

## Electronic Supplementary Information:

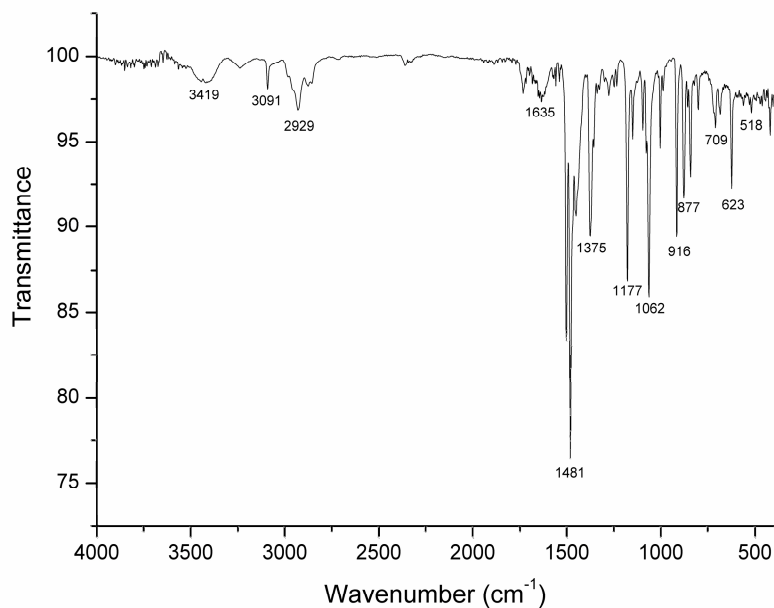
### A Neutral State Green Polymer with Superior Transmissive Light Blue Oxidized State

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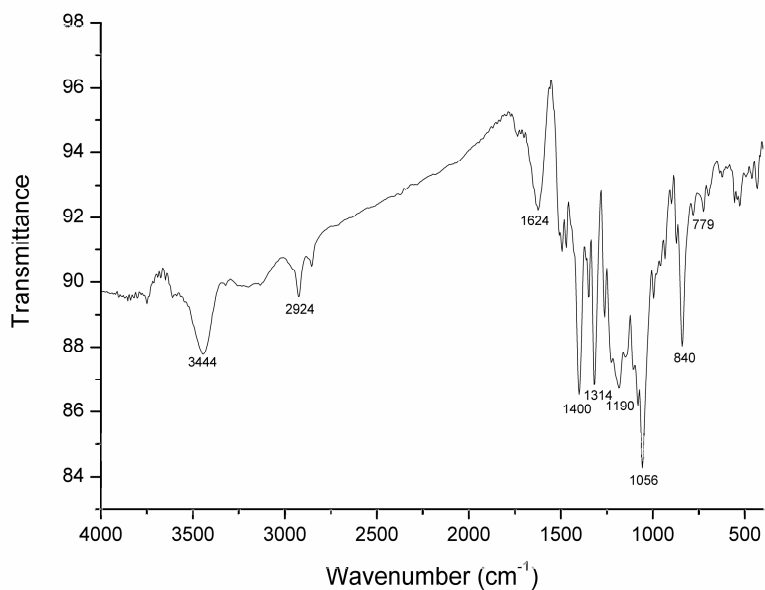
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#### 1) FTIR



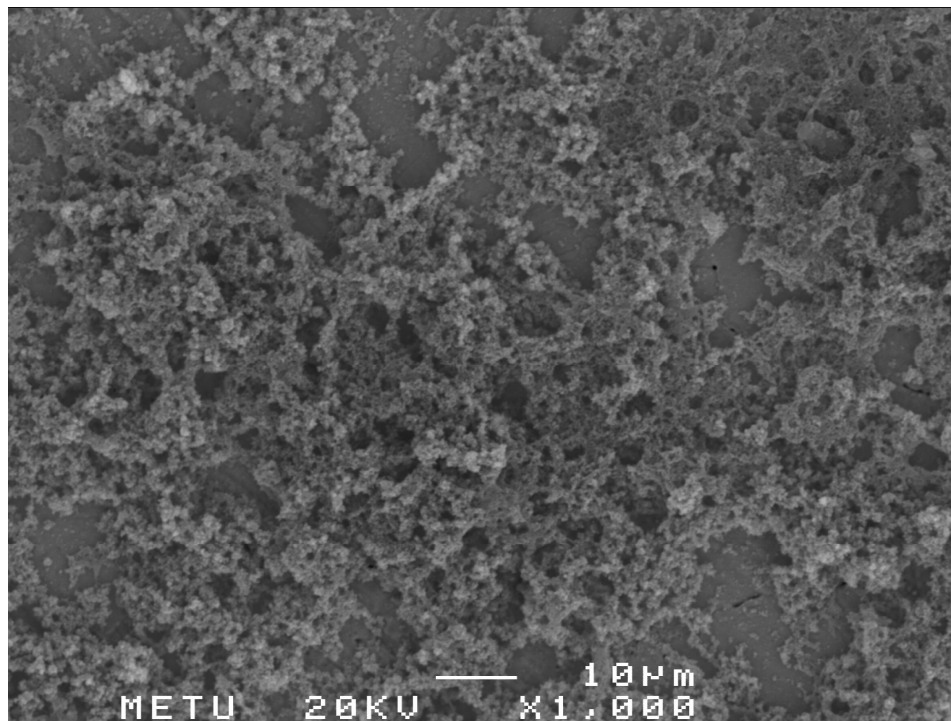
ESI-Fig 1. FT-IR spectrum of the monomer BDT.



ESI-Fig 2. FT-IR spectrum of the polymer PBBD.

\*All the corresponding IR peaks related to the structures of the monomer and polymer were determined. Due to the polymerization the related C-H peaks of the EDOT moieties completely disappeared in the IR spectrum of the polymer. ( $3100, 877\text{ cm}^{-1}$ ).

## 2) SEM



ESI-Fig 3. Scanning electron micrograph of the polymer coated at 75 mV/s in 0.1 M TBAPF<sub>6</sub>/DCM on Pt electrode.