

# **Supporting Information**

## **Nanostructured Surfaces of Opposite Charge from Self-Assembled Block Copolymers**

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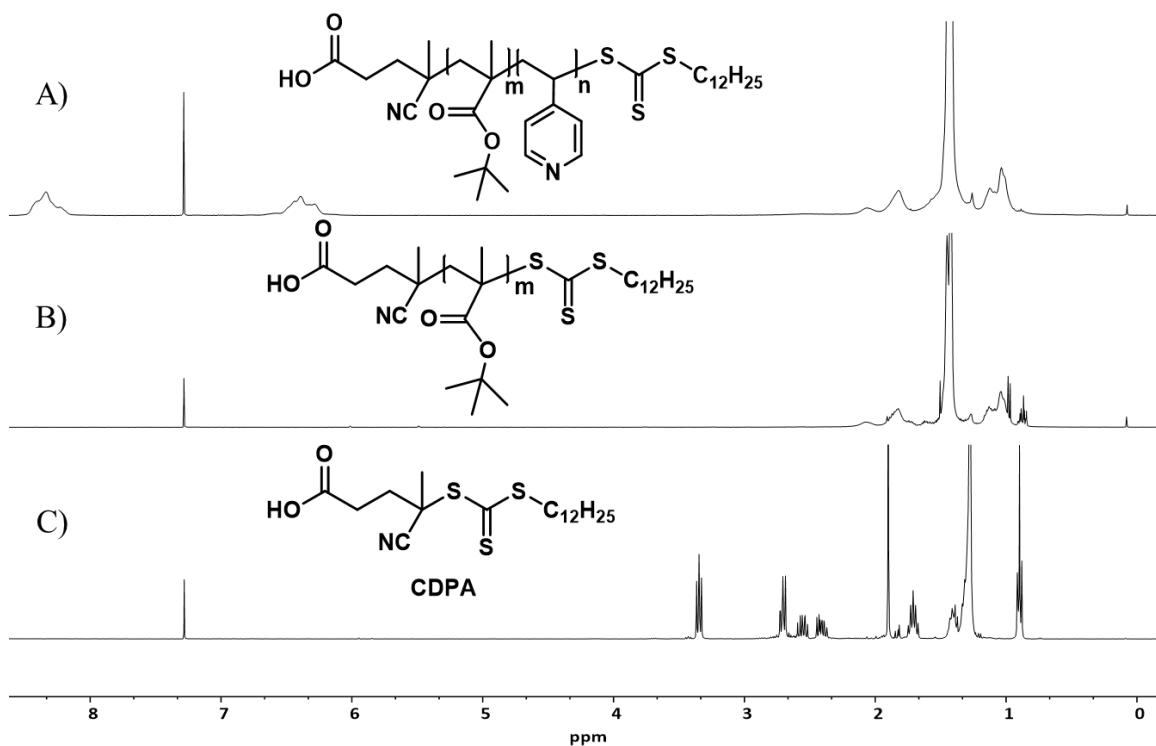
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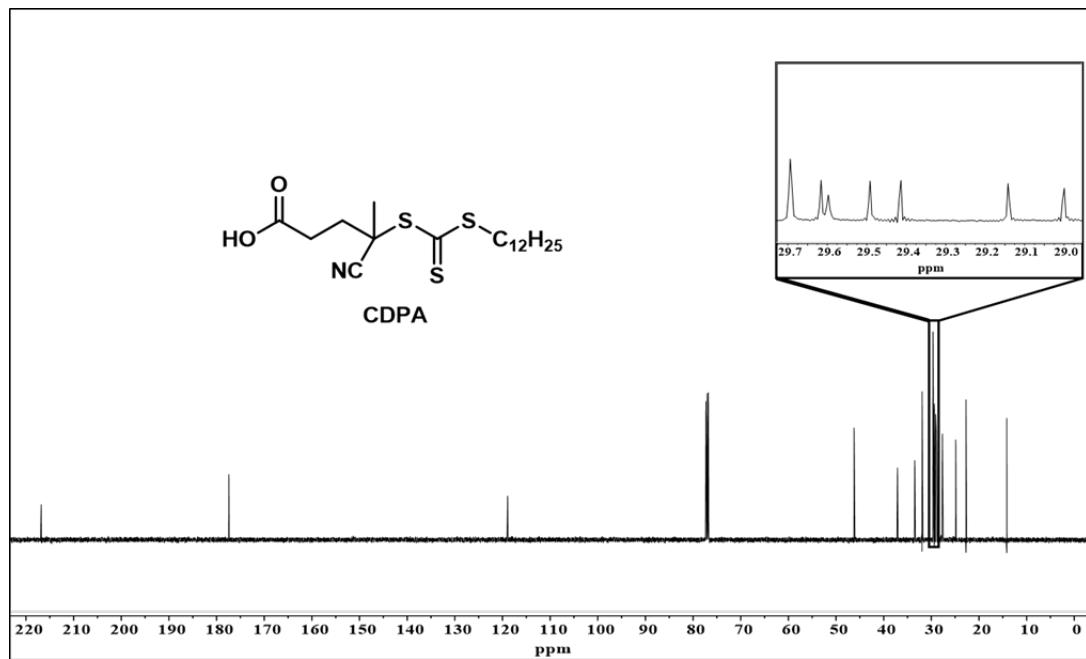
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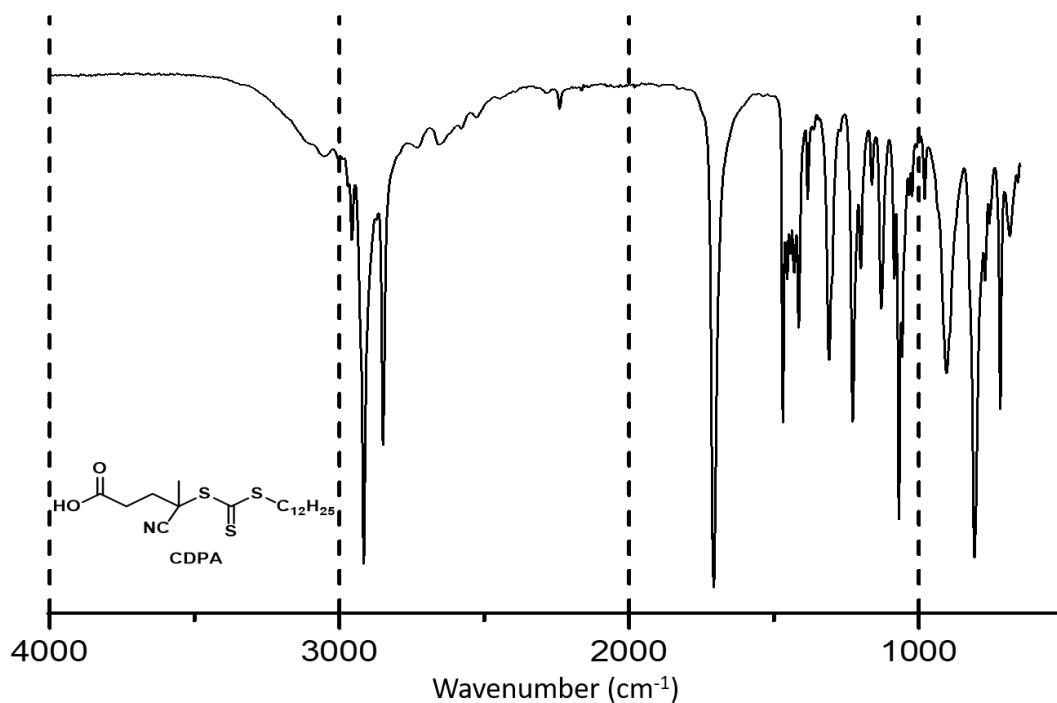
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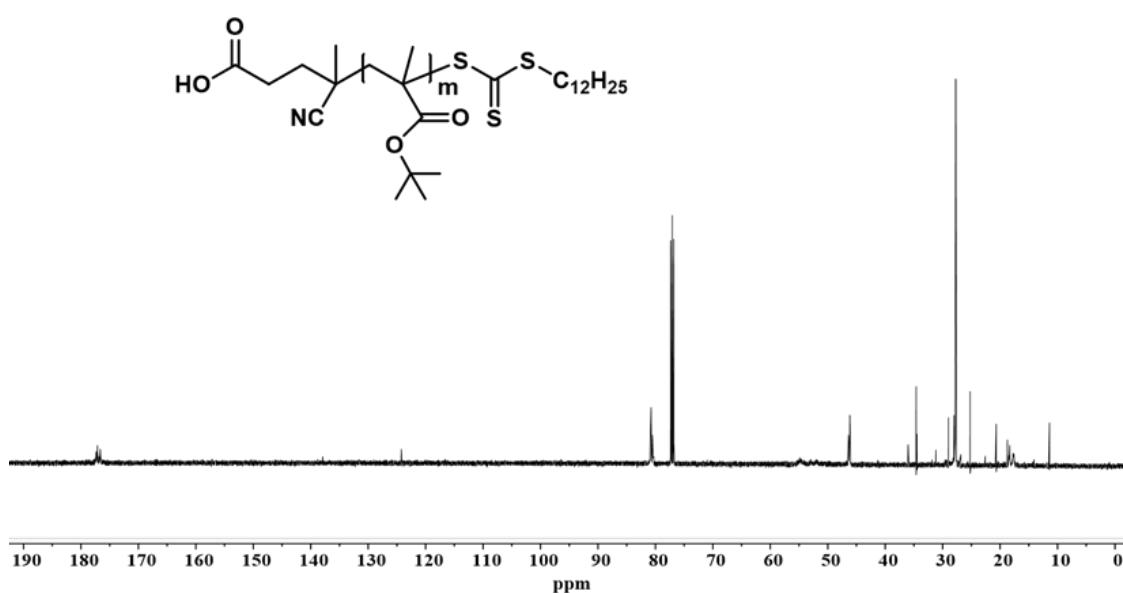
**Figure S1.** Stacked  $^1\text{H}$  NMR ( $\text{CDCl}_3$ , 25 °C) of A) P4VP-*b*-PtBMA, B) PtBMA homopolymer, and C) RAFT CTA (CDPA).



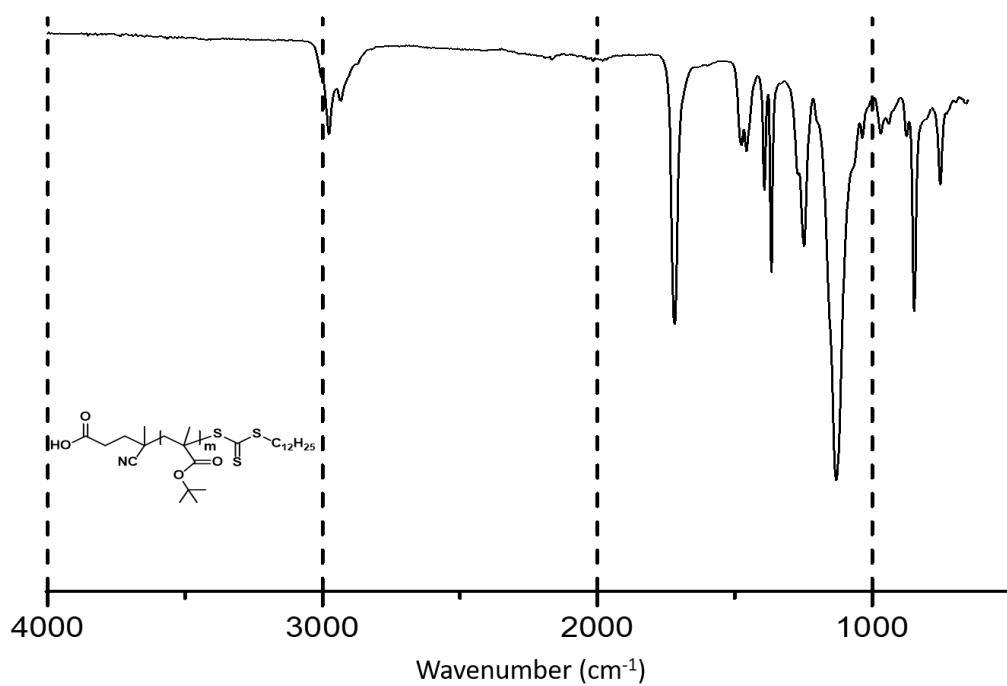
**Figure S2.**  $^{13}\text{C}$  NMR ( $\text{CDCl}_3$ , 25 °C, 125 MHz) of CDPA, RAFT CTA.



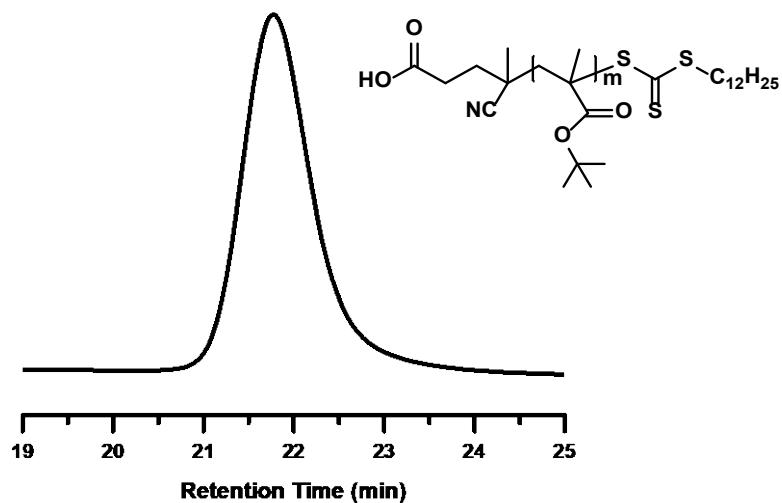
**Figure S3.** ATR-IR spectrum of CDPA, RAFT CTA, at 25 °C.



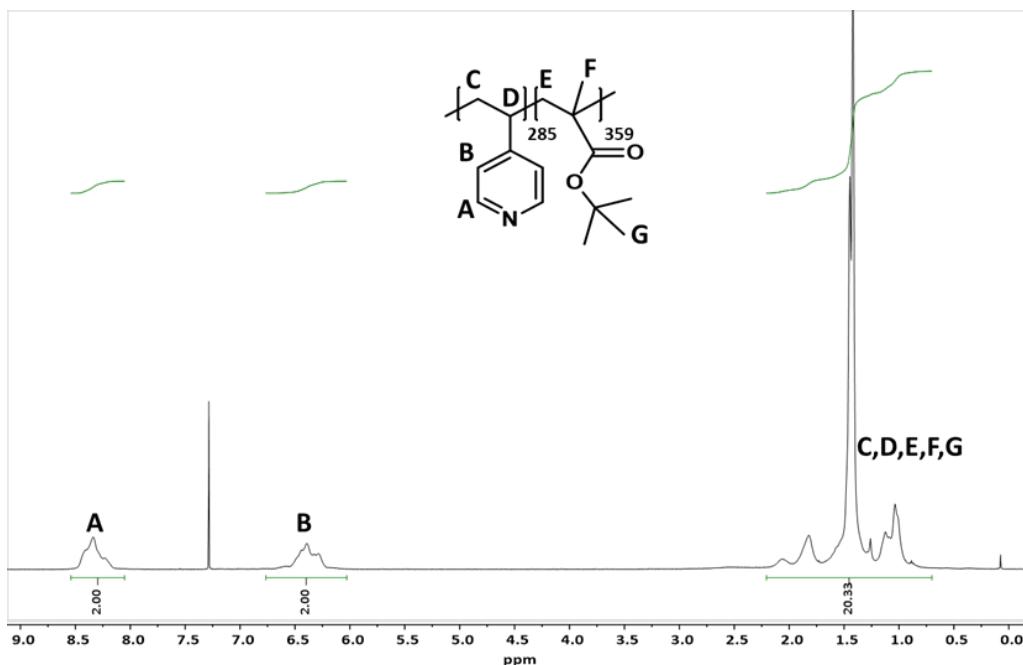
**Figure S4.** <sup>13</sup>C NMR (CDCl<sub>3</sub>, 25 °C, 125 MHz) of PtBMA macro-CTA.



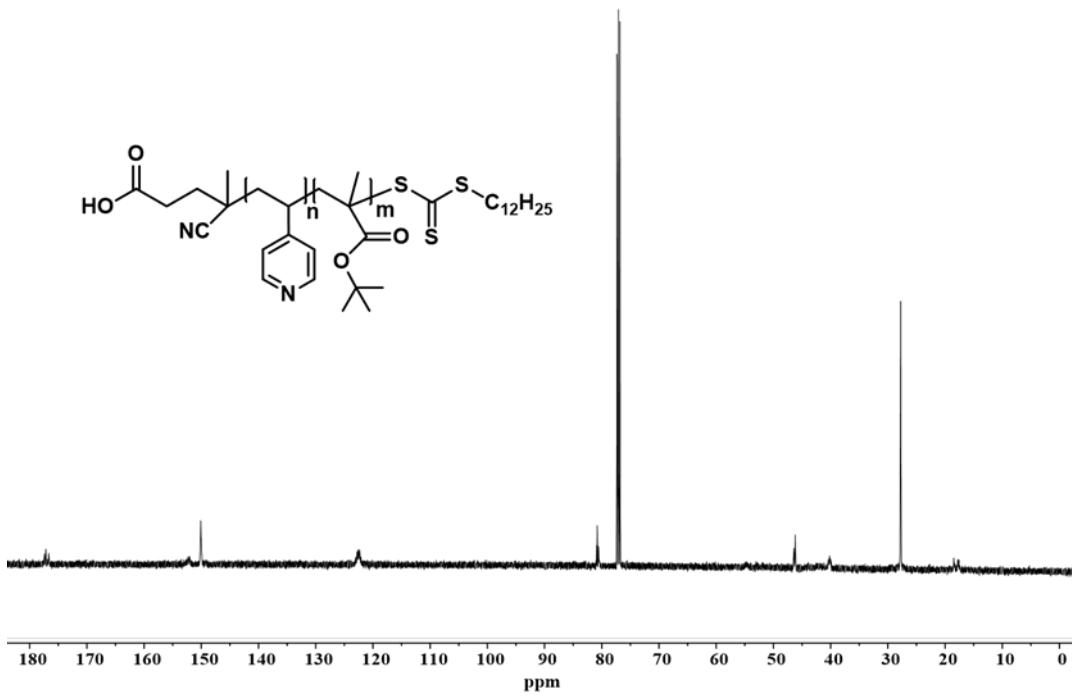
**Figure S5.** ATR-IR spectrum of PtBMA macro-CTA at 25 °C.



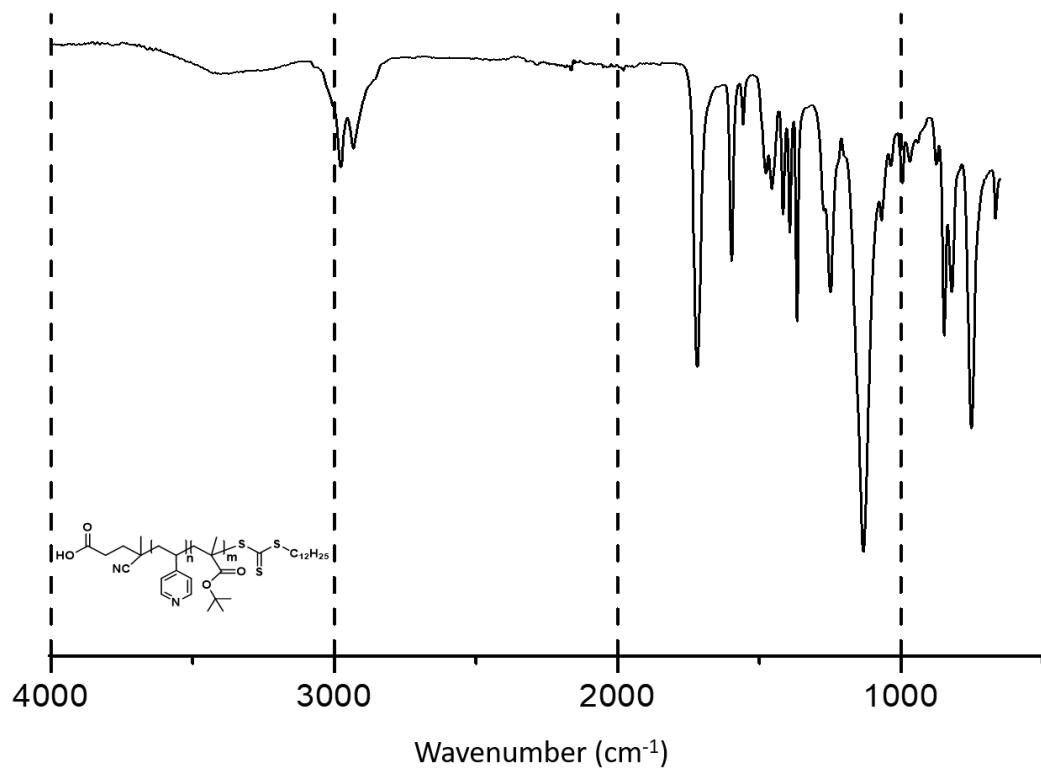
**Figure S6.** SEC-RI trace (THF mobile phase, 25 °C) of PtBMA macro-CTA ( $M_n = 51.0 \text{ kg mol}^{-1}$ ,  $\bar{D} = 1.04$ ) determined by MALS using a  $d\eta/dc = 0.065 \text{ mL/g}$ .



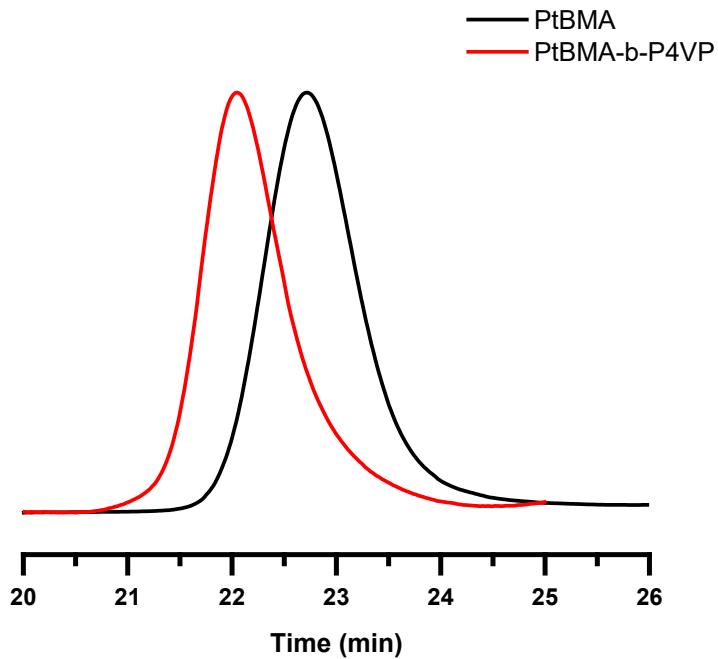
**Figure S7.** <sup>1</sup>H NMR (CDCl<sub>3</sub>, 25 °C) showing the integration ratios for P4VP-*b*-PtBMA used for determining molar ratios of each diblock copolymer segment.



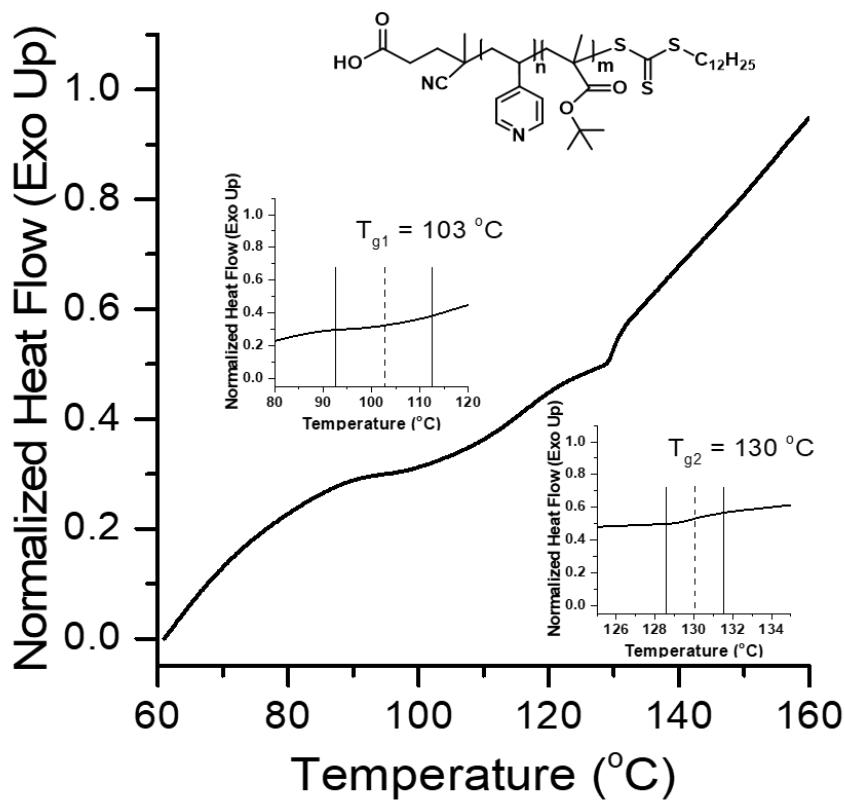
**Figure S8.** <sup>13</sup>C NMR (CDCl<sub>3</sub>, 25 °C, 125 MHz) of PtBMA-*b*-P4VP.



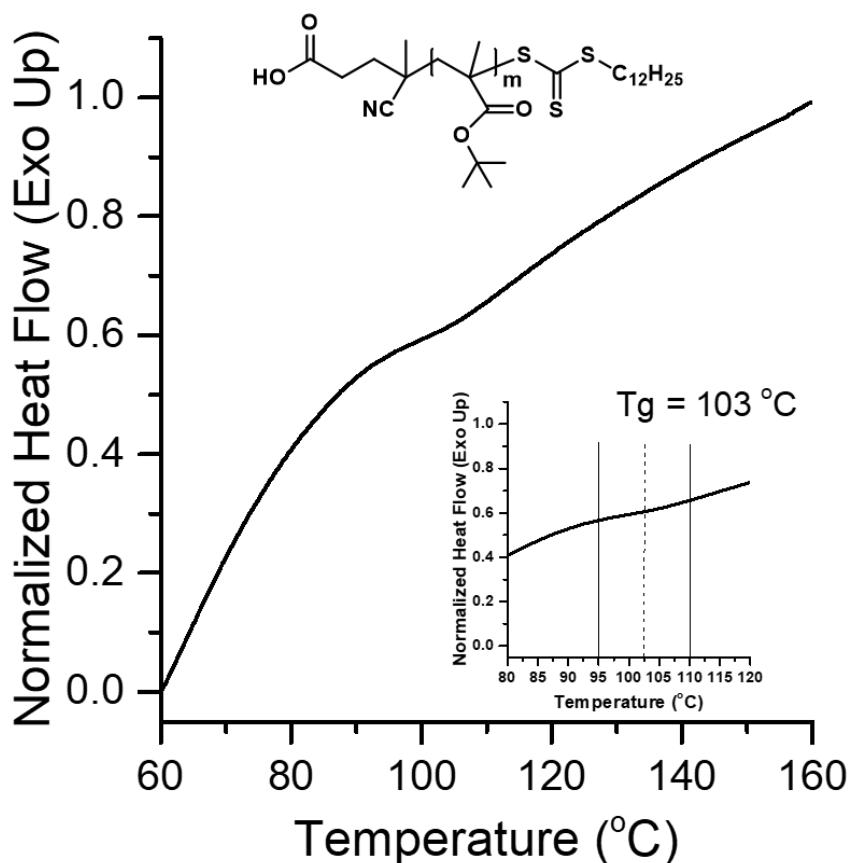
**Figure S9.** ATR-IR spectrum of PtBMA-*b*-P4VP at 25 °C.



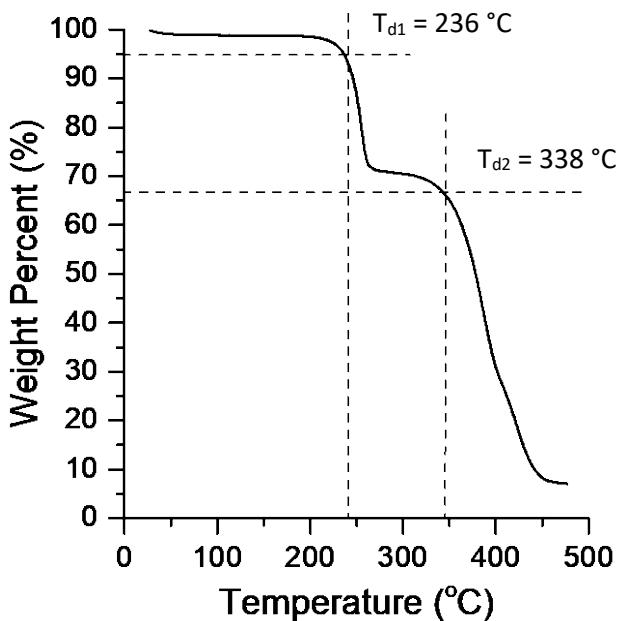
**Figure S10.** SEC-RI overlay trace (THF mobile phase, 25 °C) of PtBMA (black) and PtBMA-*b*-P4VP (red).



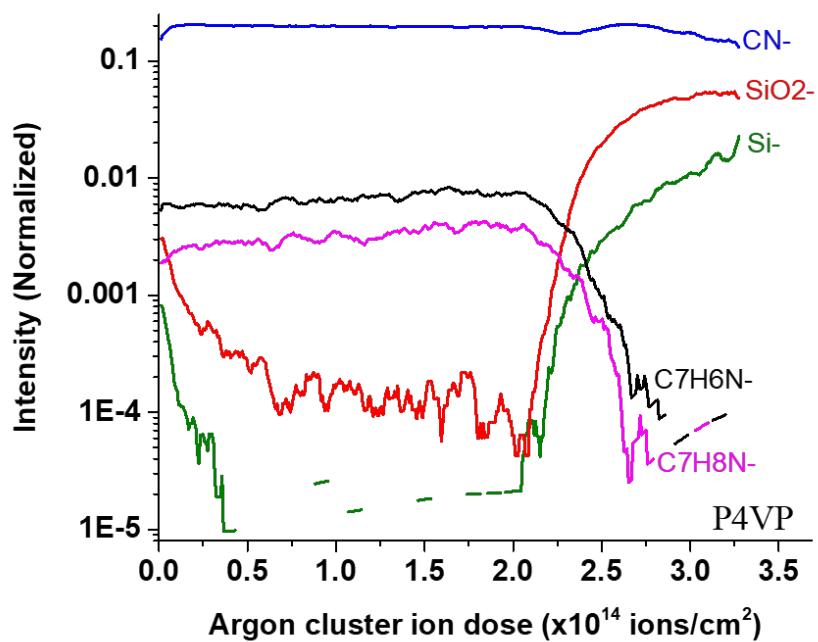
**Figure S11.** DSC thermogram of PtBMA-*b*-P4VP (exo up). Samples were cycled from 40 °C to 165 °C at a rate of 10 °C min<sup>-1</sup> under N<sub>2</sub> and the data shown was taken upon the 2<sup>nd</sup> heating.



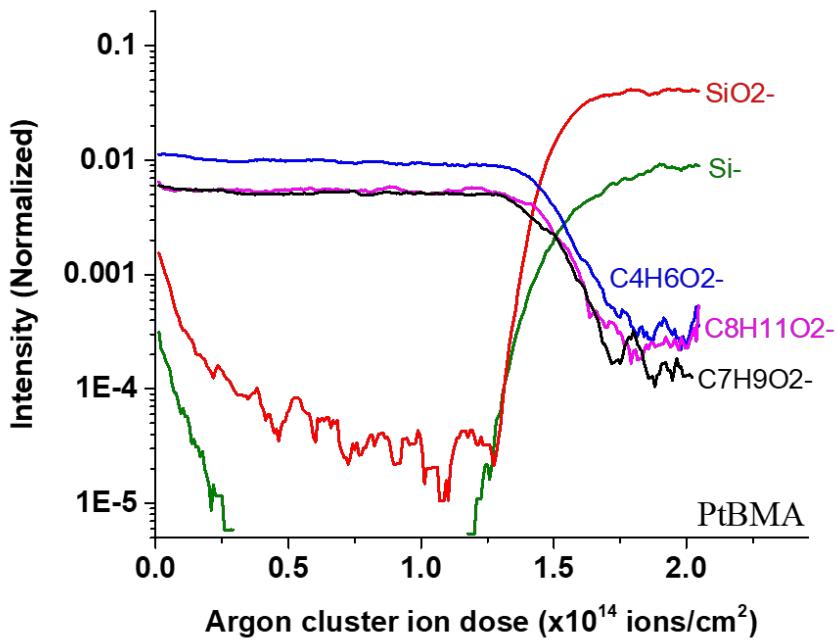
**Figure S12.** DSC thermogram of PtBMA macro-CTA (exo up). Samples were cycled from 40 °C to 165 °C at a rate of 10 °C min<sup>-1</sup> under N<sub>2</sub> and the data shown was taken upon the 2<sup>nd</sup> heating.



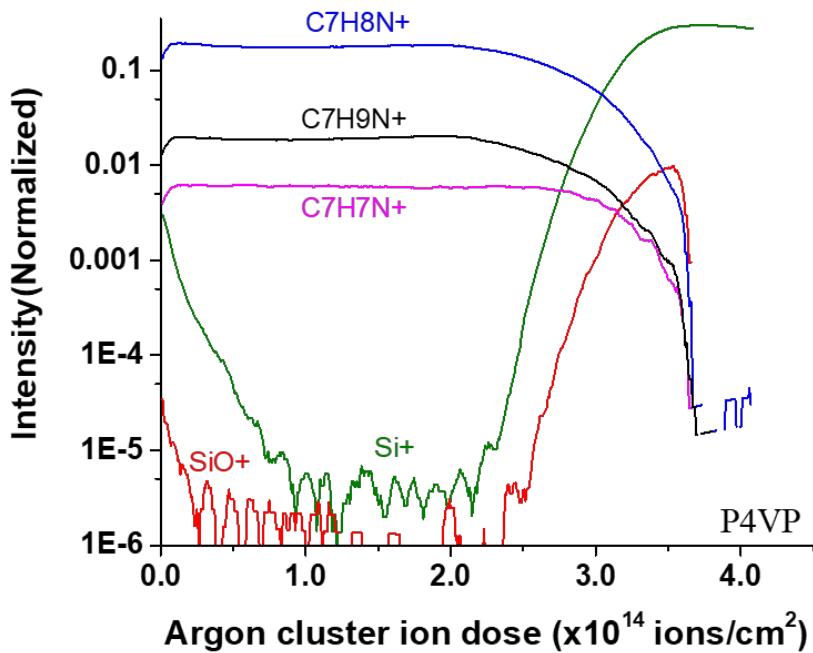
**Figure S13.** TGA thermogram of PtBMA-*b*-P4VP taken at a heating rate of  $10\text{ °C min}^{-1}$  under Ar. A two-step thermal decomposition is observed.



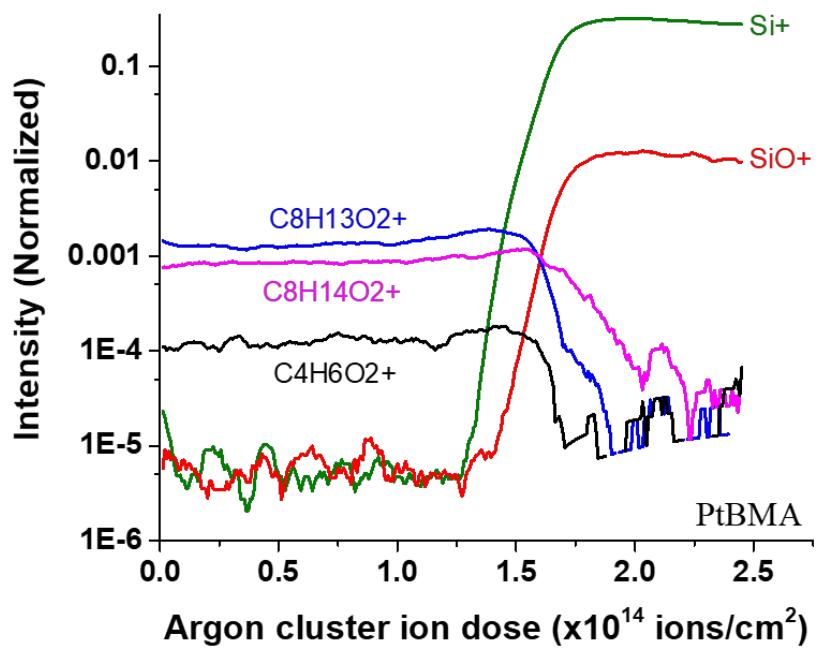
**Figure S14.** Normalized intensity of negative ion detection as a function of ion dose determined by ToF-SIMS in negative ion mode for P4VP homopolymer.



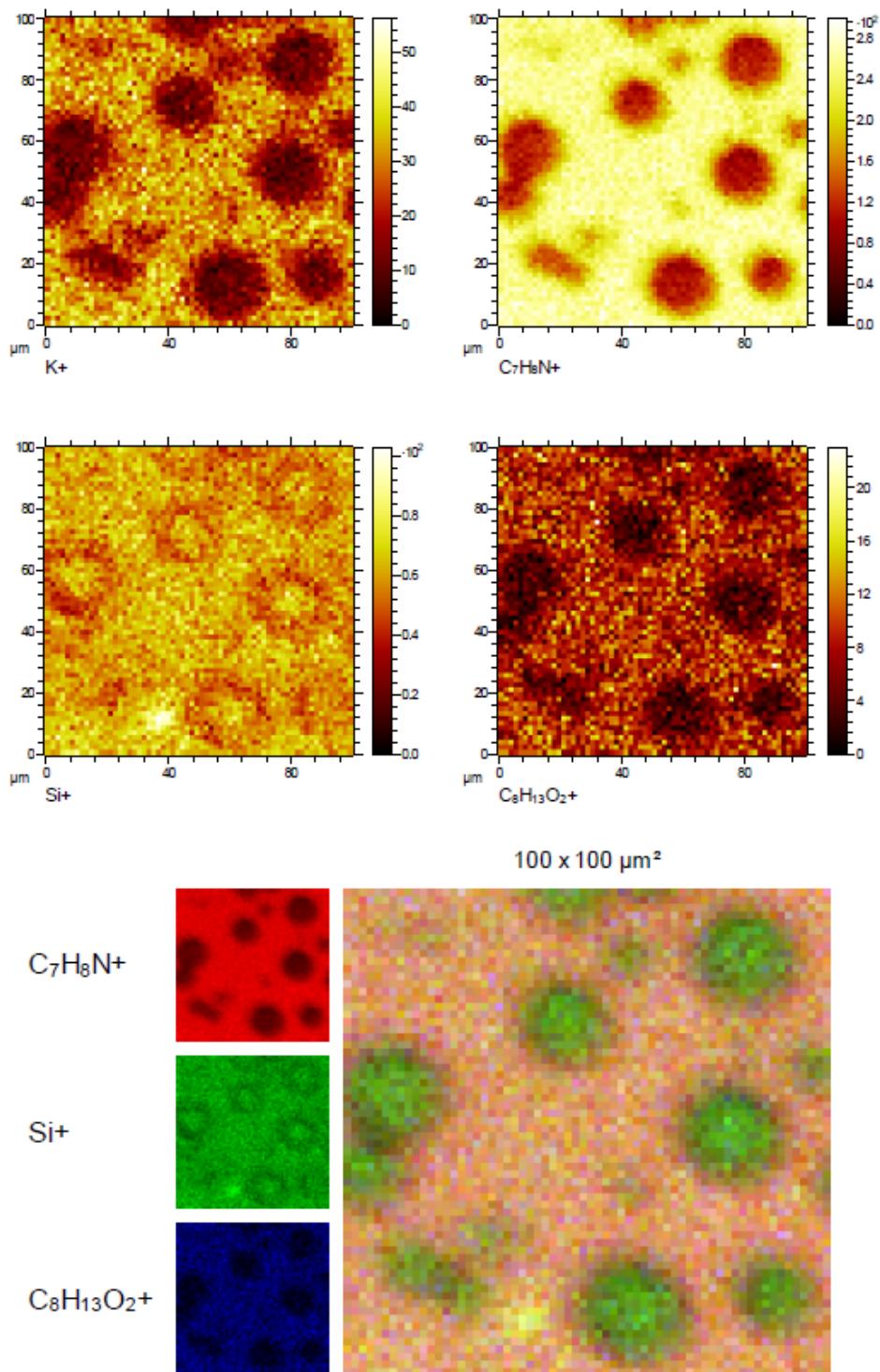
**Figure S15.** Normalized intensity of negative ion detection as a function of ion dose determined by ToF-SIMS in negative ion mode for PtBMA homopolymer



**Figure S16.** Normalized intensity of positive ion detection as a function of ion dose determined by ToF-SIMS in positive ion mode for P4VP homopolymer.



**Figure S17.** Normalized intensity of positive ion detection as a function of ion dose determined by ToF-SIMS in positive ion mode of PtBMA homopolymer.



**Figure S18.** ToF-SIMS imaging of dewetted film **VP-MA(12-4)**. The characteristic ion images, here,  $C_7H_8N^+$  (red) for P4VP and  $C_8H_{13}O_2^+$  (blue) for PtBMA described a relatively homogeneous composition in the region without dewetting when the  $Si^+$  ion image displays the substrate in the bottom of the pits.

**Description and images of custom-built glassware apparatus for treatment of thin films with HCl vapor.**

A glass vial insert serves as the HCl reservoir which is housed within a pressure vessel that can be sealed with a PTFE cap and Viton o-ring (left picture). Another glass insert rests at the top of the pressure vessel and serves as a stage for the substrates to rest on (right picture). This glass insert has a bore in the center to allow HCl vapor exposure from the reservoir below.

