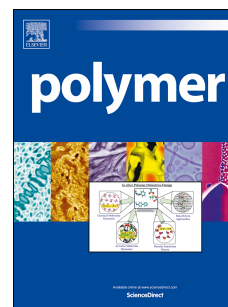


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**AROMATIC POLYESTERS DERIVED FROM  
5,5'-DISUBSTITUTED BIS(*m*-PHENYLENE) CROWN) ETHERS**

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**ABSTRACT**

A new monomer of the AB type, 5-carboxy-1,3-phenylene-5'-hydroxy-1',3'-phenylene-32-crown-10 (**5**), was synthesized. Direct polymerizations of bis(5-hydroxy-1,3-phenylene)-32-crown-10 (**13**), an AA diphenolic macrocyclic monomer, with BB diacid monomer bis(5-carboxy-1,3-phenylene)-26-crown-8 (**14**) and its larger analog bis(5-carboxy-1,3-phenylene)-32-crown-10 (**16**) were accomplished via the Higashi method. The resultant polyesters **15** and **17**, which both contain two macrocycles per repeat unit, were soluble in common organic solvents such as chloroform and tetrahydrofuran, amorphous in nature and possessed high thermal stability (5 % weight loss > 370 °C in air). Main chain poly(ester crown ether)s **18** and **19** based on bis(5-carboxy-1,3-phenylene)-32-crown-10 (**16**), and hydroquinone (HQ) and biphenol (BP), respectively, were synthesized; these two polyesters also possess high thermal stability (5 % weight loss > 386 °C in air) and are amorphous. These polymacrocycles are suitable polytopic hosts for complexation with 4,4'-bipyridinium derivatives, as demonstrated by the binding of paraquat diol (**21a**) by polyester **20** with  $K_a = 2.0 (\pm 0.7) \times 10^2 \text{ M}^{-1}$  (23 °C, 4:6 w:w CD<sub>3</sub>CN:CDCl<sub>3</sub>). Threading of the cyclic units in these polyesters by linear polymers such as polystyrene and PMMA leads to compatibilized blends; this methodology represents a new approach to compatibilization.

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