Supporting Information

Electrochemically Active Dendritic-Linear Block Copolymers via RAFT Polymerization: Synthesis, Characterization, and Electrodeposition Properties

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NMR Summary

G1-Cbz-OH. ^{1}H NMR ($CDCl_3$): δ (ppm) 8.10 (d, 4H,), 7.53-7.42 (m, 8H), 7.25-7.22 (m, 4H), 6.45 (d, 2H,), 6.28 (t, 1H,), 4.59 (s, 2H), 4.39 (t, 4H,), 3.91 (t, 4H,), 2.02-2.12 (m, 4H), 1.87-1.78 (m, 4H). ^{13}C NMR ($CDCl_3$): δ (ppm) 160.26, 144.33, 140.38, 128.4, 125.7, 122.89, 120.44, 118.89, 108.69, 105.19, 100.57, 67.58, 65.34, 42.75, 27.02, 25.91.

G2-Cbz-OH. ^{1}H NMR ($CDCl_3$): δ (ppm) 8.15 (d, 8H,), 7.53-7.42 (m, 16H), 7.31-7.25 (m, 8H), 6.59 (d, 2H,), 6.50-6.52 (m, 5H), 6.32 (t, 2H,), 4.95 (s, 4H), 4.59 (s, 2H), 4.36 (t, 8H,), 3.88 (t, 8H,), 2.11-2.00 (m, 8H), 1.87-1.76 (m, 8H). ^{13}C NMR ($CDCl_3$): δ (ppm) 160.25, 160.09, 143.39, 140.37, 139.2, 125.69, 122.88, 120.4, 118.86, 108.66, 105.84, 105.72, 101.33, 100.81, 69.98, 67.57, 65.3, 42.72, 26.96, 25.88.

G3-Cbz-OH. ^{1}H NMR ($CDCl_3$): δ (ppm) 8.15 (d, 16H,), 7.53-7.40 (m, 32H), 7.31-7.26 (m, 16H), 6.74 (b, 4H), 6.64 (b, 2H), 6.60 (b, 2H), 6.56 (b, 8H), 6.36 (b, 4H), 4.97 (s, 12H), 4.57 (s, 2H), 4.33 (t, 16H,),

3.86 (t, 16H,), 2.06-2.01 (m, 16H), 1.81-1.77 (m, 16H). ^{13}C NMR ($CDCl_3$): δ (ppm) 160.13, 160.01, 159.90, 143.58, 140.24, 139.25, 139.02, 125.58, 122.73, 120.27, 118.77, 108.58, 106.27, 105.75, 105.50, 101.48, 101.14, 100.75, 69.92, 69.80, 67.39, 64.97, 60.33, 42.49, 26.81, 25.69.

G4-Cbz-OH. ^{1}H NMR ($CDCl_3$): δ (ppm) 8.13 (d, 32H), 7.53-7.48 (m, 32H), 7.44-7.41 (m, 32H), 7.30-7.26 (m, 32H), 6.73-6.71 (m, 12H), 6.63 (b, 9H), 6.55 (b, 16H), 6.36 (b, 8H), 4.96 (b, 28H), 4.56 (b, 2H), 4.35 (t, 32H,), 3.86 (t, 32H), 2.07-2.00 (m, 32H), 1.82-1.77 (m, 32H). ^{13}C NMR ($CDCl_3$): δ (ppm) 160.19, 160.061, 160.02, 140.30, 139.21, 139.04, 125.62, 122.80, 120.32, 118.81, 108.61, 106.39, 105.84, 101.55, 100.81, 69.96, 67.35, 65.24, 65.03, 42.57, 26.96, 25.74.

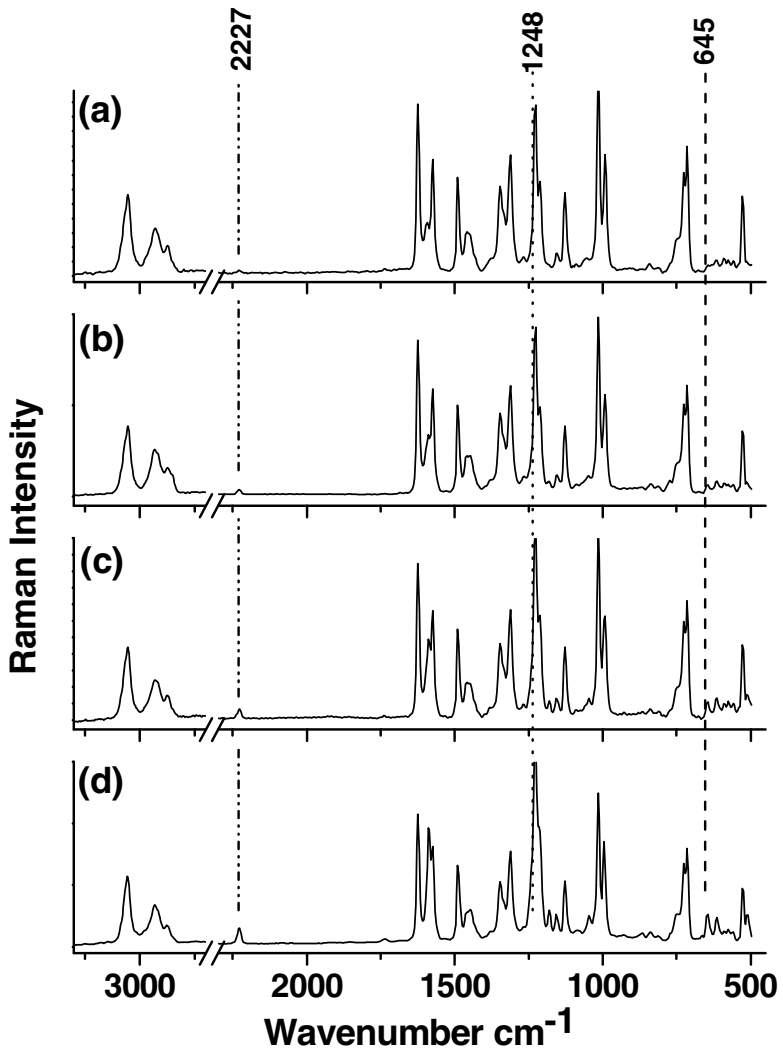

Figure S1. FT-Raman Spectra of (a) G4-Cbz-CTA (b) G3-Cbz-CTA (c) G2-Cbz-CTA and (d) G1-Cbz-CTA.

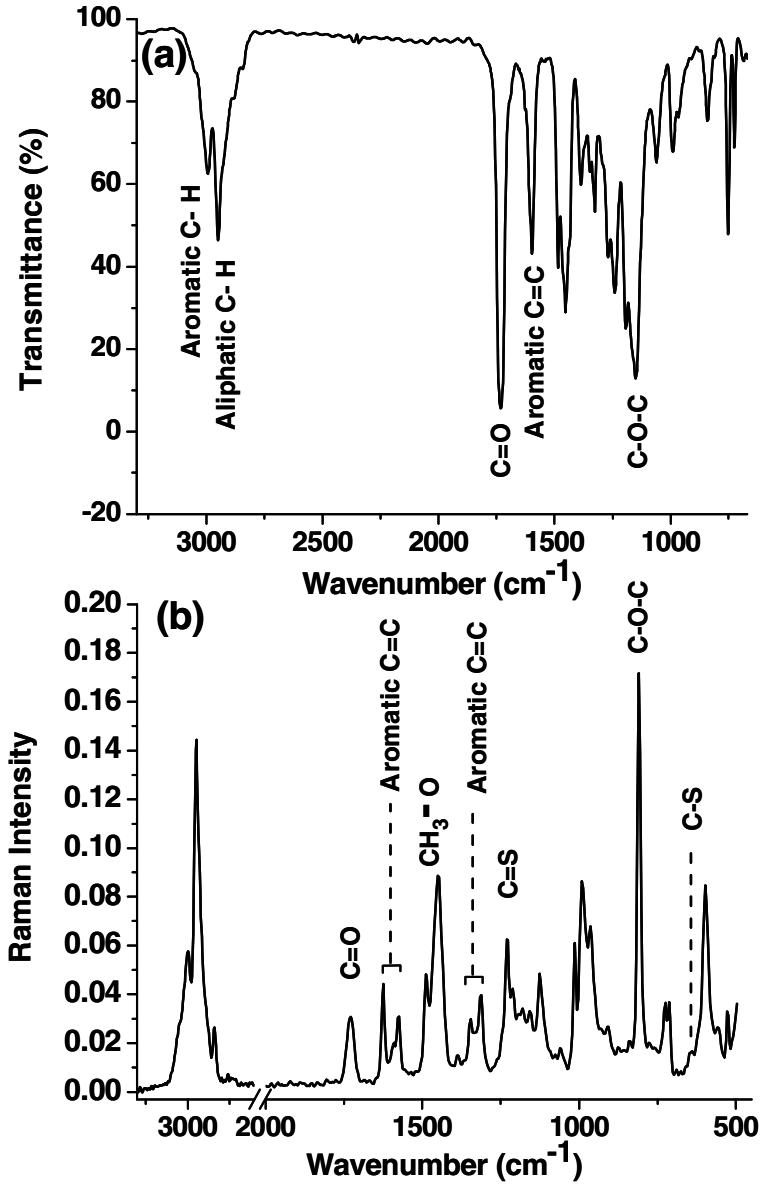

Figure S2. (a) FTIR and (b) Raman spectra of G3-Cbz-PMMA.

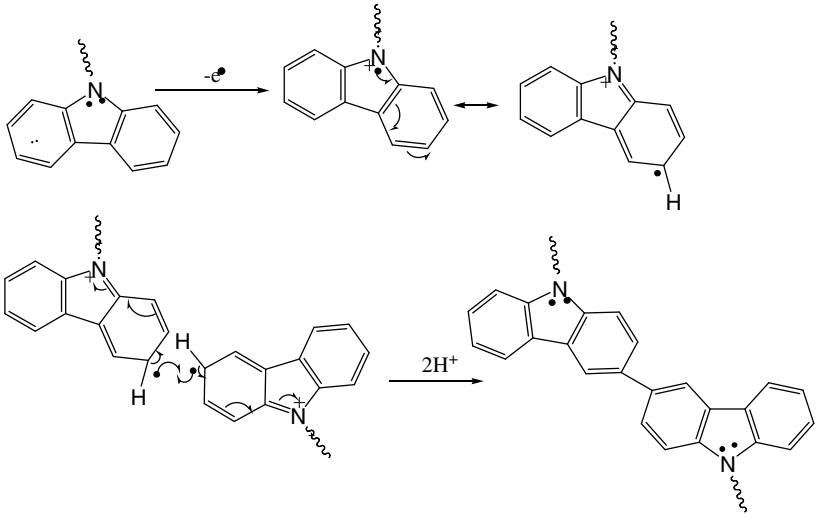

Figure S3. Radical cation coupling mechanism in carbazole moieties.