**Improved performance of highly stable ZnO/Eosin Yellow based dye-sensitized solar cell with different I-/I3- coupled electrolytes concentration**

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A highly stable improved ZnO/Eosin Yellow dye-sensitized solar cells (DSSC) are prepared using different concentrations of $I^{-}/I\_{3}^{-}$ electrolyte solution. Iodide electrolyte solution has been prepared to dissolve 0.127 g Iodine ($I\_{2}$) in 10 mL of ethylene glycol and add 0.83 g Potassium Iodide (KI). The cell shows highest conversion efficiency $(η)$ 1.93% with open-circuit voltage ($V\_{oc})$ and short-circuit current ($J\_{sc})$1.5 V and 0.0924 mA/cm2, respectively. The lower concentration of $I^{-}$ electrolyte in same structure shows 1.73% efficiency. The open circuit voltage and short circuit current for this case is 0.21 V and 2.94 mA/cm2. Eosin Y dye sensitized solar cell containing Iodine and triiodide electrolyte solution reduces the rate of recombination and improves cell performance.

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