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Enhanced visible-light-driven photocatalytic activities of $Bi_2Fe_4O_9$/g-C_3N_4 composite photocatalysts

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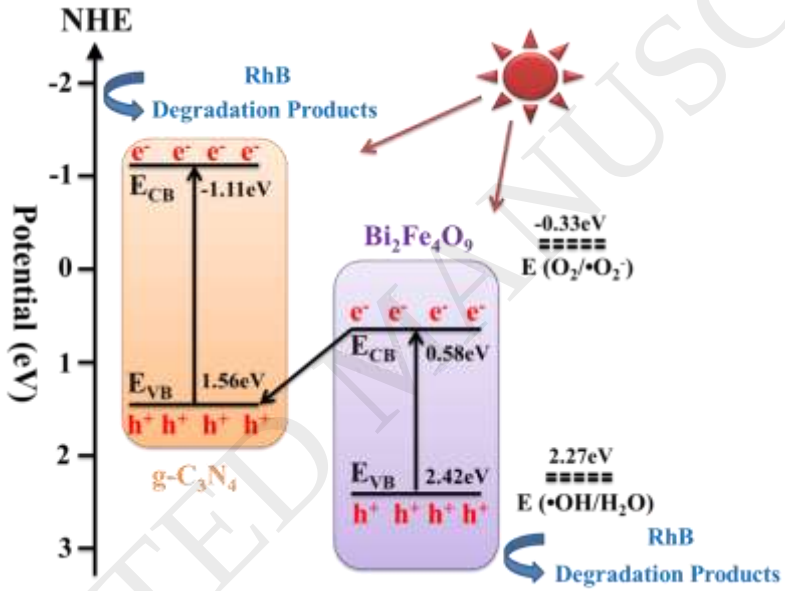
Graphical abstract



The Z-scheme mechanism is proposed in $Bi_2Fe_4O_9$/g-C_3N_4 composites. The photoinduced electrons in the CB of $Bi_2Fe_4O_9$ will move to the VB of g-C_3N_4 and recombine with those holes in its VB. The holes of $Bi_2Fe_4O_9$ and electrons of g-C_3N_4 can be efficiently separated from each other. Those separated electrons in the VB of $Bi_2Fe_4O_9$ and those separated holes in the CB of g-C_3N_4 can carry out the reduction and oxidation reactions of RhB, which leads to the improved visible-light-driven photocatalytic activities compared with those of its single components.