

Effect of molecular weight of pss on PEDOT:PSS synthesis and Characterization

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Poly(3,4-ethylenedioxythiophene) : poly(4-styrenesulfonic acid) (PEDOT:PSS) composites were synthesized by Fe³⁺-catalyzed oxidative polymerization, and were prepared high conducting films. We report the molecular weight effect of polymeric surfactant as PSS in PEDOT:PSS composite films. Molecular weights of PSS were controlled between 75,200 and 1,000,000. Each with a different molecular weight of the synthesized PEDOT: PSS solution was added DMSO solvent, and coated on glass substrate by bar coating method. Surface morphology of different samples was analyzed by AFM and SEM. Furthermore, Chemical structure of various composite samples was confirmed by FT-IR, RAMAN and XPS. The electrical conductive property of PSS controlled composite films were checked by Van der pauw and 4-point probe method.