Enhanced photovoltaic effect in Bi$_2$FeMo$_{0.7}$Ni$_{0.3}$O$_6$ ferroelectric thin films by tuning the thickness

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Fig. S1 XRD pattern of the BFMNO thin film with $d = 700$ nm.
Fig. S2 (a) The $J$-$V$ characteristics of the BFMNO thin films with different thickness. (b) The thickness-dependent $J_{sc}$ and $V_{oc}$ of the thin films.

Fig. S3 The time dependence of photocurrent of BFMNO thin film (700 nm) before and after poling.

Fig. S4 (a) The $J$-$E$ measurements of the BFMNO thin film with $d = 700$ nm at different temperature. (b) The Schottky plots under negative bias voltage.
Fig. S5 The Schottky plots under negative bias voltage and Ohmic plots under positive bias voltage of the thin films with different thickness.

Fig. S6 The capacitance as the function of electric field for the BFMNO thin films.