Electronic Supplementary Material (ESI) for Nanoscale.

Ferroelectric-assisted Charge Carrier Separation over Bi_2MoO_6 Nanosheets for Photocatalytic dye degradation

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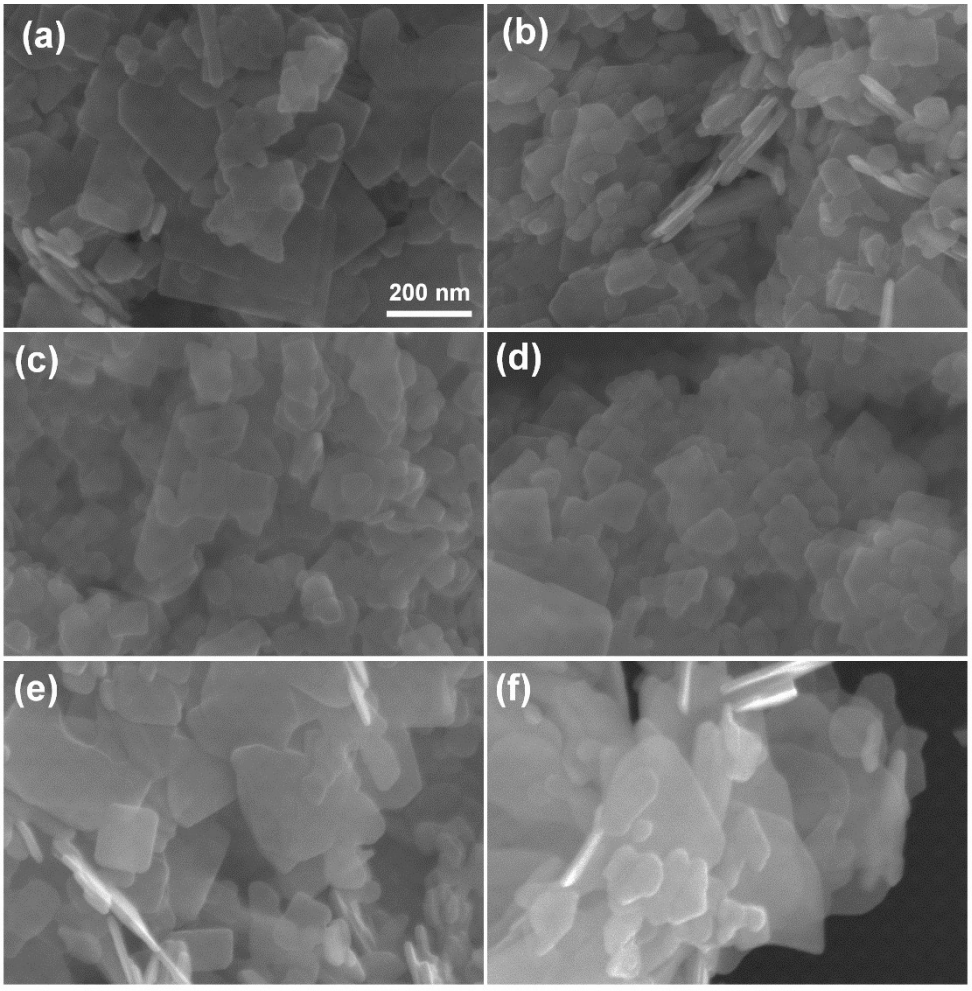

Fig.S1 SEM image of (a) BMO nanosheets before and (b) after degradation, (c) polarized BMO before and (d) after degradation, and (e) annealed BMO before and (f) after degradation

The SEM image of different BMO before and after photocatalytic degradation are shown in Fig.S1. The morphology of different samples maintain a characteristic 2D structure whether before and after the photocatalytic reaction, indicating the stability of the microstructure.

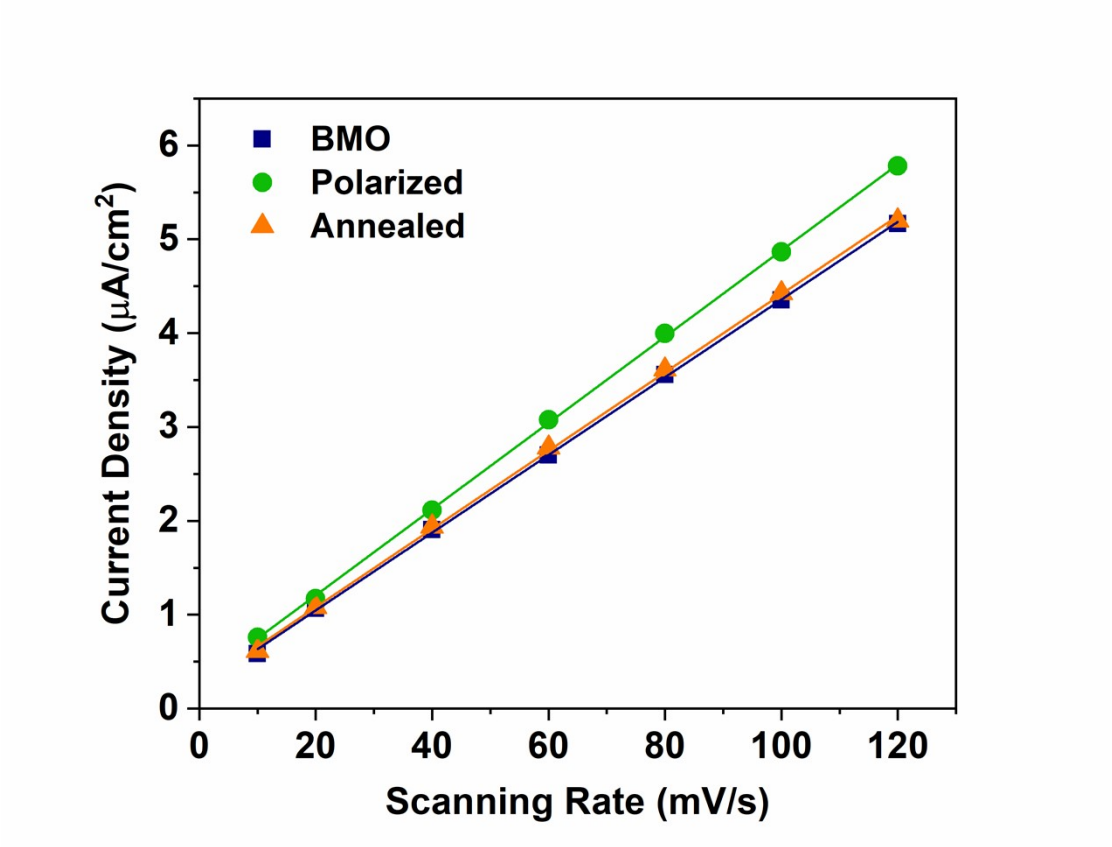

Fig.S2 ECSA of different BMO samples.

In ECSA test, BMO samples with different treatment are mixed with Nafion and ethanol, ultrasonic dispersed for 30min, then dropped onto carbon paper to form the working electrode. Fig.S2 shows that the electrochemical surface area of BMO with different treatment differs little, indicating that the microstructure maintains stable after polarization and annealing treatment. However, the polarized sample possess a little larger ECSA compared to the other samples, and this may be caused by that under the strong static electric field during corona poling treatment, the segregated nanosheets may be separated during this strong electric field, leading to a slight increase in ECSA.

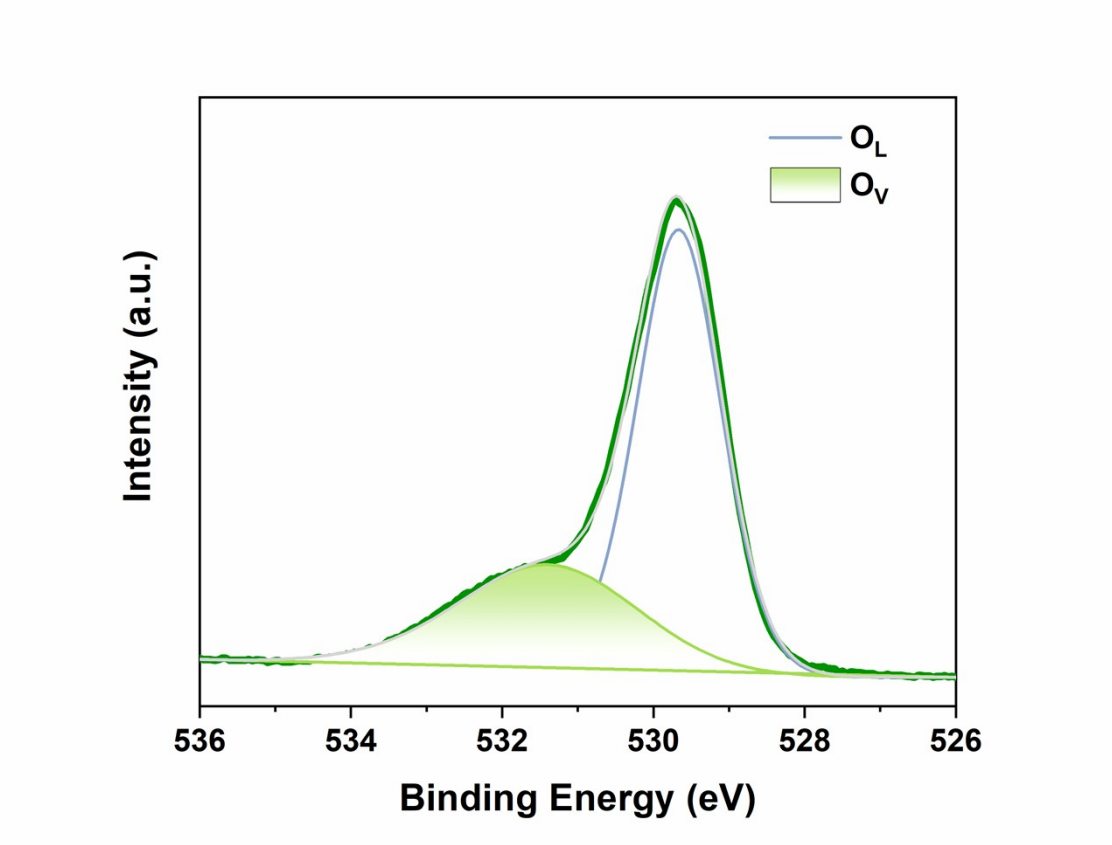

Fig. S3 The O 1s peak of polarized BMO after photocatalytic test

The raw and fitted O 1s peak of polarized BMO after photocatalytic degradation is shown in Fig.S3. The peak shape remains asymmetry and can be separated into O_V (representing oxygen vacancies) and O_L (representing lattice oxygen) peak, indicating the existence and stability of oxygen vacancies after degradation.