

Supplementary information

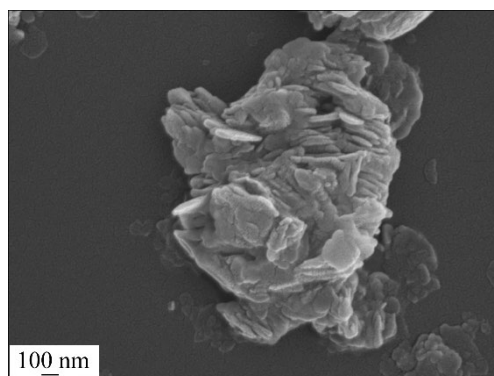


Figure S1 The SEM images of Al-PMOF

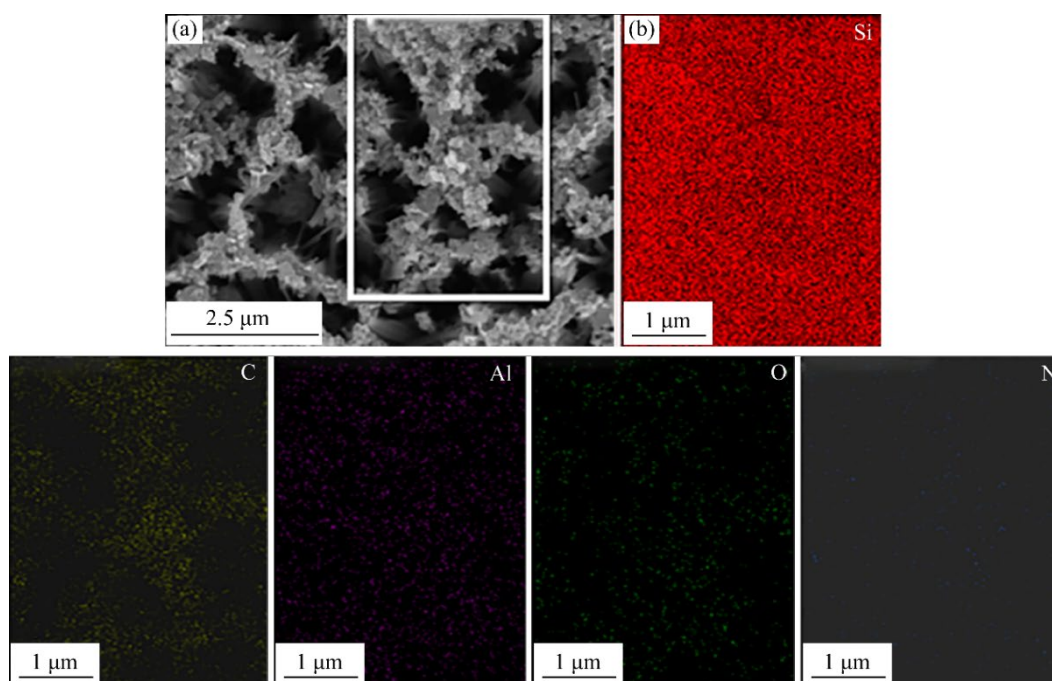


Figure S2 (a) The selected SEM image of Si/Al-PMOF photocathode; (b) The corresponding EDS elemental maps

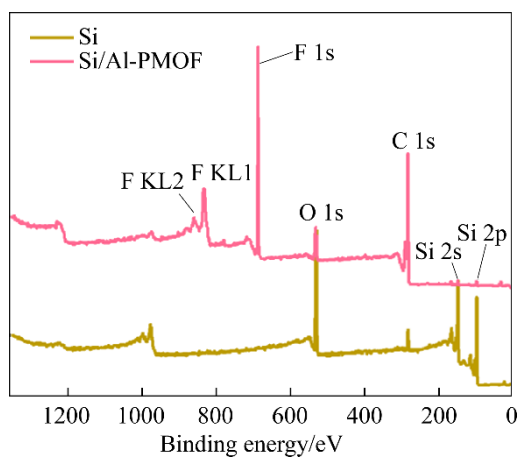


Figure S3 XPS survey of Si and Si/Al-PMOF photocathodes

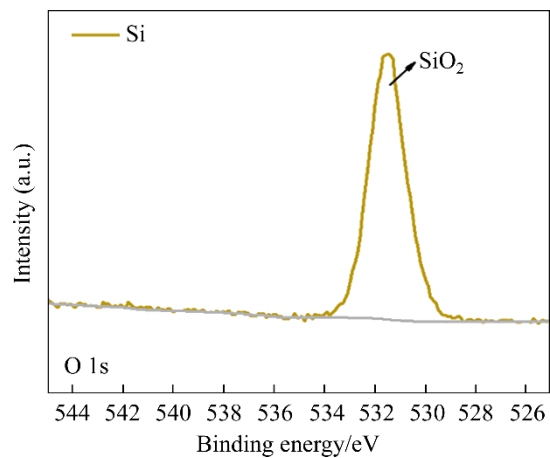


Figure S4 The high-resolution XPS spectrum of O 1s for Si photocathode

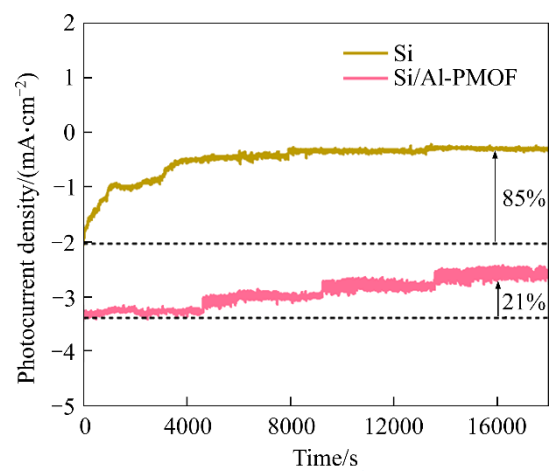


Figure S5 The stability curves of Si and Si/Al-PMOF photocathodes