

عنوان مقاله:

Evaluation of hydrophilic properties of acrylonitrile/acrylic acid copolymer films dendrigrated with citric acid

محل انتشار:

دوفصلنامه پلی اولفین ها، دوره 4، شماره 2 (سال: 1396)

تعداد صفحات اصل مقاله: 8

نویسندگان:

Somaye Akbari - *Department of Textile Engineering, Amirkabir University of Technology, Tehran, Iran*

Niloofer Eslahi - *Department of Textile Engineering, Amirkabir University of Technology, Tehran, Iran* | *Department of Textile Engineering, Science and Research Branch, Islamic Azad University, Tehran, Iran*

Mohammad Haghghat Kish - *Department of Textile Engineering, Amirkabir University of Technology, Tehran, Iran*

خلاصه مقاله:

The present study investigates the hydrophilic properties of acrylonitrile/acrylic acid P(AN/AA) copolymer films with various acrylic acid (AA) contents dendrigrated with citric acid from zero to fourth generation numbers. It was found that the hydrophilicity of the dendrigrated films was a complicated phenomenon. Various parameters such as intermolecular hydrogen bonding, roughness and active functional groups affected the wettability of the film samples measured via static contact angle. The results revealed that the hydrophilicity decreased with increasing the generation number owing to the steric hindrance of terminal groups. However, active functional group increased by rising generation numbers which was confirmed using zeta potential measurement. Furthermore, the percentage conversion of the reactions showed a reduction with increasing generation number and AA content which was in agreement with the reduction in wettability corresponding to the higher contact angle. On the other hand, zeta potential as well as roughness of the films increased with successive generations.

کلمات کلیدی:

Acrylonitrile/acrylic acid copolymer, dendrigrat, wettability, contact angle, roughness

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