Perovskite Solar Cell

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Since the first report on the 9.7% efficient and 500 h-stable solid-state perovskite solar cell (PSC) in 2012, perovskite photovoltaics has been surged swiftly due to high power conversion efficiency (PCE) obtainable via facile fabrication procedure. As a result, a PCE of 25.2% was recorded in 2019. According to Web of Science, number of publications on PSCs increases exponentially since 2012, leading to the accumulated publications of more than 17,500 as of August 2020, which indicates that PSC is considered as promising next-generation photovoltaics. High photovoltaic performance was realized by compositional engineering, device architecture and coating methodologies for the past 10 years. Toward theoretical efficiency over 30% and commercialization of PSC, further studies on recombination and developments of scalable technologies are required for next 10 years. In this talk, history, recent progress and perspective of PSCs will be presented