

Polymer membrane electrolytes containing redox shuttles for facile fabrication of high performance dye-sensitized solar cells

강문성[†], 김유진, 김혜린, 박진수

상명대학교 환경공학과

(solar@smu.ac.kr[†])

There has been much attention towards dye-sensitized solar cells (DSSCs) for the past decades due to their attractive features such as high energy conversion efficiency of about 12% and low energy production costs. In this work, we report polymer membrane electrolytes containing various redox shuttles (e.g. I^-/I_3^- and cobalt complexes etc.), exhibiting high ion conductivity and excellent dimensional stability for facile fabrication of high performance DSSCs. The porous substrates have been successfully prepared via conventional phase inversion technique and their properties have controlled by varying the polymer composition and phase separation conditions. Moreover, the optimal electrolyte compositions were systematically investigated through various electrochemical characterizations.

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