

## ***Electronic Supplementary Information***

### **An Effect on Side Chain Position of D- $\pi$ -A-type Conjugated Polymers with sp<sup>2</sup>-Hybridized Orbital for Organic Photovoltaics**

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### 1. $^1\text{H-NMR}$ Spectrum of polymers

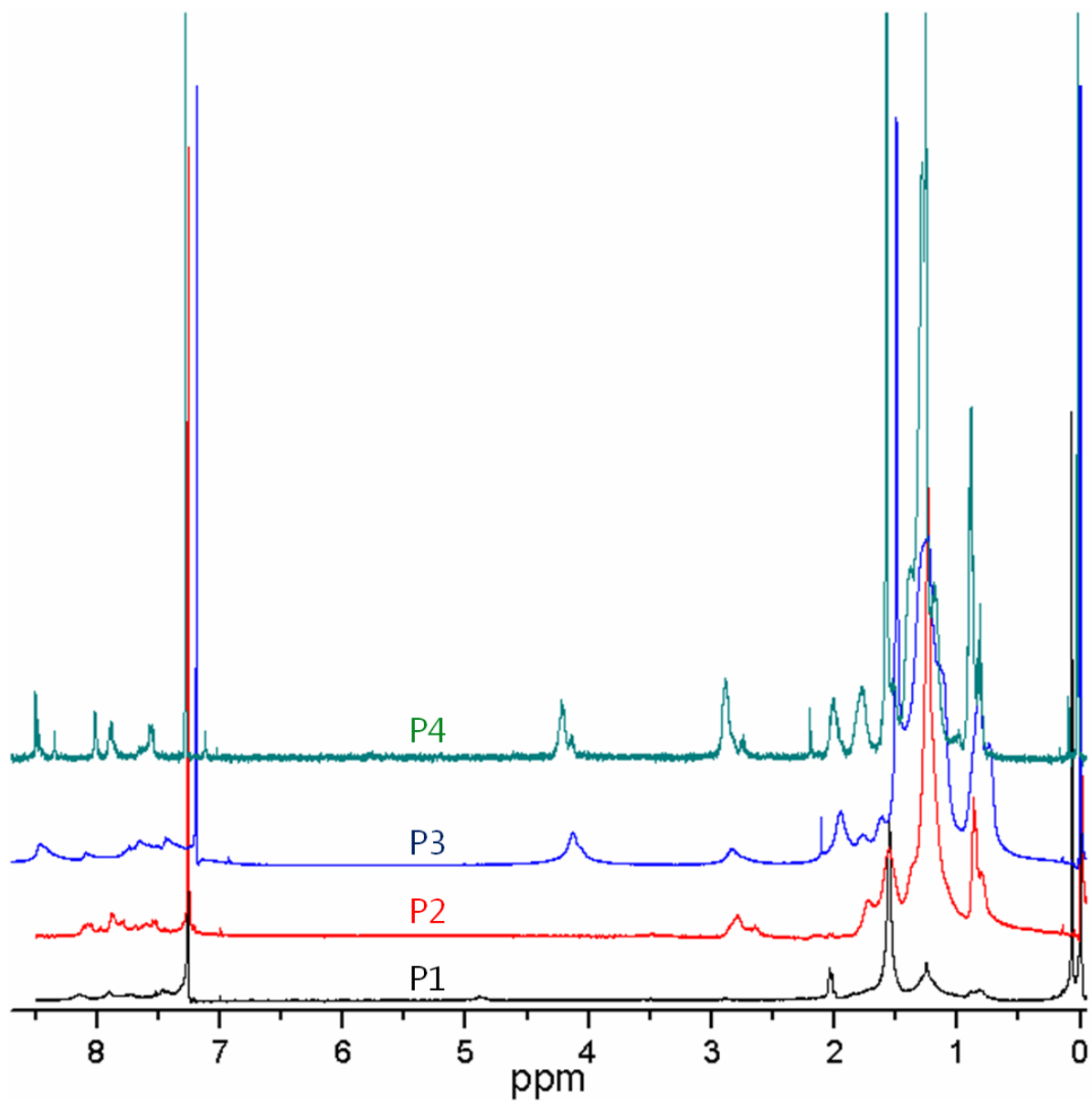


Figure S1.  $^1\text{H-NMR}$  Spectrum of polymers

## 2. Cyclic voltammograms of thin films of polymers

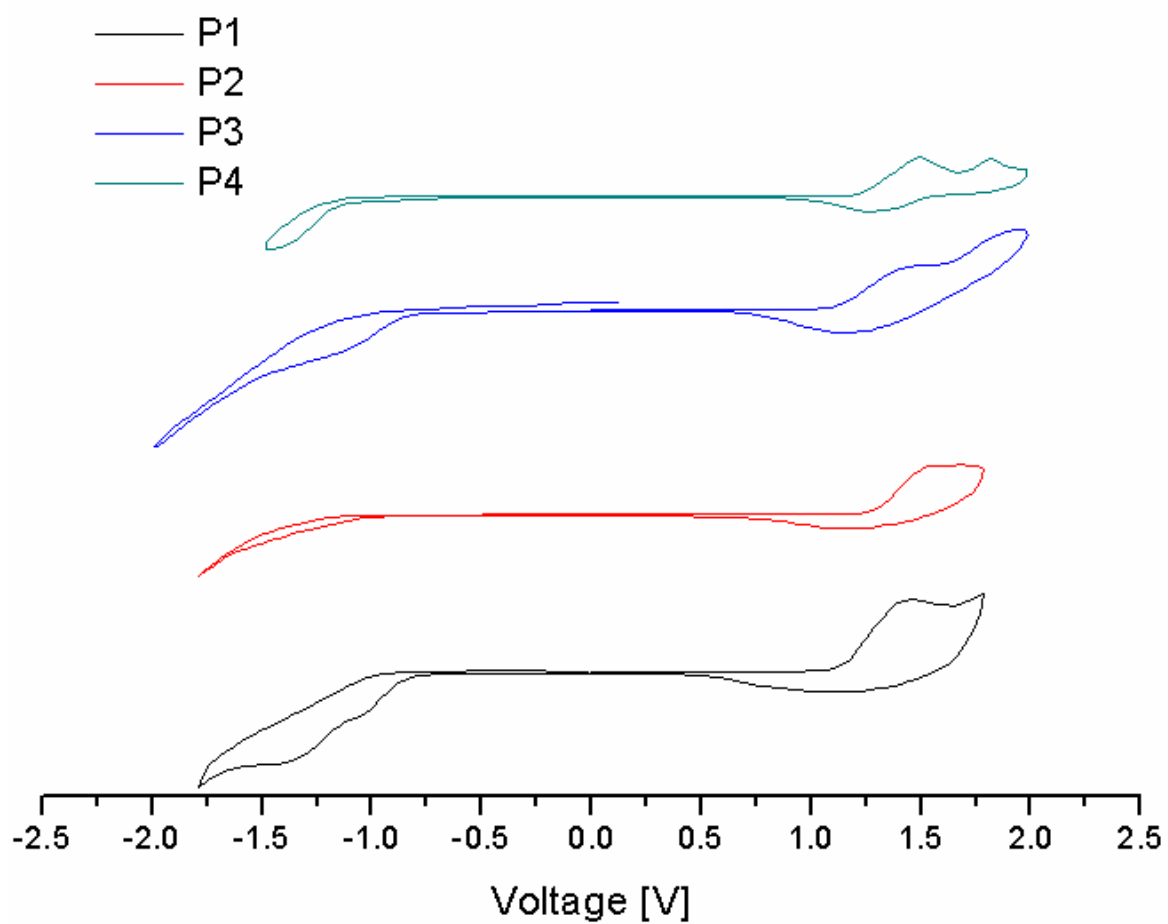
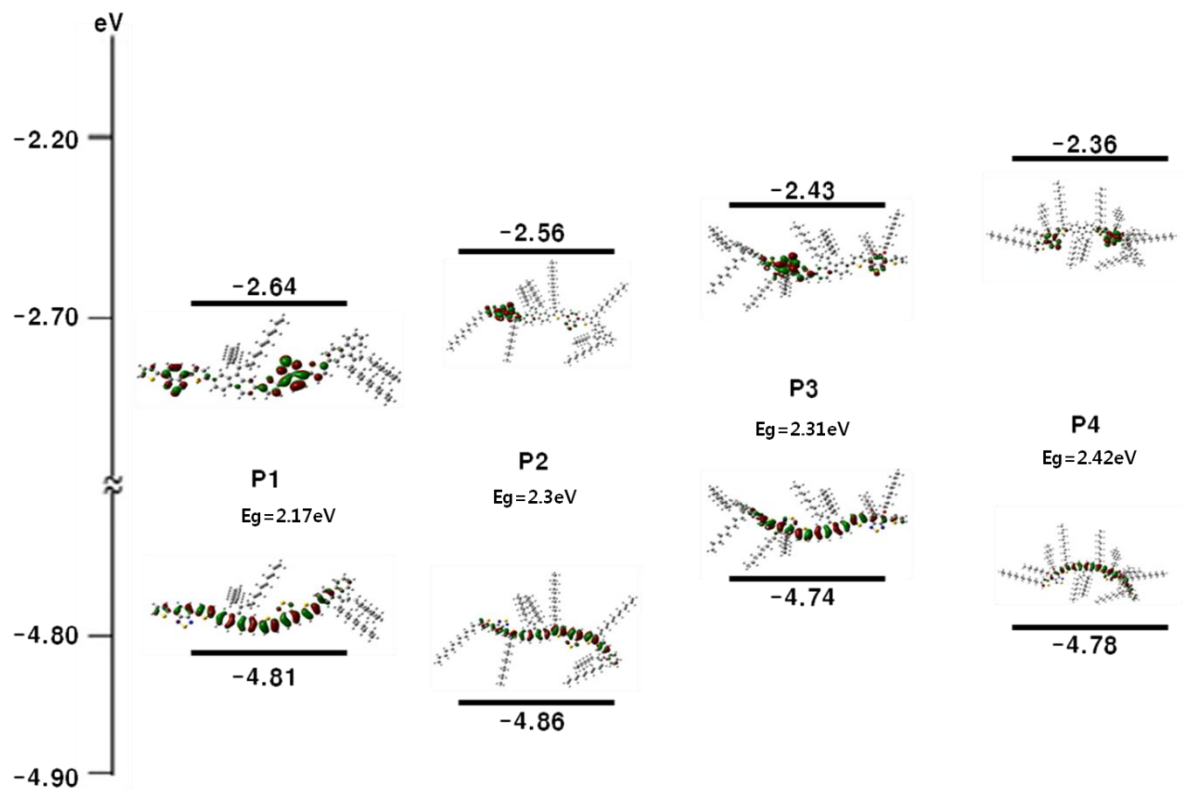


Figure S 2. Cyclic voltammograms of thin films of polymers

### 3. A comparison of polymer energy level used by Gaussian Calculations



**Figure S3.** A comparison of polymer energy level used by **Gaussian Calculations**

#### 4. Devices Fabrication and Characterization of polymers

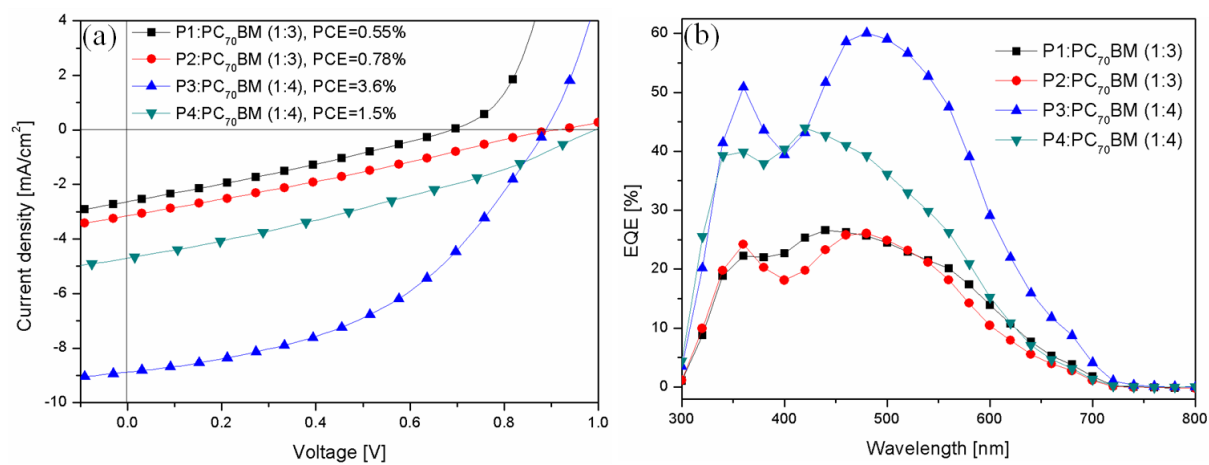


Figure S 4. Devices Fabrication and Characterization of polymers