# Synthesis of Aromatic Polyimides from Diaminotriphenylamine Containing Long Alkoxy Chains

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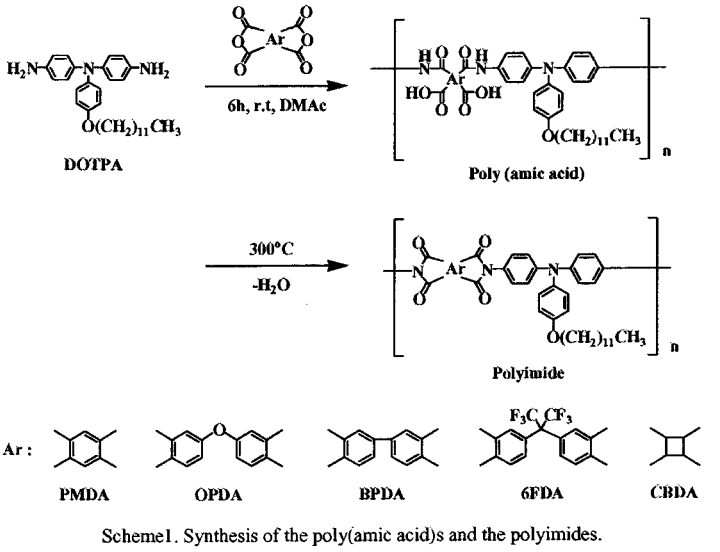
Polyimides (PIs) have been commonly used as nematic liquid crystal alignment films in liquid crystal displays (LCDs) in which uniform alignment of liquid-crystal molecules on substrate surface is indispensable. The pretilt angle of the liquid crystal is one of the key parameters in LCDs, which is closely related to the display performance. Recently, advanced high-definition LCDs require high pretilt angles. The introduction of long alkyl groups into the PIs has been found to be effective in increasing the pretilt angles.[1,2]

In this study, PIs containing long alkoxy group were prepared by polymerization of diaminotriphenylamine containing long alkoxy group and pyromellitic dianhydride. Poly (amic acid)s as precursors of PIs had inherent viscosities of 0.38-0.58 dL/g. The grass transition temperatures and 10% weight loss temperatures of the PIs were 156-272°C and 421-437°C, respectively. PI films had tensile strength of 56-63 MPa, elongation at break of 6-8%, and tensile modules of 1.8-2.0 GPa.




Scheme1. Synthesis of the poly(amic acid)s and the polyimides.

## References

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