Exploring Electron Transport Materials for Perovskite Solar Cells

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Abstract: At the forefront of today's photovoltaic research are Perovskite Solar Cells (PSCs). Currently, the materials of choice for the electron transport layer are precious metals that are expensive to buy and require costly deposition methods. SnO2 is an emerging and highly researched alternative to the standard TiO2. However, both materials face unique challenges as electron transport layers like stability, hysteresis, and transparency. Herein, TiO2 and SnO2 will be used in combination to form the electron transport layer and mitigate the negative effects of both materials. The expected results are increased power conversion efficiency and ease of preparation for our combination cells as compared to the SnO2 and TiO2 baseline results.

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