Supporting Information For:

On the Interfacial Behavior of OEG-Linear Dendron Monolayers: Aggregation, Nanostructring, and Electropolymerizability

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I. Synthesis of G_nCbztEG

The details of the synthesis of G_nCbztEG linear dendron macromolecules is published elsewhere.[1] This was accomplished by first synthesizing the carbazole dendrons following a convergent approach.

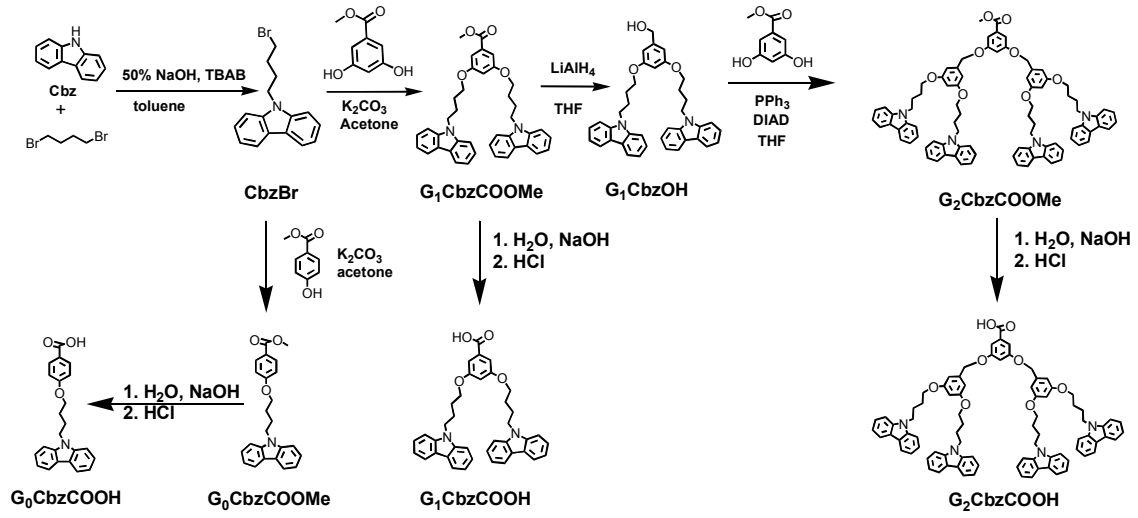
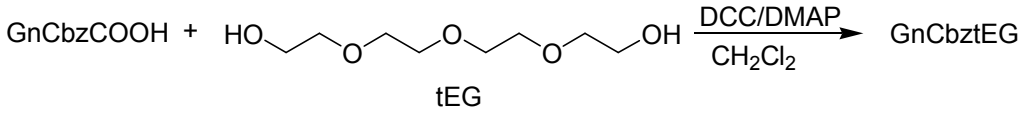


Figure S1. Synthesis scheme for the formation of the dendron.

Each of the carbazole dendrons with the carboxylic acid functional group was reacted with tetraethylene glycol via a dicyclohexylcarbodiimide (DCC) coupling protocol to afford the target G_nCbztEG molecules.



Gn = G0, G1, or G2

II. Compression-Expansion (Hysteresis) Studies

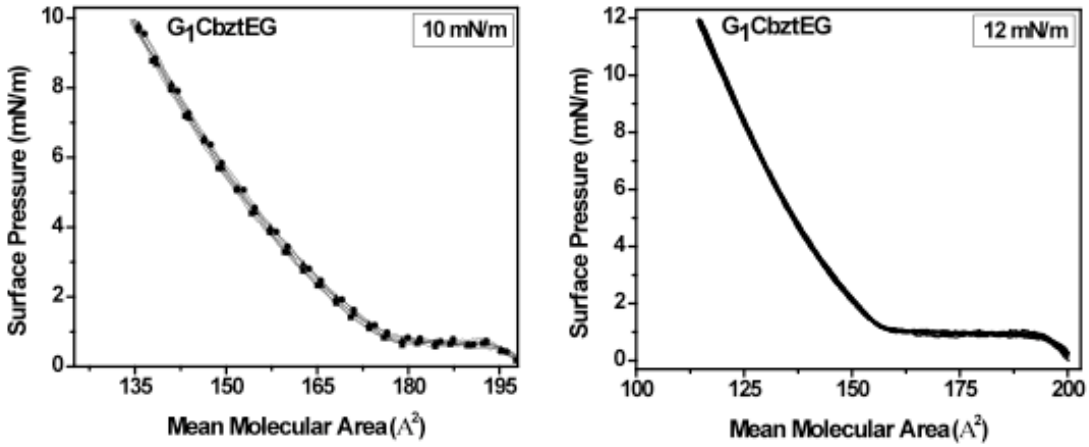


Figure S2. Hysteresis measurements showed the cyclic and monolayer stability of G_1CbztEG

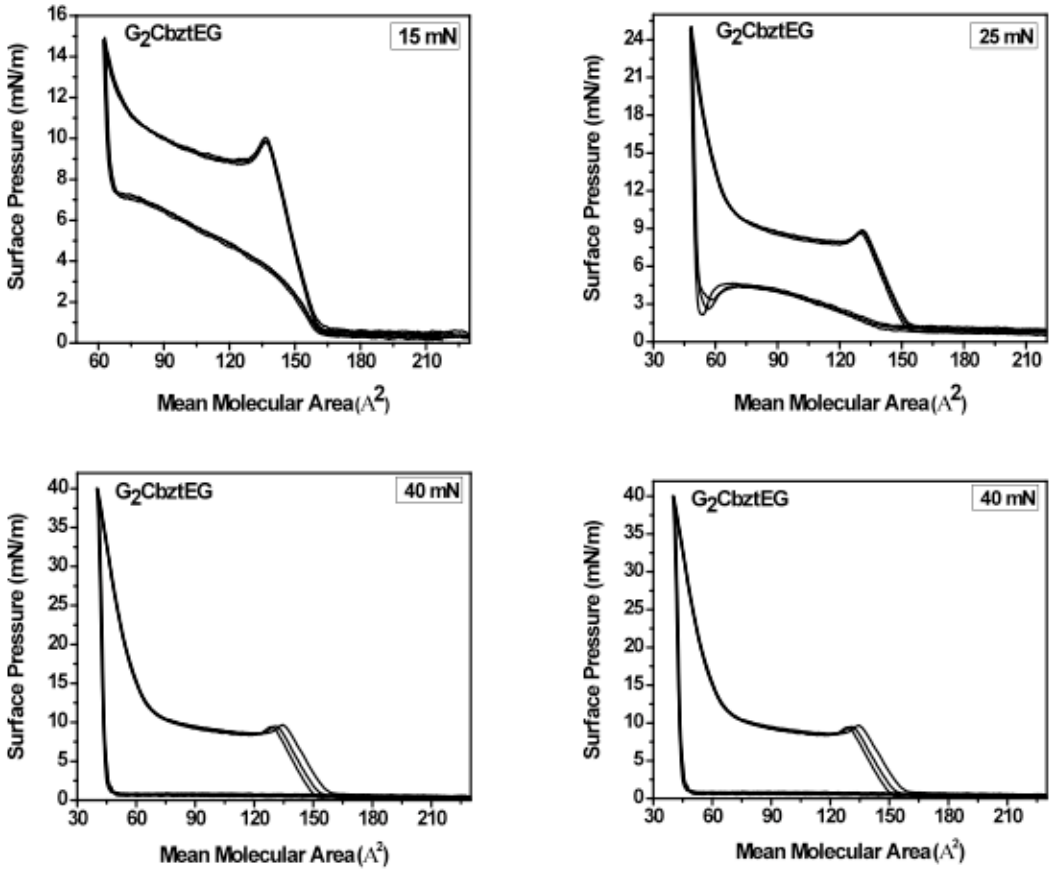


Figure S3. Hysteresis measurements showed the cyclic and monolayer stability of G_2CbztEG

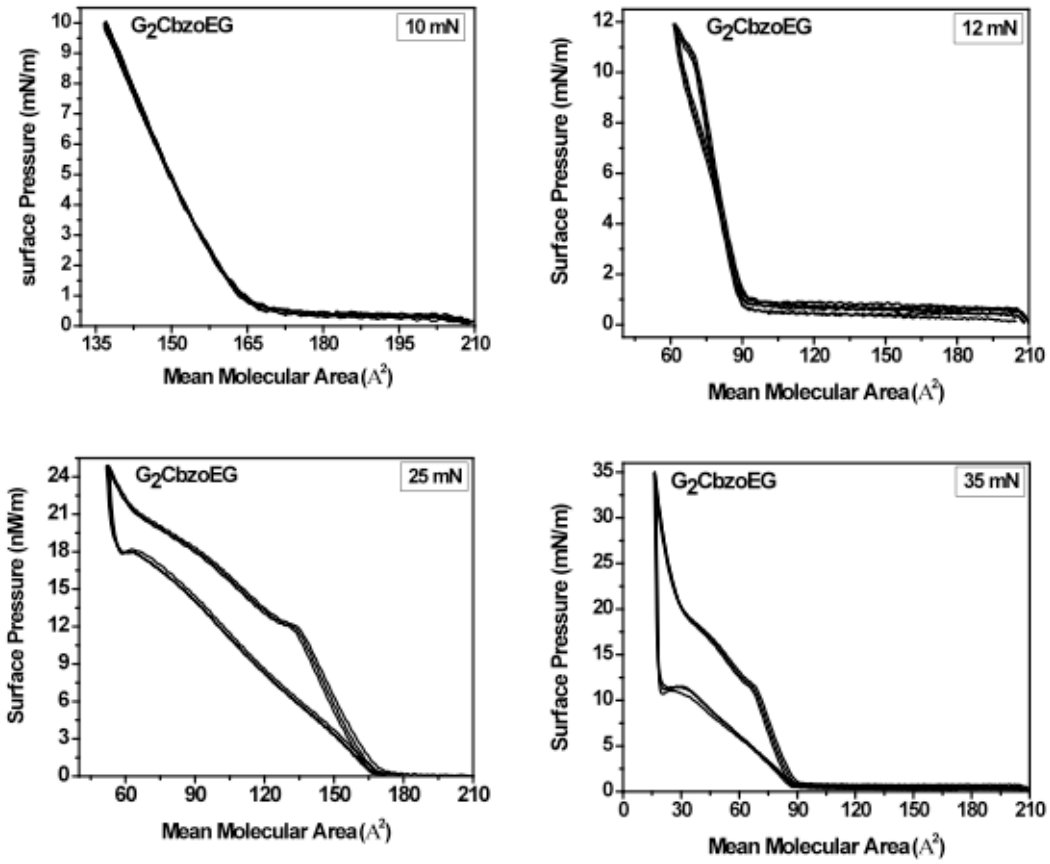
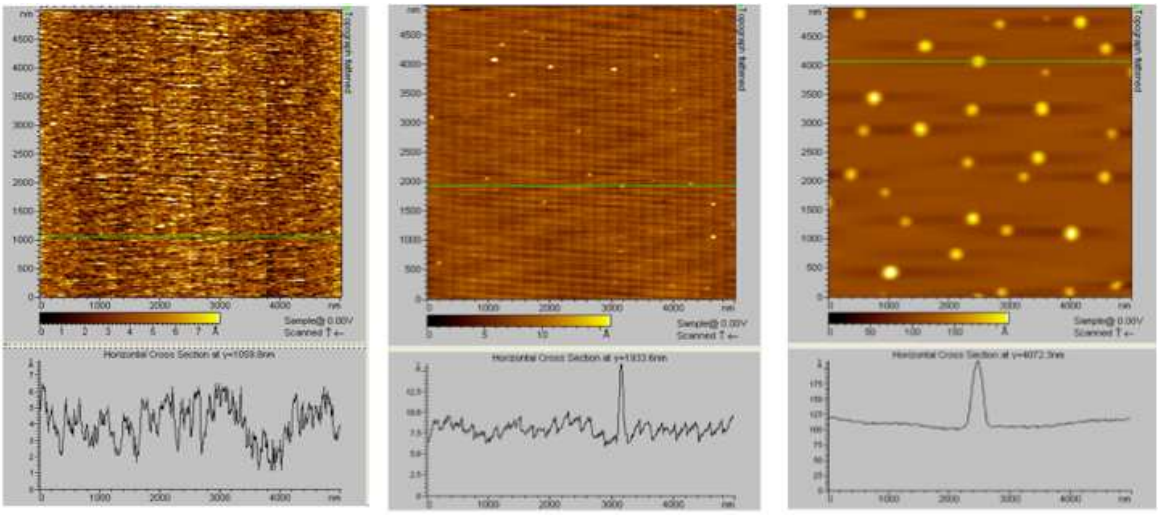


Figure S4. Hysteresis measurements showed the cyclic and monolayer stability of G_2CbzoEG.

III. Surface Morphology Studies



(a) (b) (c)

Figure S5. Topography images of (a) bare mica, and LB monolayers of (b) G_0CbztEG, and (c) G_1CbztEG transferred at π = 16 mN/m.

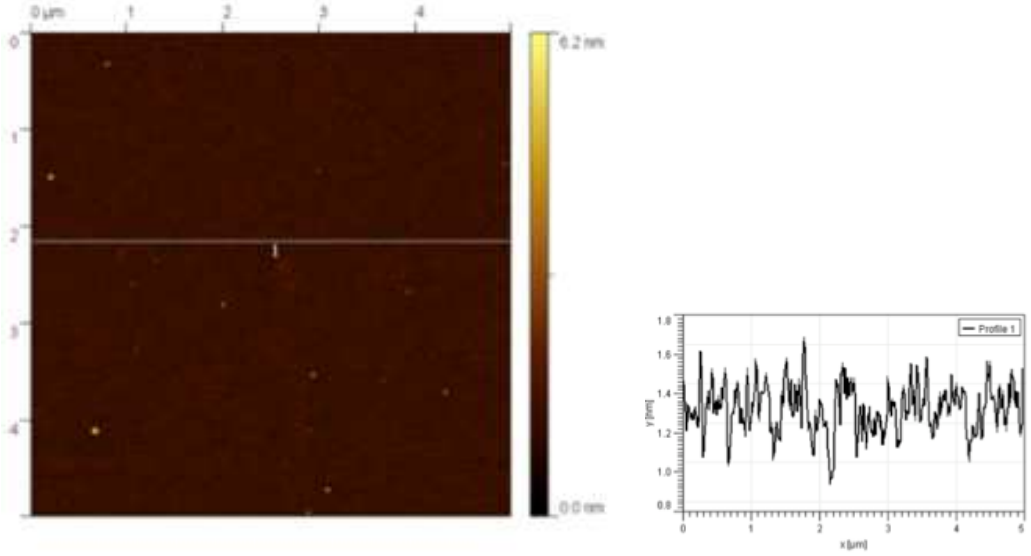
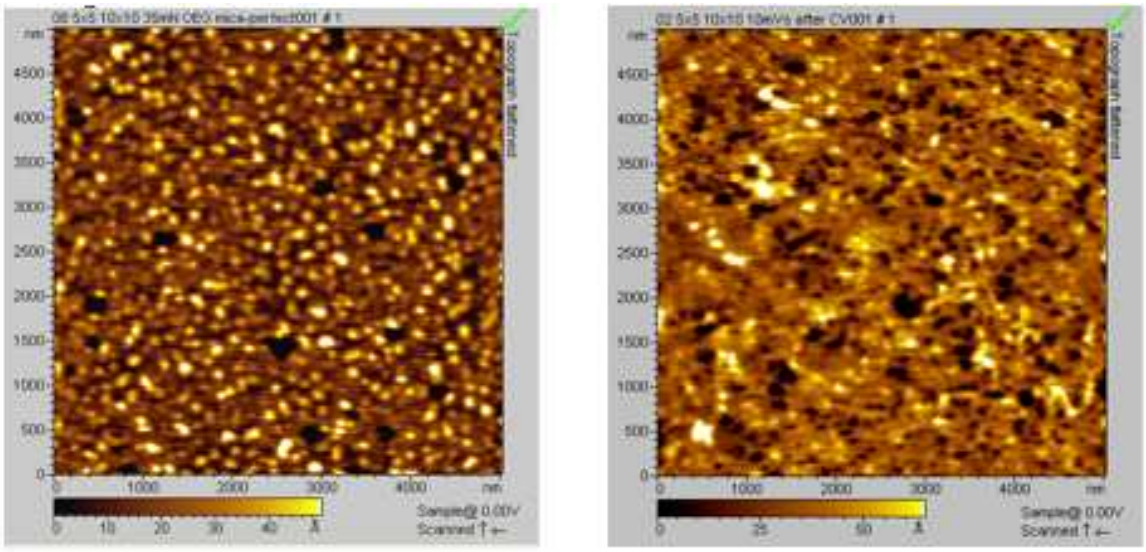


Figure S6. Topography images (AFM) image of a flat bare-doped Si surface.



(a) (b)

Figure S7. Topography images of G_2CbzoEG (b) LB monolayer, and (c) after electrochemical cross-linking of the LB film.

IV. Radical cation mechanism for carbazole electropolymerization.

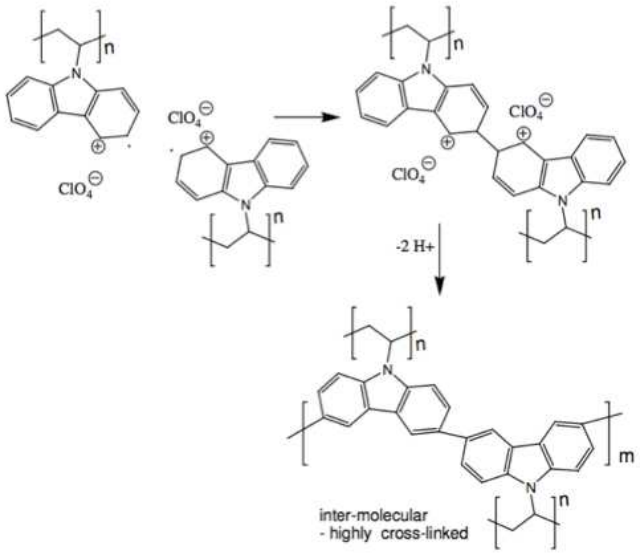


Figure S8. Mechanism for carbazole. (PVK) electrochemical crosslinking.

References:

(1) Felipe, M.J., Ponnapati, R., Dutta, P.; Pernites, R.; Advincula, R. *ACS Appl. Mater. Interfaces* **2010**, *2*, 3401–3405.