



Comparison of photocurrent enhancement of p-CuSCN / n- Cu₂O junction photo electrode in photo electrochemical cells prepared using KI and FeSO₄ electrolytes

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A well cleaned copper plate (4cm x 4cm) was immersed in 10⁻³M CuSCN, 10⁻³M CH₃COOH and 10⁻³ M Na₂SO₄ solution to deposit a p-CuSCN layer. n-Cu₂O layer was deposited by boiling a copper plate in 10⁻⁴M CuSO₄ solution. Duration of the immersion time and boiling time controlled the thickness of the p-CuSCN and n-Cu₂O layers, respectively.

A solid state photovoltaic cell was made by depositing n-Cu₂O layer on a p-CuSCN layer. Photocurrent enhancement is due to the efficient charge separation processes produced by the electric field in the junction.

Preparation of junction photo electrodes, time development of the photocurrent, I-V characteristics and photocurrent action spectra are presented to explain the comparison of photocurrent enhancement of p-CuSCN / n-Cu₂O junction photo electrodes in photo electrochemical cells prepared using KI and FeSO₄ electrolytes.

Key words: Photo electrochemical cells, Photocurrent, photo electrode, Photocurrent action spectra