybenzoic acid was utilized in the preparation of arylene bis-benzimidazole dicarboxylic acid monomers. All of the synthesized compounds were identified with the IR, MS and NMR measurements. To synthesize the co-polymers, the monomers were reacted with different aromatic diamines (that contain flexible unites) along with equimolar amounts of adipic acid as comonomer. The gained polymers in the optimized conditions of temperature, time and concentration had a viscosity 0.34 to 0.51 dL/g. Thermal behavior and stability of the polymers were evaluated by TGA, DSC and DMTA techniques.

کلمات کلیدی:

Arylene bis-benzimidazole, Co-poly benzimidazole, Nitro displacement

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