

عنوان مقاله:

Study on biodegradability of poly(amide-imide) bearing imidazole groups

محل انتشار:

ششمین کنگره بین المللی رنگ و پوشش (سال: 1394)

تعداد صفحات اصل مقاله: 2

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خلاصه مقاله:

Polyamide-imide (PAI) is a high performance condensation polymer, which has high heat and radiation resistance. Solvent suspension of PAI are widely used in magnetic wire coatings. In present study a PAI based on amino acid, was synthesized via direct polycondensation of a synthesized diacid-diimide and 4,4-(1,4-Phenylenediisopropylidene) bisaniline (PDBA). Diacid-diimide was synthesized by the condensation of an amino acid compound, (S)-(+)-Histidine hydrochloride monohydrate and 3,3',4,4'-Benzophenone tetracarboxylic dianhydride (BTDA). The mentioned monomer was characterized by FT-IR, ¹H-NMR and ¹³C-NMR spectroscopies. Thermal stability of PAI was studied using thermogravimetric analysis (TGA). Morphology of the PAI was studied before and after the biodegradation by scanning electron microscopy (SEM) technique. The in vitro fungal colonization of diacid monomer and PAI were tested using *Aspergillus niger* fungi. After biodegradation, the monomer showed a weight loss of 8.2 wt % and synthesized PAI also showed lower weight losses rather than the monomer.

کلمات کلیدی:

Biodegradable- Poly (amide-imide)- Fungal colonization- Coating- Histidine

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