

Figure S1 (a)-(d) Extinction spectra of NbOCl₂ nanosheets with different concentration dispersed in water for a series of times; (e) Intensity normalized as a function of time for different concentration at 600 nm

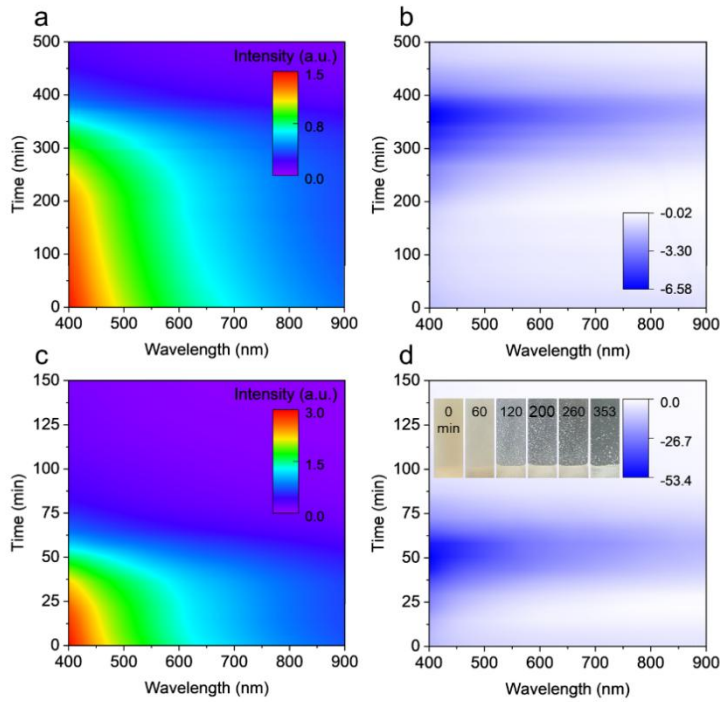


Figure S2 (a) and (c) are precise time-resolved 2D color extinction spectroscopy mapping for the stilling culture of low and high concentration samples, respectively; (b) and (d) are 2D color first derivatives mapping with 1000 times of (a) and (c), respectively. The optical images inserted in d are the high concentration sample over time

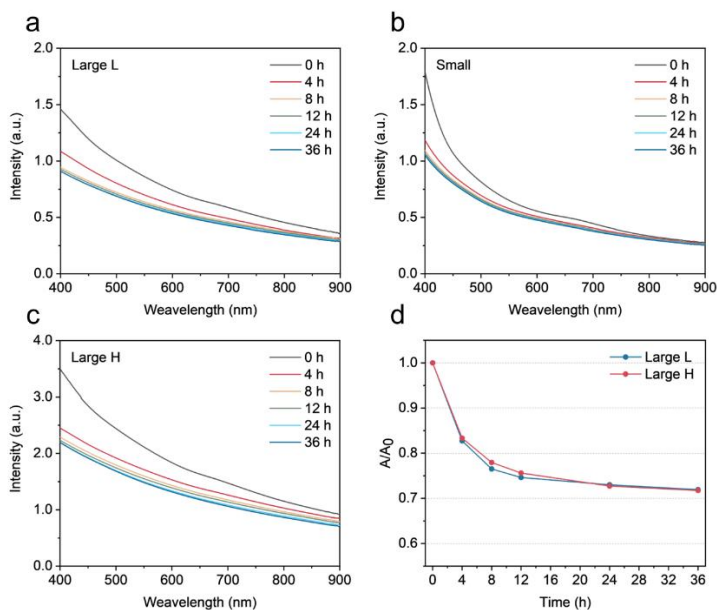


Figure S3 Extinction spectra of NbOCl₂ nanosheets dispersed in water for a series of times: (a) Large size with low concentration; (b) Small size; (c) Large size with high concentration; (d) Intensity normalized as a function of time for different large size concentration at 600 nm

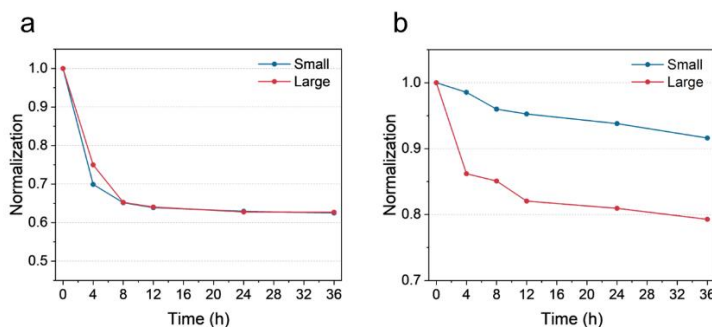


Figure S4 (a) and (b) are intensity normalized as a function of time for different size spectra at 410 nm and 900 nm, respectively

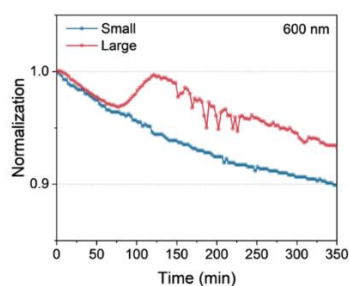


Figure S5 Intensity normalized as a function of time for different size spectra at 600 nm

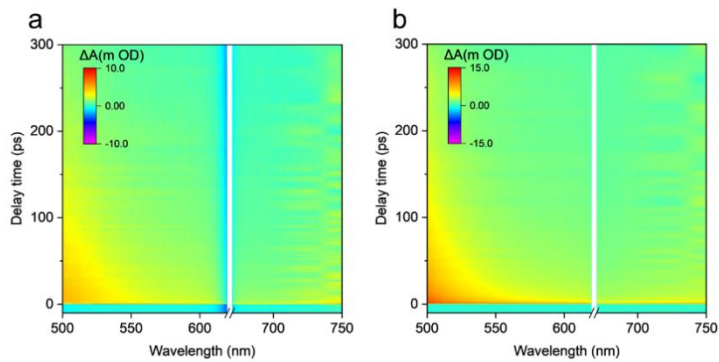


Figure S6 (a) and (b) are transient absorption spectroscopy (TA) of NbOCl₂ nanosheets for large-size and small-size, respectively

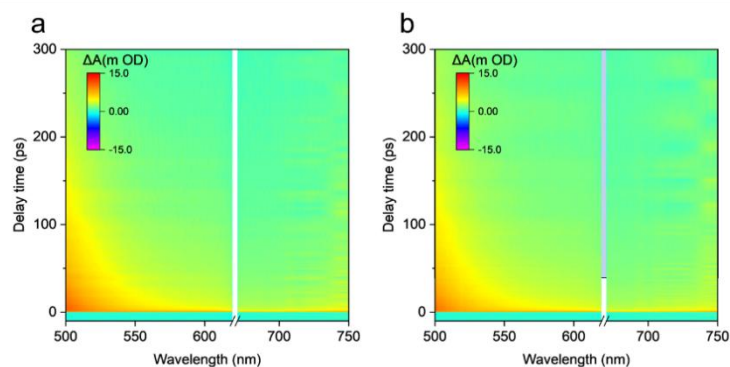


Figure S7 TA of NbOCl₂ nanosheets for different water treatment durations: (a) 1 h; (b) 2 h