

A study on the sulfuric acid treatment of Conductive PEDOT thin films using Vapor Phase Polymerization

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Currently as conducting polymer, poly(3,4-ethylenedioxythiophene), PEDOT has been investigated for applying in field of optoelectronic device. Herein, poly(3,4-ethylenedioxythiophene) (PEDOT) thin film was produced through Vapor Phase Polymerization (VPP) from 3,4-ethylenedioxythiophene (EDOT) as a monomer and Iron(III)-*p*-toluenesulfonate hexahydrate (FTS) as an oxidant. Produced PEDOT thin film was treated in order to induce crystallization of PEDOT structure and to eliminate remaining FTS by dipping in sulfuric acid solution for particular time. Electrical property of the VPP based PEDOT film was observed via effective treatment by sulfuric acid. Surface resistance of the VPP based PEDOT film showed drastically decrease as compared with pristine PEDOT film