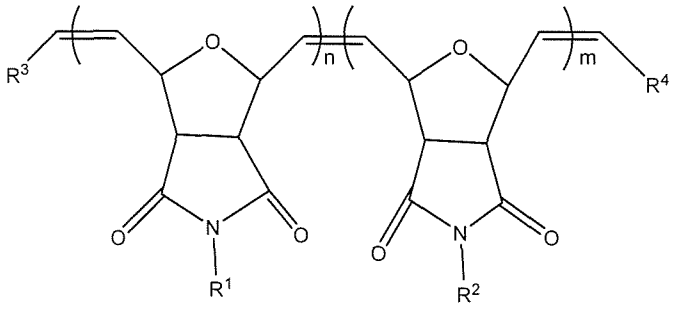
CLAIMS:

1. A diblock copolymer of the formula (I):



(I),

wherein:

R^1 is a C_6-C_{22} alkyl group optionally substituted with a substituent selected from halo, alkoxy, alkylcarbonyl, alkoxycarbonyl, amido, and nitro, or a C_3-C_{11} cycloalkyl group, optionally substituted with a substituent selected from alkyl, halo, alkoxy, alkylcarbonyl, alkoxycarbonyl, amido, and nitro;

R^2 is a C_6-C_{20} aryl group or a heteroaryl group, optionally substituted with a substituent selected from hydroxy, amino, halo, alkoxy, alkylcarbonyl, alkoxycarbonyl, amido, and nitro;

one of R^3 and R^4 is a C_6-C_{14} aryl group, optionally substituted with a substituent selected from hydroxy, halo, amino, and nitro, and the other of R^3 and R^4 is a C_1-C_{22} alkoxy group, optionally substituted with a substituent selected from carboxy, amino, mercapto, alkynyl, alkenyl, halo, azido, and heterocyclyl; and

n and m are independently 2 to about 2000.

2. The diblock copolymer of claim 1, wherein R^1 is a C_6-C_{20} alkyl group, optionally substituted with a substituent selected from halo, alkoxy, alkylcarbonyl, alkoxycarbonyl, amido, and nitro.

3. The diblock copolymer of claim 1 or 2, wherein R^1 is a C_{10}-C_{18} alkyl group, optionally substituted with a substituent selected from halo, alkoxy, alkylcarbonyl, alkoxycarbonyl, amido, and nitro.

4. The diblock copolymer of any one of claims 1-3, wherein R^1 is a C_{16} alkyl group.

5. The diblock copolymer of any one of claims 1-4, wherein R^2 is a C_6-C_{10} aryl group, optionally substituted with a substituent selected from hydroxy, amino, halo, alkoxy, alkylcarbonyl, alkoxycarbonyl, amido, and nitro.

6. The diblock copolymer of any one of claims 1-5, wherein R^2 is a phenyl group, optionally substituted with a substituent selected from hydroxy, amino, halo, alkoxy, alkylcarbonyl, alkoxycarbonyl, amido, and nitro.

7. The diblock copolymer of any one of claims 1-6, wherein R^2 is phenyl.

8. The diblock copolymer of any one of claims 1-7, wherein R^3 is phenyl.

9. The diblock copolymer of any one of claims 1-8, wherein R^4 is a C_1-C_6 alkoxy group.

10. The diblock copolymer of any one of claims 1-9, wherein n is about 10 to about 200 and m is about 50 to about 2000.

11. The diblock copolymer of any one of claims 1-10, wherein n is about 83 to about 190 and m is about 675 to about 1525.

12. The diblock copolymer of any one of claims 1-11, which has the following structure: