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Spray aerosol coating technique for manufacturing perovskite solar cells

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We have developed continuous spray coating techniques for manufacturing highly efficient flexible perovskite solar cells and modules. This includes electrospray¹ and megasonic spray coating system². The droplet size control was found to be important in making uniform and high crystalline perovskite layer¹. The megasonic spray coating system was sequentially designed for large-area and continuous perovskite layer coating². This system can grow perovskite film gradually and uniformly through repeated coating with precise control of the coating speed while consistently generating ultra-fine, homogeneous perovskite precursor droplets ($< 10 \mu\text{m}$) in high quantity. From this we made 6cm x 6cm flexible perovskite solar modules after laser scribing. The module consists of 14 line cells and shows power conversion efficiency of 15.09%.

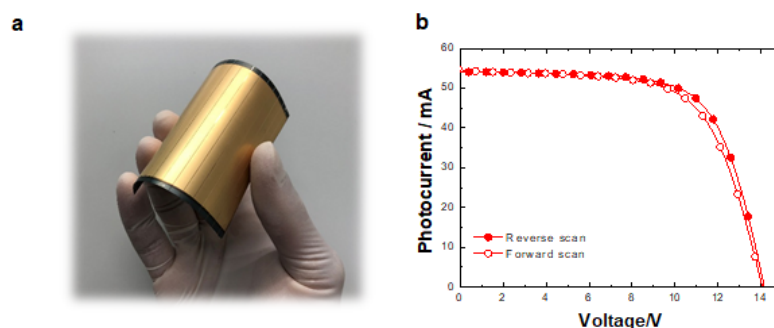


Fig. 1 (a) Photograph and (b) J-V curves of flexible perovskite solar module with size of 36 cm².

참고문헌

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