

Supporting Information for:

Surface Polymerization of (3,4-ethylenedioxythiophene) Probed by in situ Scanning Tunneling Microscopy on Au (111) in Ionic liquids

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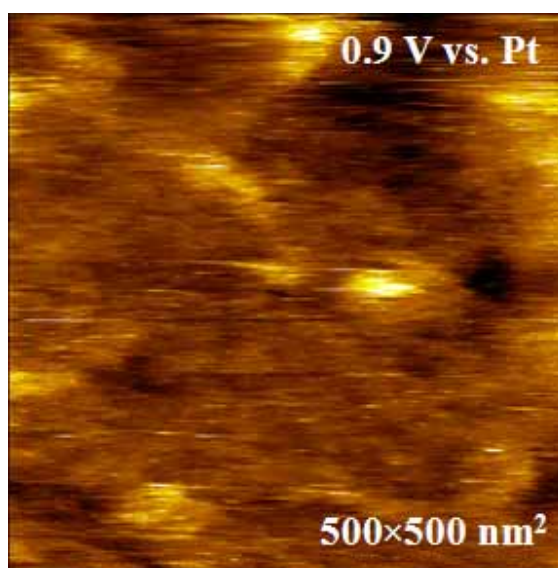


Figure S1: In situ STM image of PEDOT obtained in [HMIm]FAP at +0.9V vs. Pt-quasi-reference electrode. The image illustrates fully covered surface with PEDOT and that it can not be probed further and subsequently the STM tip crashes.

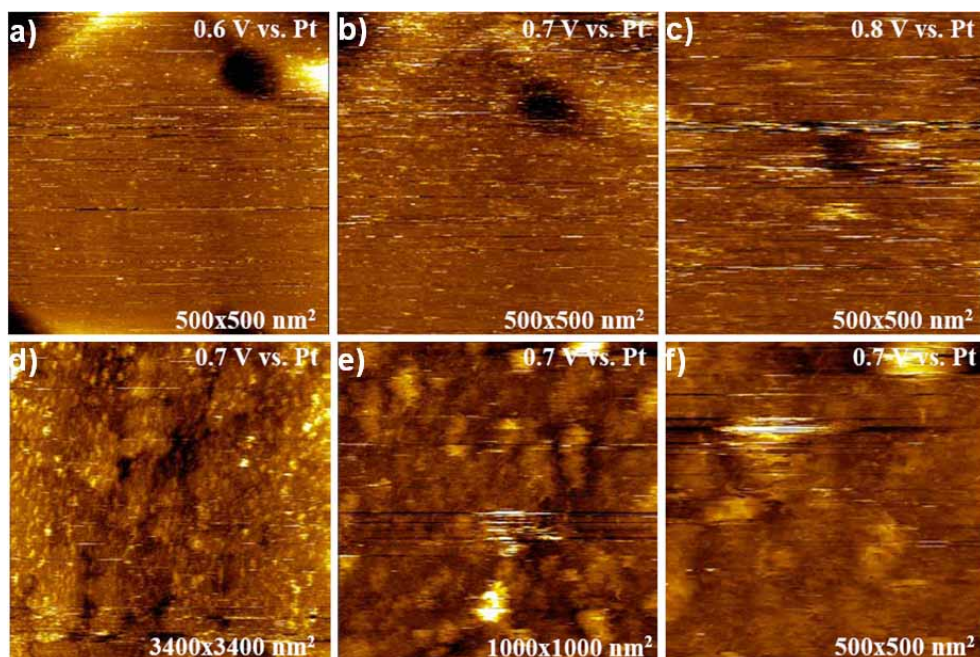


Figure S2: In situ growth of PEDOT as observed from STM on the application of different electrode potential using [EMIm]TFSF ionic liquids.

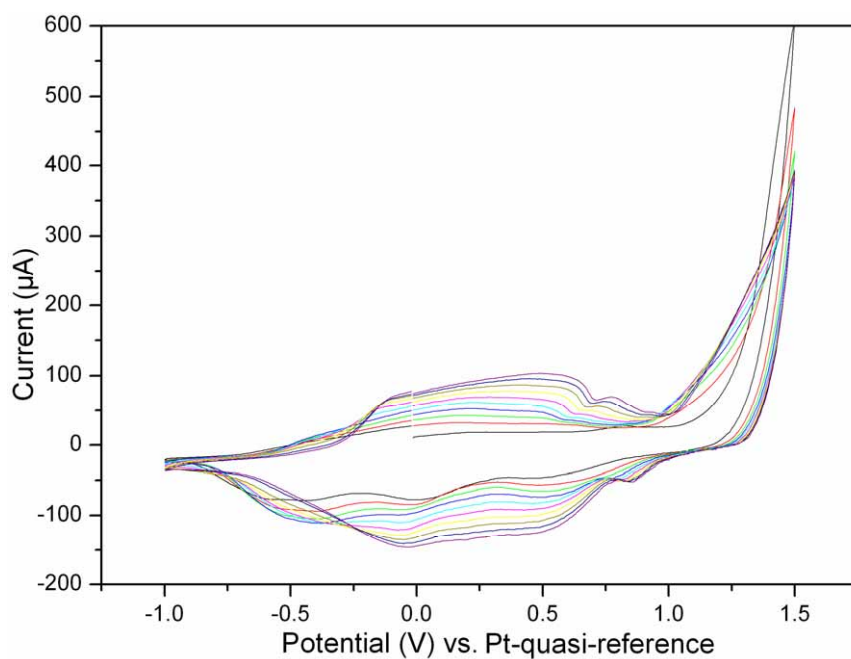


Figure S3: Growth profile of PEDOT recorded at 20mV/sec on Au electrode in [EMIm]TFSF containing 0.01 M EDOT.

Redox behavior of PEDOT in [HMIm]FAP

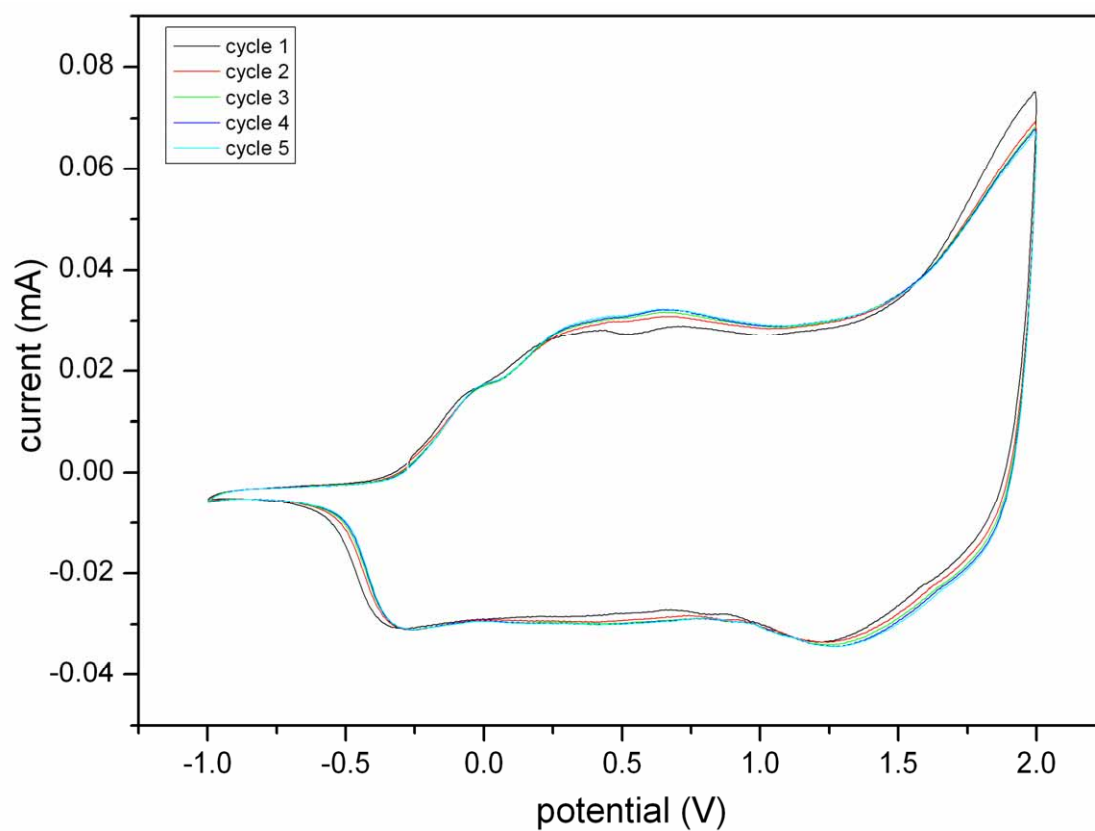


Figure S4: Cyclic voltammograms of PEDOT in [HMIm]FAP on Au electrode at a scan rate of 20 mV/sec in a range of -1 to +2 V. The voltammograms illustrates reproducibility of the synthesized PEDOT with high catalytic activity.

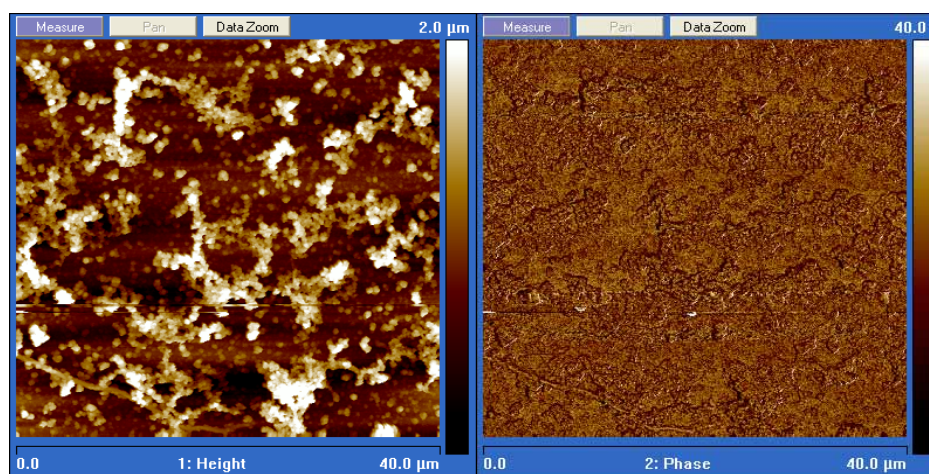


Figure S5: SFM microscopy, topography image (left) and phase (right) at a larger scale, illustrating the hierarchical growth of PEDOT in [HMIIm]FAP.