

Printed Monolithic Photovoltaic Interconnects

Maikel F.A.M. van Hest, Matthew S. Dabney, Vincent P. Bollinger, and Jeremy D. Fields, National Renewable Energy Laboratory (USA)

Abstract

Monolithic interconnects in photovoltaic modules connect adjacent cells in series, and are typically formed sequentially involving multiple deposition & scribing steps. Interconnect widths on order of about 500 μm every 10 mm result in about 5 % dead area, which does not contribute to power generation in an interconnected solar panel. This work introduces an

alternative interconnection method capable of producing interconnect widths less than 100 μm , which can be accomplished in a single pass after deposition of active layers and electrodes. This alternative method can be used for all types of thin film photovoltaics. Voltage addition using printed interconnects and ongoing efforts to optimize performance of modules with printed interconnect are discussed.