

Modification of Polyacrylonitrile with Quarternary ammonium salts

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To improve the properties of polyacrylonitrile(PAN), two kinds of quarternary ammonium salts such as benzalkonium chloride(BAC) and N,N-dimethyl propylsilyl ammonium chloride(SAC) were mixed with PAN in DMF. These reagents were usually used as antimicrobial agents.

The static electricity, moisture regain, contact angle, thermal property, dynamic mechanical property and antimicrobial activity were investigated.

The results obtained were as follows:

1. The static charge of PAN film containing 2 wt% of BAC decreased to about 1/3 of that of PAN film, and the moisture regain increased with increasing quarternary ammonium salts contents.
2. The contact angle of modified PAN decreased with increasing BAC contents, but the contact angle increased with increase of SAC contents.
3. The reduction rates of colonies increased with increasing ammonium salts contents.