

1-D ZnO/ZnCr MMO Photoanode to enhance Photoelectrochemical Water Oxidation activity under visible light irradiation

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We reported new synthesis method for preparation of layered double hydroxide (LDH) and developed ZnCr MMO photoanode before. It showed PEC water oxidation activity under visible light irradiation. However it had low activity. To improve Photoelectrochemical activity, 1-D structured ZnO/ZnCr MMO photoanode were developed. 1-D ZnO/ZnCr MMO core-shell structure were prepared by electrodeposition of LDH and calcination process. As a result, ZnO/ZnCr MMO could utilize the visible light irradiation. Furthermore 1-D ZnO/ZnCr MMO composite photoanode largely enhanced photoelectrochemical water oxidation activity with one dimensional morphology and appropriate band position to separate electrons and holes.