Supplementary Materials for:

Strategies for elemental mapping from energy-filtered TEM of polymeric materials

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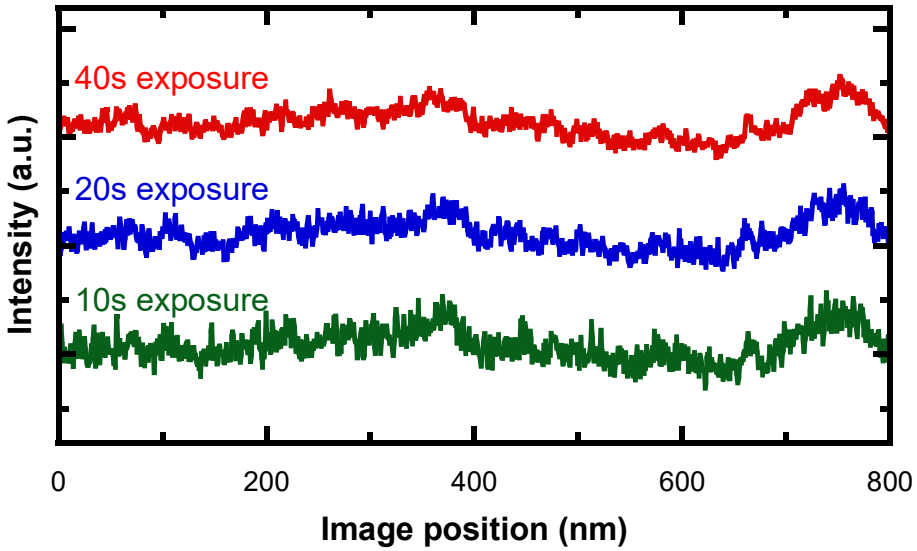

Figure S1. Line scans taken at the same location of sulfur post-edge images shown in Figure 4 of the main text. Data are normalized by exposure time and scaled for clarity. Signal-to-noise increases with increased exposure time.

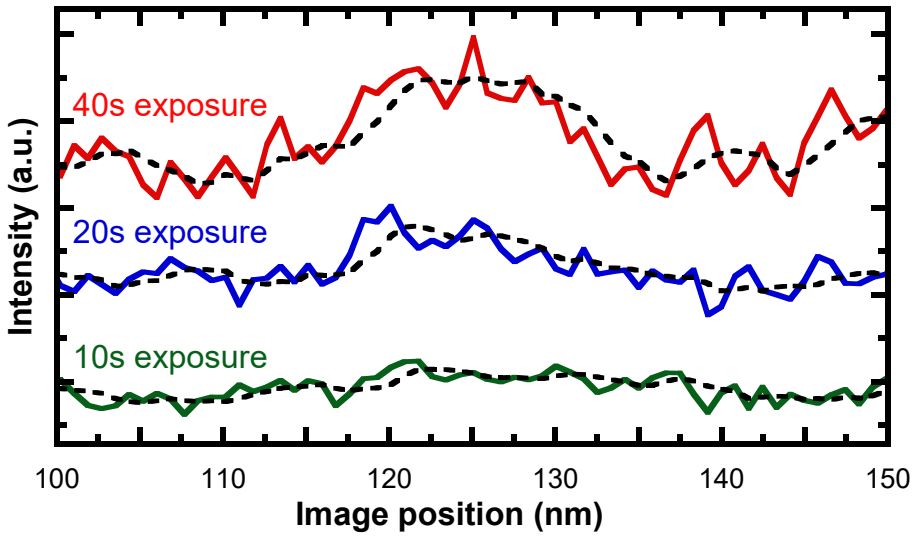

Figure S2. Line scans centered around a fiber feature. Dotted lines represent the moving average. Peak-to-noise ratio is calculated by dividing the amplitude of the peak by the variance in intensity with respect to the moving average. Data are scaled for clarity.

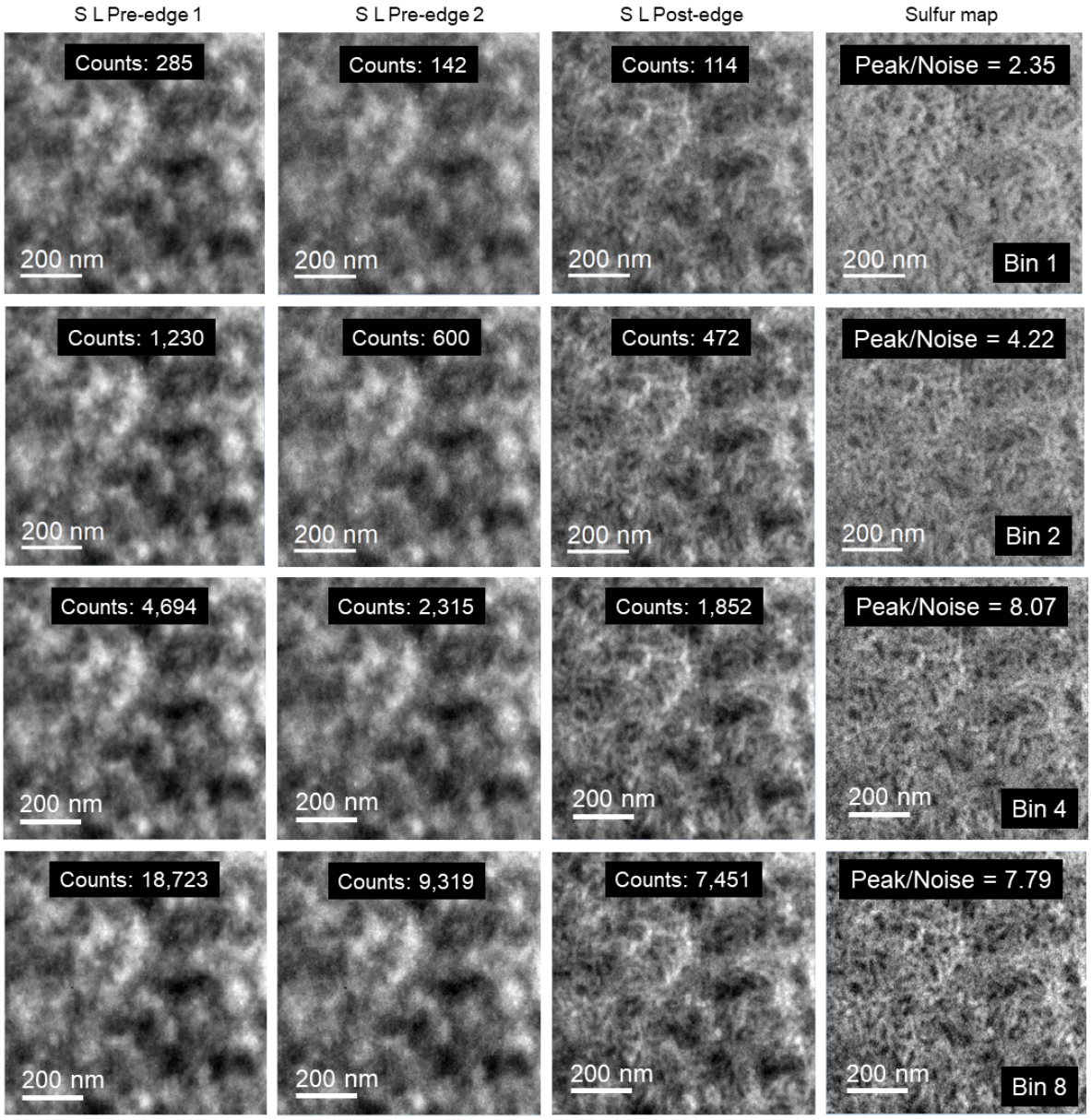

Figure S3. Source maps and sulfur maps taken at different binning values. CCD counts are included for each source image and average Peak-to-noise ratios (Peak/Noise) calculated from three features are reported for each sulfur elemental map. The peak-to-noise ratio first increases with increased binning then saturates after binning 4, suggesting that binning 4 is where signal-to-noise and spatial resolution are optimized for the 10 nm fiber features at this magnification (33,800x).

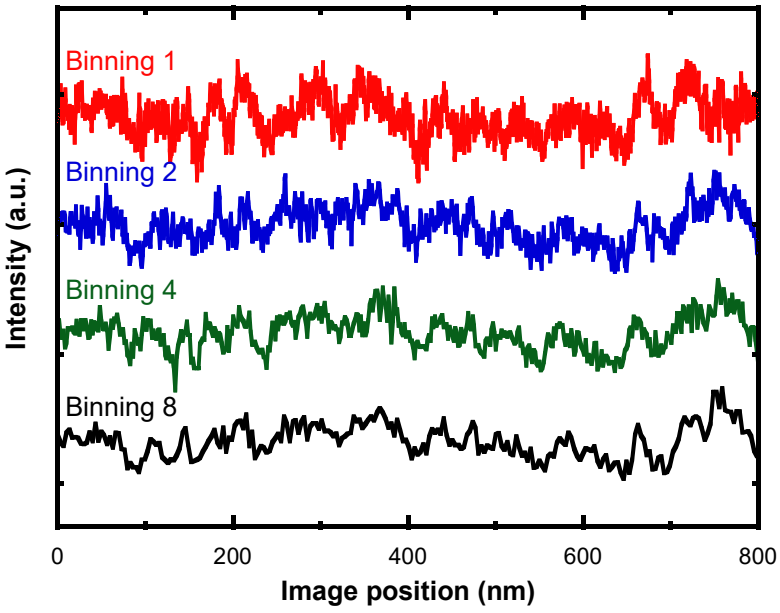

Figure S4. Line profiles taken from sulfur maps generated with different binning values. Data are normalized by binning and scaled for clarity. Binning combines charges collected by adjacent CCD pixels, thereby increasing the signal-to-noise ratio at the cost of resolution.

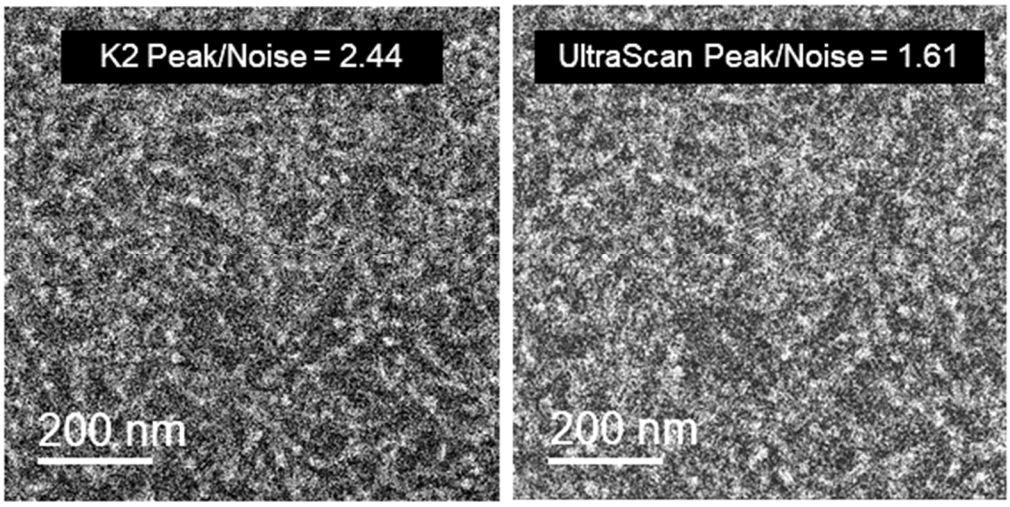

Figure S5. Comparison of P3HT/PCBM sulfur elemental maps taken with a K2 direct electron detector or an UltraScan CCD on an FEI Krios microscope operating at 300 kV. Use of the K2 detector results in approximately a 1.5 increase in the signal-to-noise ratio. P3HT used for this study: 29.5 kg/mol, Đ of 1.92 , 96% H-T regioregularity (Merck).