

Conducting polymer coated on graphene sheet electrodes for lithium-sulfur batteries

이희윤, 김 석^{1,*}

부산대학교; ¹부산대학교 화학공학과

(seokkim@pusan.ac.kr*)

Lithium-sulfur battery has some problems which are short cycle life, low charging efficiency, poor safety, and a high self-discharge rate. To solve these issues, we introduce new kinds of cathode for lithium-sulfur batteries. This paper report a cathode material of a graphene-sulfur film synthesized by coating conductive material (poly (diallyldimethylammonium chloride)), in order to improve the conductivity and to disperse sulfur on the PDDA coated graphene sheet uniformly. We present more electrochemically enhanced cathode by using PDDA coated graphene sheet-sulfur composites which was made by using CS₂ solvent. Materials characterization was investigated by scanning electron microscopy (SEM), transmission electron microscopy (TEM), differential scanning calorimeter (DSC), thermogravimetric analysis (TGA). The electrochemical characterization was investigated by cyclic voltammetry (CV). We could confirm PDDA coated graphene sheet-sulfur composite electrode had superior current density than other samples.