

Abstract Submitted
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Properties of CuO Deposited by Spray Pyrolysis for Photovoltaics MATTHEW BELL, CARY TIPPETTS, ROBERT DAVIS, RICHARD VANFLEET, BYU — We are studying the possibility of CuO as the main absorption material for a photovoltaic cell. CuO has a reported band gap of 2.1 eV, which is optimal for photovoltaics. CuO is an inexpensive material and since it is an oxide, it is stable in an oxygen rich environment. However, CuO has poor mobility, making it difficult for electrons to be carried away. We are attempting to overcome this barrier by depositing the CuO on a three dimensional surface, making it thick enough vertically to absorb photons, but thin enough horizontally for the electrons to escape. Spray pyrolysis is a promising choice because of its affordability and reported reliability. We are spraying $\text{Cu}(\text{NO}_3)_2$ dissolved in distilled water on a heated substrate. We are testing spray pyrolysis's ability to cover three dimensional figures, and testing the properties of the CuO deposited in this method.

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