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Piezoelectric polarization induced internal electric field to manipulate photoelectrochemical performance in Nd, Co co-doping $BiFeO_3$

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Supplemental Informations

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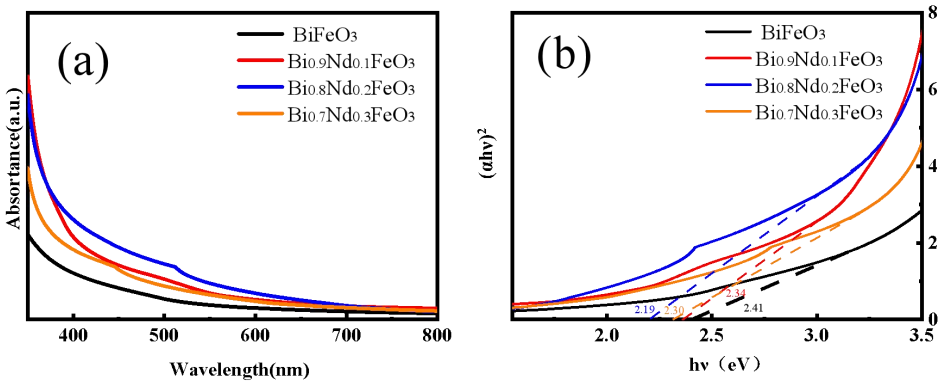

Fig. S1 UV-vis absorance spectra of (a) $Bi_{1-x}Nd_xFeO_3$ photoanodes, and (b) Tauc plots calculated from (a).

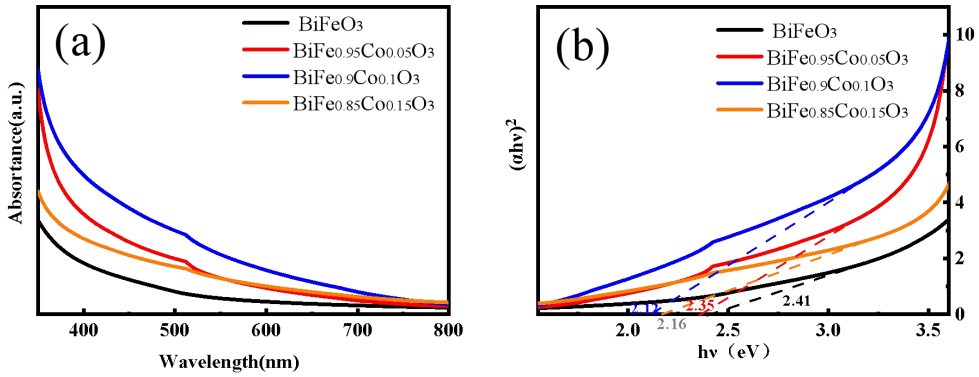

Fig. S2 UV-vis absorance spectra of (a) $BiFe_{1-x}Co_xO_3$ photoanodes, and (b) Tauc plots calculated from (a).

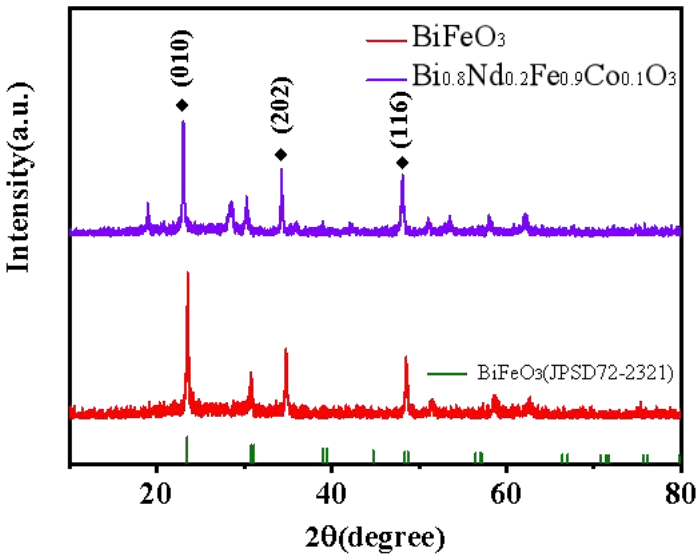

Fig. S3 The XRD patterns of $BiFeO_3$ and $Bi_{0.8}Nd_{0.2}Fe_{0.9}Co_{0.1}O_3$.

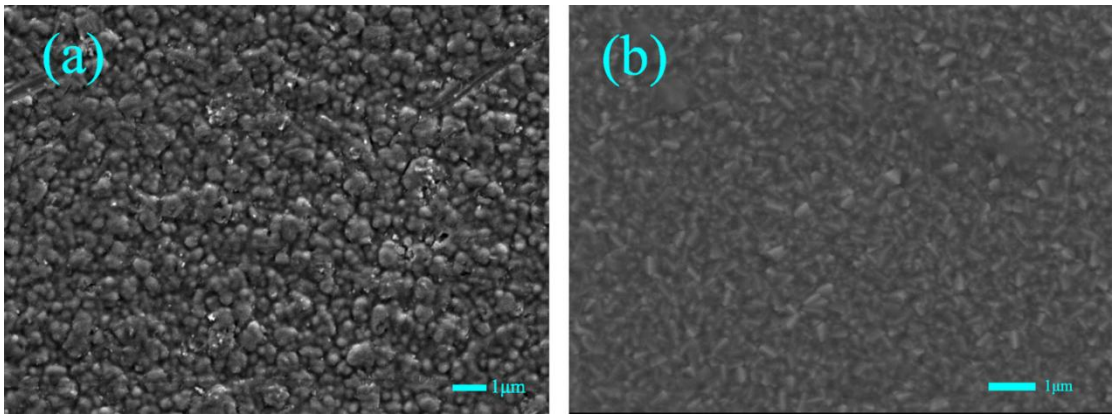

Fig. S4 Top-view SEM images of (a) $BiFeO_3$, and (b) $Bi_{0.8}Nd_{0.2}Fe_{0.9}Co_{0.1}O_3$.

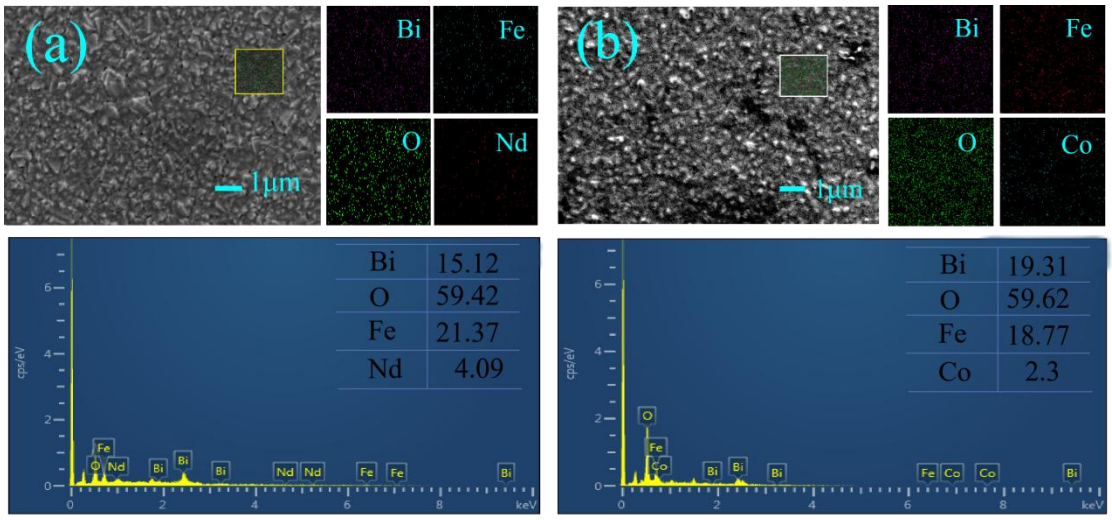

Fig. S5 SEM images and EDS elemental mapping diagram: (a) $Bi_{0.8}Nd_{0.2}FeO_3$, and (b) $BiFe_{0.9}Co_{0.1}O_3$.

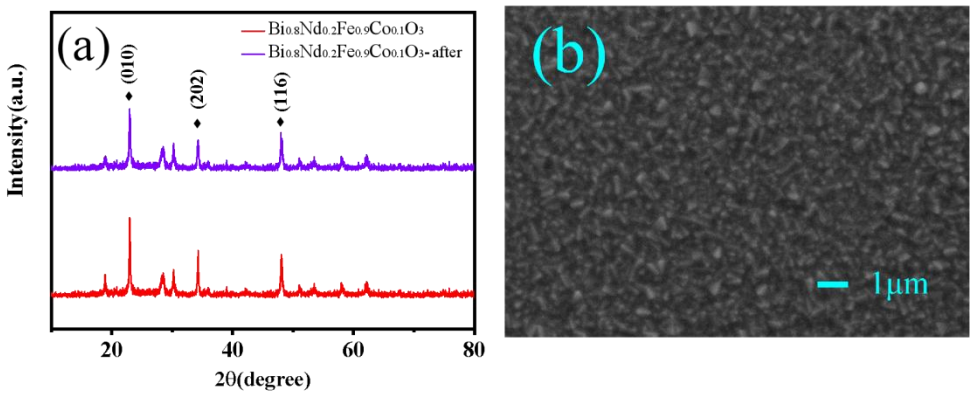

Fig. S6 (a) XRD patterns, (b) Top-view SEM images of the $Bi_{0.8}Nd_{0.2}Fe_{0.9}Co_{0.1}O_3$ after the catalysis performance.

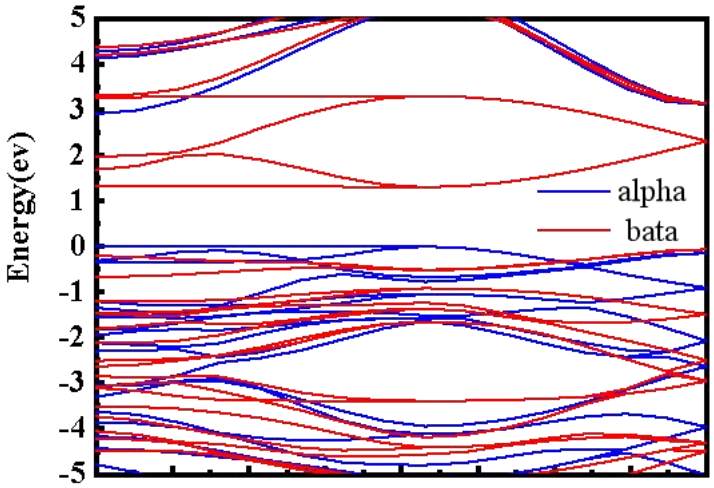

Fig. S7 Band structure diagram of $Bi_{0.8}Nd_{0.2}Fe_{0.9}Co_{0.1}O_3$.

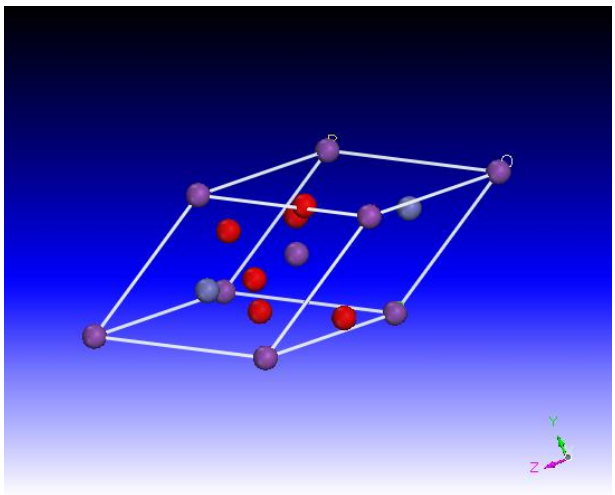

Fig. S8 Crystal model of $Bi_{0.8}Nd_{0.2}Fe_{0.9}Co_{0.1}O_3$.

Tab. S1 Lattice parameters of $Bi_{0.8}Nd_{0.2}Fe_{0.9}Co_{0.1}O_3$.

Space group name	R3C	Int tables number	161	Cell setting	trigonal
a	5.6368	b	5.6368	c	5.6368
α	59.4238	β	59.4238	γ	59.4238
O1	O	1.39730	0.52330	0.94230	0.00000
Nd1	Bi	0.00000	0.00000	0.00000	0.00000
Co1	Fe	0.22120	0.22120	0.22120	0.00000