

Abstract Submitted
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Fabrication of Dye Sensitized Solar Cells Using Fe-, Mn- and Co-oxyhydroxide nanocrystals in ferritin as the dye ALESSANDRO PEREGO, Brigham Young Univ - Provo — This project is based on the study published by the Colton and Watt group at BYU in the journal Nanotechnology. In this paper, it has been theorized that a solar cell fabricated with different nanocrystals, synthesized inside the protein ferritin, is capable of harvesting different wavelengths of the solar spectrum. This therefore, makes it possible to increase the efficiency of the cell up to 44.9%. This presentation will show the fabrication and characterization of three dye-sensitized solar cells using iron, manganese, and cobalt oxyhydroxide nanocrystals within ferritin as the dye. The open current voltage obtainable from these three nanocrystals was respectively 307 mV, 435 mV and 552 mV. Because those measurements exceeded the voltage of our anthocyanin based dye sensitized solar cells solar cell control (182mV), we believe that ferritin possesses the necessary properties that can be used for the development of future third generation solar cells.

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