

Supplementary Material for

**Oxidation regulation mechanism of air nano-bubbles and application in sulfide removal  
from industrial wastewater**

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Hui Li<sup>a,\*</sup>

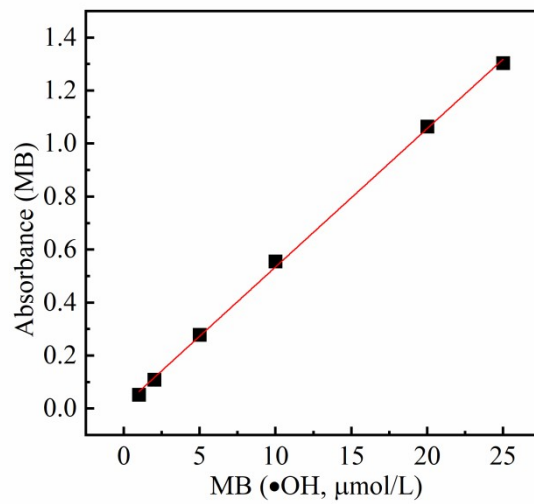
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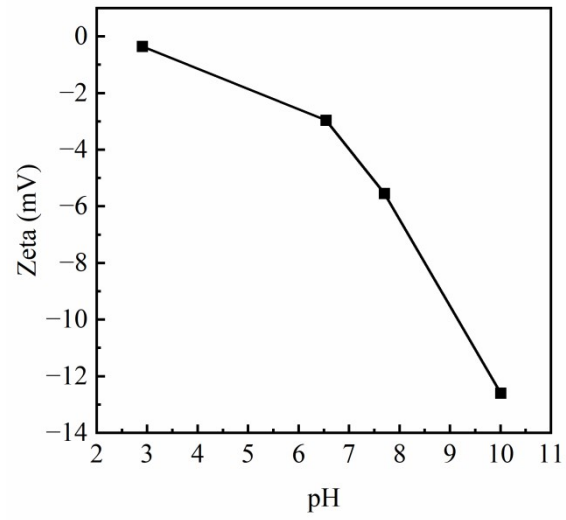
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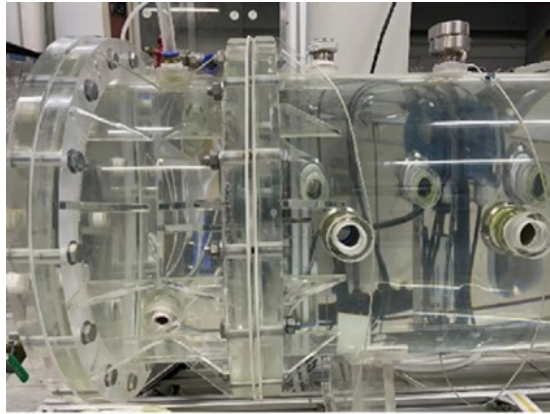


**Fig. S1 Calibration curve for ·OH quantification via methylene blue (MB) consumption.**

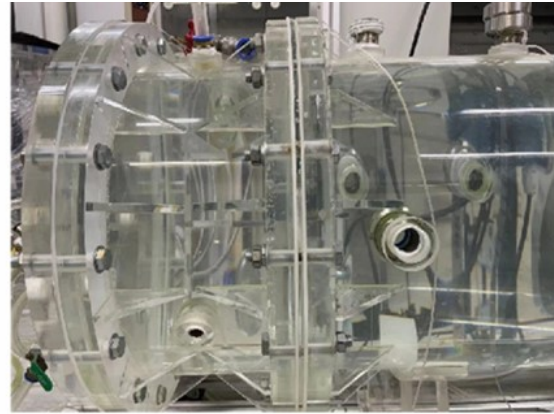
**Standard MB solutions (1, 2, 5, 10, 20, 25 μmol/L) were analyzed by UV-Vis spectrophotometry at 664 nm.**



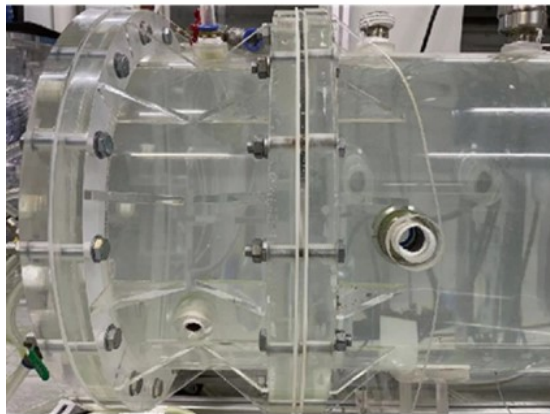
**Fig. S2 Effect of pH on Zeta potential of micro-nanobubbles (MNBs). Zeta potential was measured using a Malvern Zetasizer Nano after 30 min of MNB generation.**



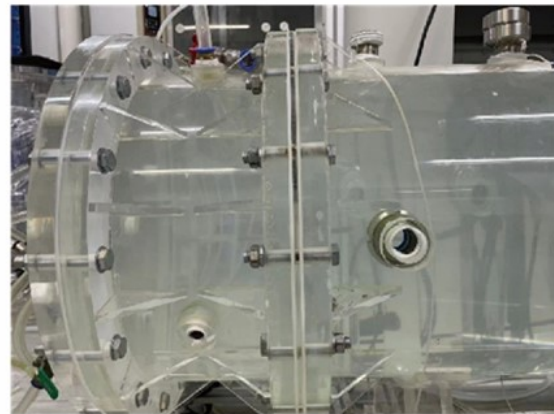
$Q_g/Q_l=1\%$



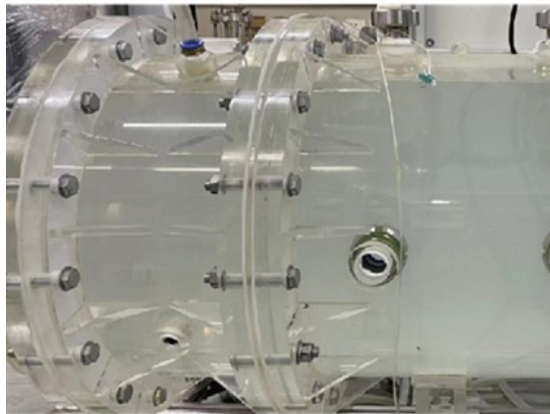
$Q_g/Q_l=2\%$



$Q_g/Q_l=3\%$

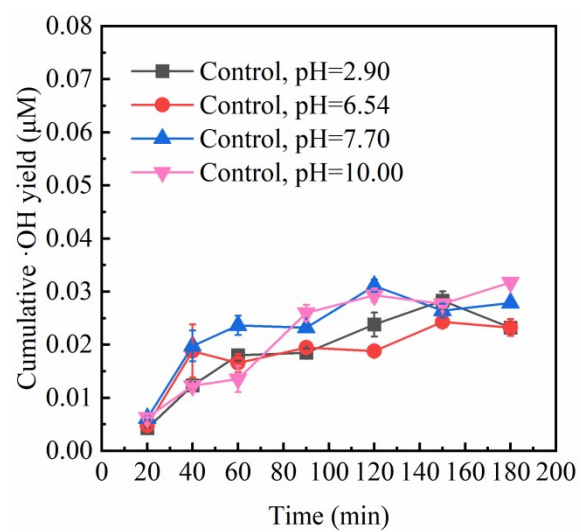


$Q_g/Q_l=4\%$



$Q_g/Q_l=5\%$

Fig. S3 Visual diagram of bubble tank turbidity under different gas-liquid ratios.



**Fig. S4 Cumulative  $\cdot\text{OH}$  yield in non-aerated tap water under different initial pH conditions. (Error bars represent the standard deviation derived from three independent experimental runs.)**