

Abstract Submitted  
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**Electrodeposition of CoS on ITO substrates for the counter electrode of dye-sensitized solar cells<sup>1</sup>** TAMIKO MASUDA, University of British Columbia, Dalhousie University, HAFEEZ ANWAR, IAN HILL, Dalhousie University — Dye-sensitized solar cells (DSSCs) provide a relatively low-cost option for harvesting solar energy. The counter electrode (CE) of a DSSC incorporates a catalyst layer, which plays a vital role in the cell cycle by reducing the triiodide ions in the electrolyte. In this study, CoS is studied as a possible replacement for platinum, the standard catalyst [1]. This is relevant because replacing Pt with CoS would reduce production barriers that are associated with cost and supply. Using a two-electrode “dummy” flow cell setup the effects of delay times, scan rates and bias voltages in electrochemical impedance spectroscopy (EIS) and cyclic voltammetry (CV) measurements were studied. Preliminary results on CoS samples are taken and indicate charge transfer resistance values an order of magnitude higher than the Pt reference. Future steps to improve the CoS deposition process to optimize charge transfer will be discussed.

[1] Wang, M.; Anghel, A.M.; Marsan, B.; Ha, N.C.; Pootrakulchote, N.; Zakeeruddin, S.M.; Graetzel, M. *J. Am. Chem. Soc.* 2009, 131, 15976.

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