

Preparation of metal oxide nanostructures via low-temperature process for highly efficient and flexible perovskite solar cells

박민우[†]
숙명여자대학교
(mwpark@sm.ac.kr[†])

Perovskite solar cells (PSCs) have been considered a promising photovoltaic device due to their excellent power conversion efficiency, mechanical flexibility and low-cost fabricating process. In particular, flexible PSCs have required the rational design of interlayers, which has been a key to attaining the high device performance on polymeric substrates. The promising candidates of an electron selective layer in low-temperature process are metal oxides and organic semiconductors. In this talk, we introduce the development of a novel oxide mesostructure-titanium metal-organic frameworks and TiO₂ nanocrystals. This class of materials provides the high mechanical flexibility of PSCs with exhibiting the impressive power conversion efficiencies over 16%.