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Origin of High Open-Circuit Voltage in Solid State Dye-Sensitized Solar Cells Employing Polymer Electrolyte

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Abstract

Herein, the energy level alignment and electron recombination kinetics in solid state dye-sensitized solar cells (DSCs) employing a solid polymer electrolyte (SPE) have been quantitatively characterized. In order to determine the microscopic origin of the enhanced characteristics in polymer electrolytes, we carried out an extensive study of the photovoltaic properties with respect to the electrolyte type and composition, including a liquid electrolyte (LE) and various salt types and concentrations. We observed a smaller downward shift in the

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