Abstract

In this era of technologies, sustainable energy sources are being developed to exterminate the remote conventional energy sources, acting as the major contributors of global warming and environmental pollution. So, innovative developments in the area of grid storage capacity and fuel-adaptable distributed-energy generation are the dire need of the hour. Carbon free materials are entitled to deliver high energy, power density and long shelf life in energy conversion and storage. Herein, we describe the hydrothermally synthesized nanocomposite of Iron (Fe), Silver (Ag) and Tungsten (W). For OER the as synthesized nanocomposite FeAgW exhibited an overpotential of 470 mV at a current density of 120 $\mu A\ cm^{-2}$ with a Tafel slope of 369 mv dec^{-1}. Further combinations of novel transition metals with FeAgW are on the way to engineer band gap for improved optoelectronics and water splitting.