

**Supporting Information for**

**Enhanced Performance of Dye–Sensitized Solar Cell with an**

**Amphiphilic Polymer–Gelled Ionic Liquid Electrolyte**

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# Electronic Supporting Information

## Experimental

### Synthesis of poly(oxyethylene)–segmented amide–imide (POEM)

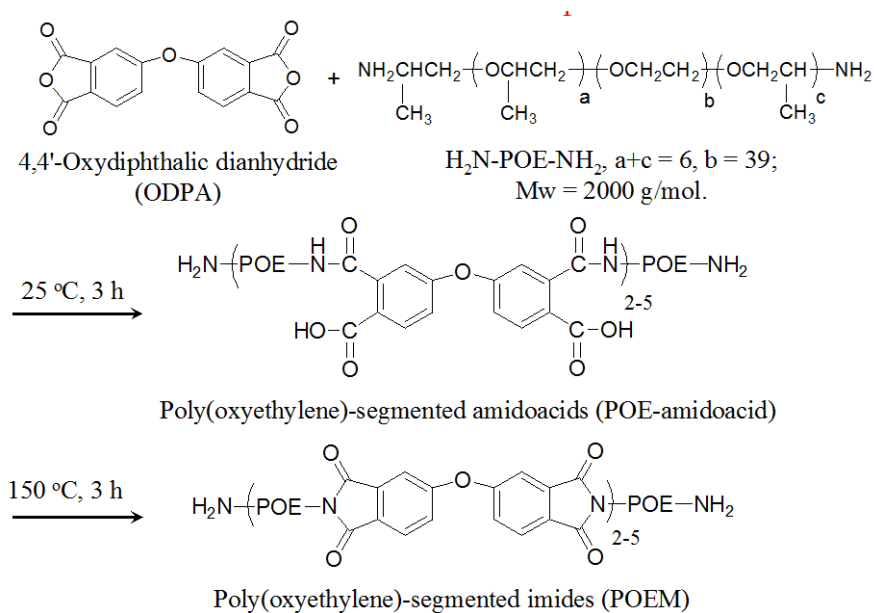
The POEM polymer was synthesized through the reaction between POE2000 and ODPA at a molar ratio of 6:5, by the procedure described below. POE2000 (10.00 g, 0.005 mol) in THF (15 ml) was poured into a 100 ml three-necked, round-bottomed flask, equipped with a magnetic stirrer, nitrogen inlet–outlet lines, and a thermometer. A solution of ODPA anhydride (1.29 g, 0.004 mol) in THF (10 ml) was added to the reactor through a funnel in a drop-wise manner. During the addition, the mixture was stirred vigorously and the reactor was maintained at 150 °C for 3 h. The product mixture was subjected to rotary evaporation under a reduced pressure and was recovered as a yellowish waxy solid. The synthesis of POEM is represented in Scheme S1.

**Scheme:**

**Scheme S1** Synthesis of poly(oxyethylene)-segmented amide-imide (POEM) by two-step process of forming POE-amidoacids and POEM at elevated temperature.

**Figure Captions:**

**Figure S1** The cell efficiencies of QSS-DSSCs with various weight percentage of POEM added in RTIL electrolyte.



**Scheme S1**

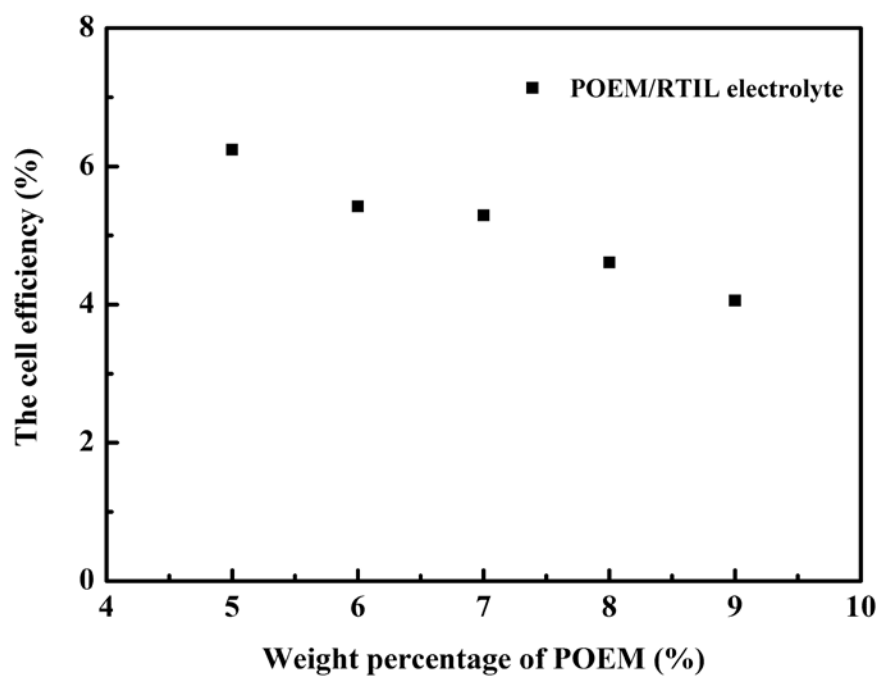


Figure S1