

## 电化学法制备部分还原氧化石墨烯薄膜及其光电性能

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## Photoelectric Properties of Graphene Oxide Film Prepared with the Electrochemical Method Using Varying Levels of Reduction

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图 1(a)为 FTO 的线性扫描伏安曲线, FTO 的导带底位置为-0.76 eV (vs  $\text{Fc}^+/\text{Fc}$ ). 图 1(b)为 FTO 的 Mott-Schottky 曲线, 直线部分斜率为正说明 FTO 为  $n$  型半导体, FTO 的  $E_F$  计算结果为-1.05 eV (vs  $\text{Fc}^+/\text{Fc}$ ).

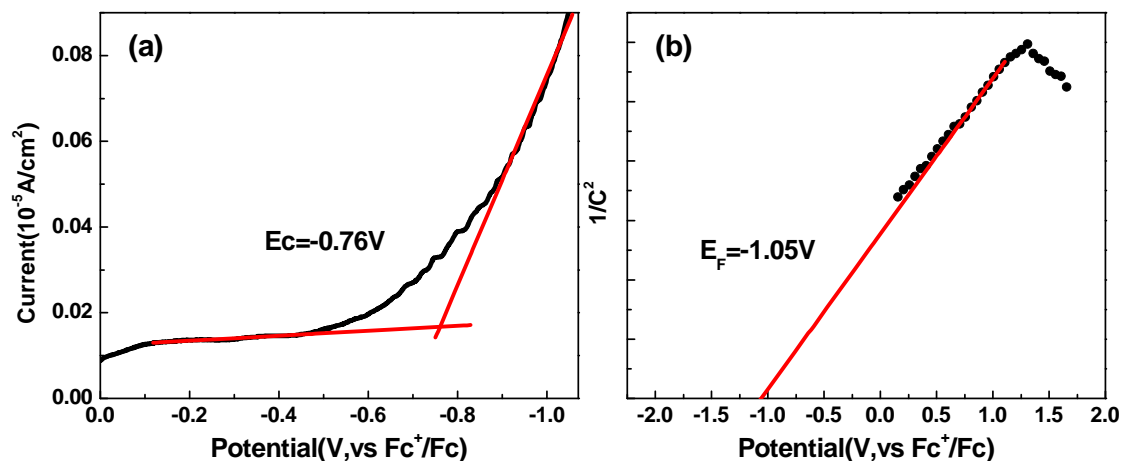


图 1 FTO 的线性扫描伏安曲线(a)和 Mott-Schottky 曲线(b)

Fig.1 (a) Cathodic linear potential scan for determining the conduction band edge of FTO films, (b) variation of capacitance with the applied potential presented in the Mott-Schottky relationship for FTO films

图 2 为 KI 饱和乙醇溶液的循环伏安图谱. KI 饱和乙醇溶液氧化峰位置为 0.46V (vs  $\text{Fc}^+/\text{Fc}$ ), 还原峰位置为 0.08 V (vs  $\text{Fc}^+/\text{Fc}$ ), 根据二者平均值可以计算得到 KI 饱和乙醇溶液中  $\text{I}_3^-/\text{I}^-$  的氧化还原电位为 0.27 V (vs  $\text{Fc}^+/\text{Fc}$ ).

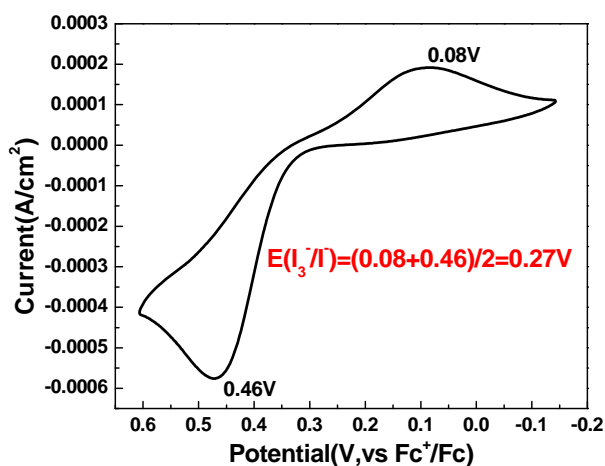


图 2 KI 饱和乙醇溶液的循环伏安图谱

Fig.2 Cyclic Voltammety spectra of KI saturated ethanol solution