

Synthesis and characterization of EDOT oligomers without polymer surfactants

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Poly(3,4-ethylenedioxythiophene) (PEDOT) is a well-known conductive polymer for its high conductivity when complexed with acids. However, PEDOT itself is insoluble, and therefore its applications are limited in a pristine form. To circumvent this challenge, we focused on oligomeric form of the molecule. In this work, we investigated synthesis and characterization of ethylenedioxythiophene (EDOT) oligomers. Oxidative oligomerization was performed in common organic solvents without polymeric surfactants. The oligomers can be processed with organic solvents such as methylene chloride. The properties of oligomers were investigated by NMR, MALDI-TOF, UV/VIS, PL and electrical characterizations. We also tried the oligomer as an active component in organic transistors.