

Supporting Information

Enhanced photocatalytic activity on polarized ferroelectric KNbO₃

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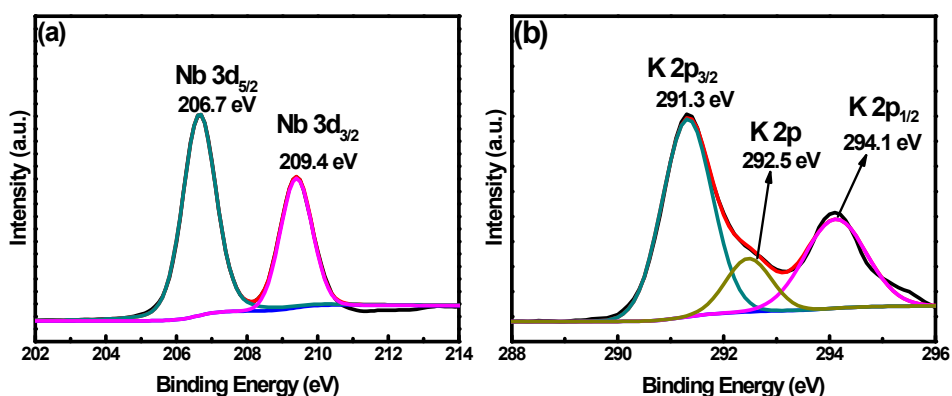


Fig. S1 XPS spectra of the prepared KNbO₃, (a) Nb 3d core-level, (b) K 2p core level.

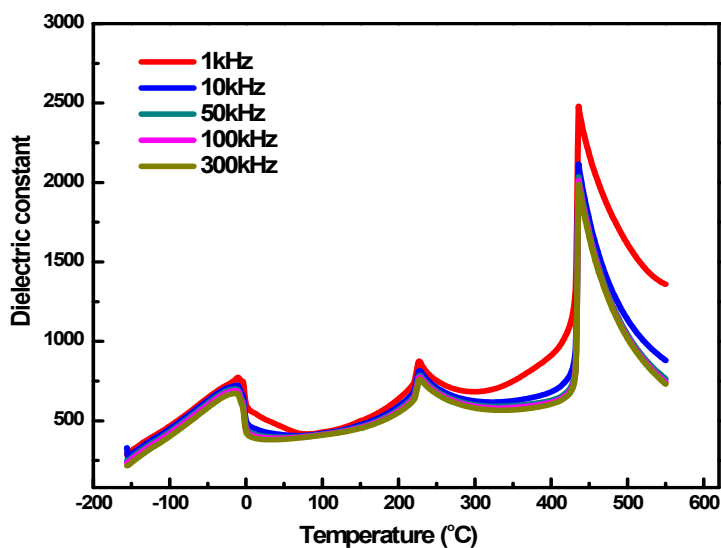


Fig. S2 Temperature dependence of dielectric constant of KNbO₃

Table S1. The lattice parameters, the ratio of I(220)/I(002) and the d_{33} of the samples with different polarization fields

| Polarization Field (kV/cm) | a (Å) | b (Å) | c (Å) | I(220)/I(002) | d_{33} |
|----------------------------|-------|-------|-------|---------------|----------|
| 0 | 3.978 | 5.698 | 5.720 | 1.40 | -- |
| 5 | 3.974 | 5.694 | 5.721 | 2.81 | 27 |
| 10 | 3.970 | 5.689 | 5.722 | 2.74 | 40 |
| 15 | 3.966 | 5.687 | 5.724 | 3.03 | 46 |

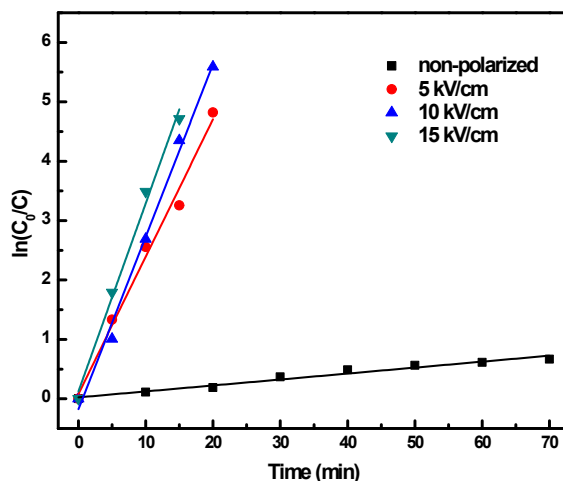


Fig.S3 Fitted plot of $\ln(C/C_0)$ versus time for the photodegradation of RhB

Table S2. Obtained k_{obs} from the fitted linear plot of $\ln(C/C_0)$ vs t

| Catalyst | Polarization Voltage (kV/cm) | $k_{obs}(\text{min}^{-1})$ | R^2 |
|-------------------|------------------------------|----------------------------|-------|
| KNbO ₃ | 0 | 0.010 | 0.97 |
| | 5 | 0.231 | 0.99 |
| | 10 | 0.290 | 0.99 |
| | 15 | 0.317 | 0.99 |

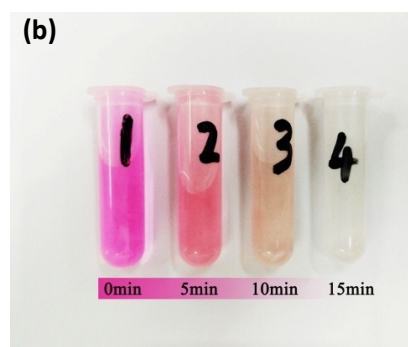
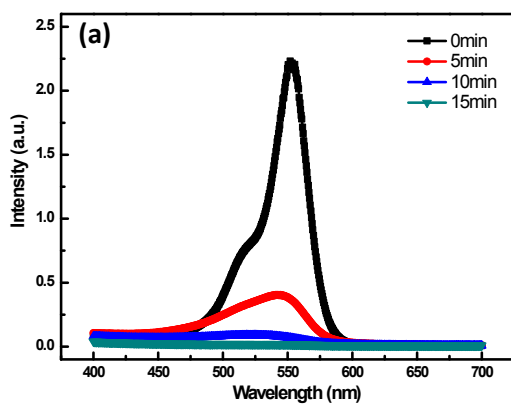


Fig. S4 (a) UV-vis spectral changes of RhB solutions in the presence of polarized KNbO₃ with the 15 kV/cm polarization voltage, and the corresponding successive colour change of RhB solutions is shown in (b).