**Supporting Information.**



**Figure S1**. (a) An equivalent circuit for the EIS measurement. (b) The fitted results of the Nyquist plots.



**Figure S2**. (a) Comparison of the as-synthesized CoSe2, and CoSe2@RG with the standard data of orthorhombic CoSe2. SEM images of (b) CoSe2, and (c) CoSe2@RGO



**Figure S3**. Photovoltaic parameters of dye-sensitized solar cells fabricated with counter electrodes of the CoSe2 (black), and CoSe2@RGO (RED) according to the loading amount.