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In-situ growth of lepidocrocite on Bi₂O₃ rod: A perfect cycle coupling photocatalysis and heterogeneous fenton-like process by potential-level matching with advanced oxidation

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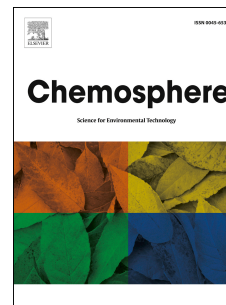
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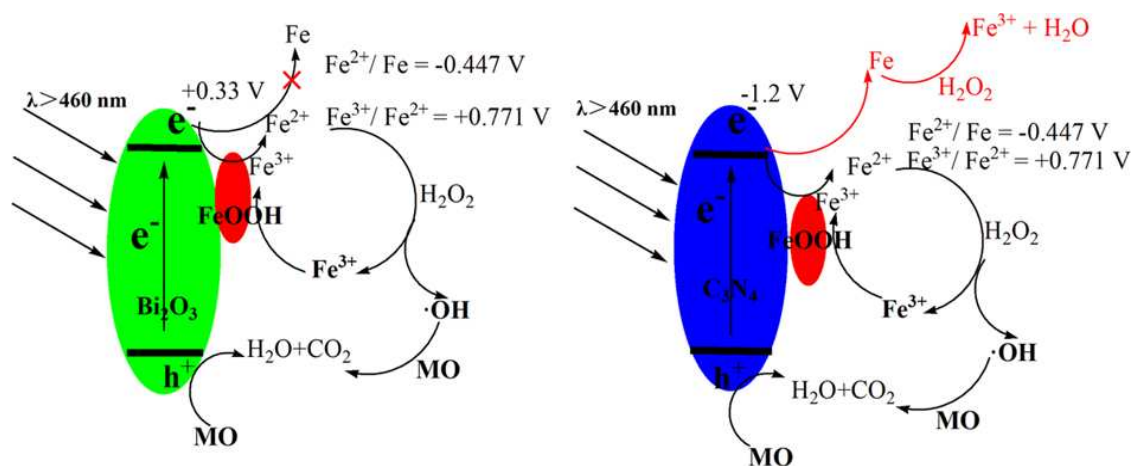
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The Graphical Abstract shows the synergistic mechanism schemes of $\gamma\text{-FeOOH}/\text{Bi}_2\text{O}_3$ and $\gamma\text{-FeOOH}/\text{C}_3\text{N}_4$. From the reactions in the synergistic mechanism schemes, the electrons at the conduction band of Bi_2O_3 is able to transform Fe^{3+} to Fe^{2+} but not able to transform Fe^{2+} to Fe , but the electrons at the conduction band of Bi_2O_3 is able to transform Fe^{2+} to Fe . the suitable conduction band of Bi_2O_3 matches the electric potential of iron ions was proved to be the key to keep the perfect cycle.

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