

Supplementary Information

Three methylated quaterthiophene (QT) species were synthesized: 3,3''-dimethyl-quaterthiophene (3,3''dMQT), 4',3''-dimethyl-quaterthiophene (4',3''dMQT), and 3,4',3'',3'''-tetramethyl-quaterthiophene (3,4',3'',3'''tMQT) according to previous literature preps.^{60,73} The UV-vis absorption maxima associated with each of these methylated species were compared to unmethylated QT's UV-vis spectra (see supplementary Figure 1). In agreement with published studies, 3,3''dMQT was found to have a UV-vis spectra most similar to unmethylated QT, where as 4',3''dMQT and 3,4',3'',3'''tMQT both demonstrated blue-shifted absorption maxima. Therefore, 3,3''dMQT was selected for incorporation into QAPE because out of the three methylated QTs explored it was considered to be the most electroactive based on the principle that a compound's UV-vis absorption maximum correlates with its band gap energy.

