

ZnO/ZnCrLDH heterostructure with Enhanced Photoelectrochemical Water Oxidation Activity

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As an photoelectrochemical water oxidation electrode, ZnO/ZnCrLDH heterostructured photoanode were prepared by hydrothermal and electrodeposition method. ZnO/ZnCrLDH heterojunction had core shell structure after synthesis. ZnO/ZnCrLDH heterojunction photoanode enhanced photoelectrochemical water oxidation activity under simulated solar light (100 mW cm^{-2}) irradiation. ZnO/ZnCrLDH showed 1.66 times higher photocurrent density ($113 \mu\text{A cm}^{-2}$) compare to pristine ZnO photoanode ($68 \mu\text{A cm}^{-2}$). Increased photocurrent density was affected by band structure of ZnO and ZnCrLDH, which was suitable for separating photogenerated electrons and holes.

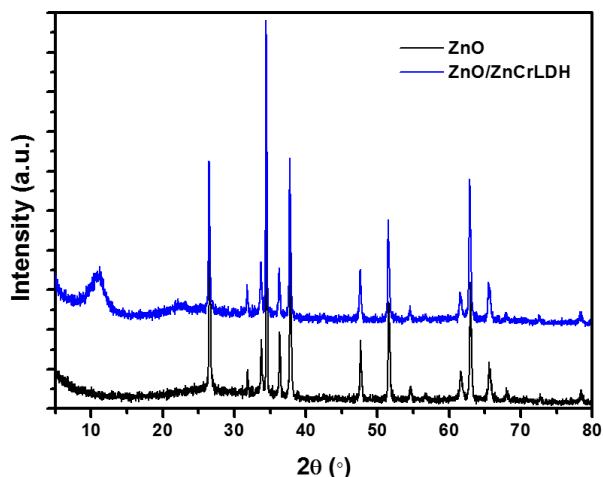


Fig.1 XRD patterns of ZnO and ZnO/ZnCrLDH

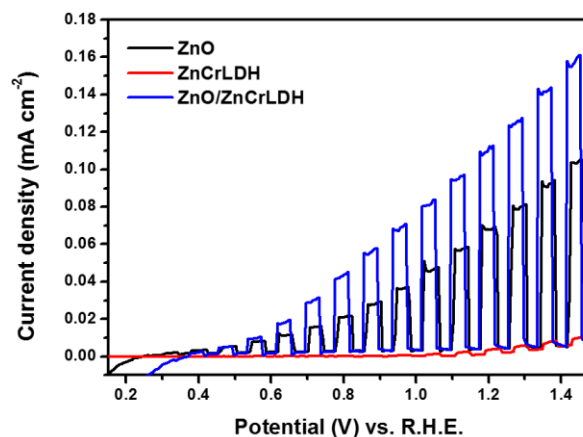


Fig.2 Photocurrent density of ZnO, ZnCrLDH, ZnO/ZnCrLDH under 1 sun condition.

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