Effect of multi-layer arrangements on PEC performances with the contribution of g-C_3N_4 locations

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As environmental pollution gets worse, solar energy is getting more attention as an alternative of the fossil fuel due to its clean and renewable properties. We can generate H_2 which can be used as a fuel through photoelectrochemical(PEC) water splitting paired with oxygen production.
g-C_3N_4 is noteworthy for its versatile properties. It has favorable light harvesting ability, efficient charge separation property, high surface area and stability. But, g-C_3N_4 has a medium band gap of 2.7eV. To facilitate the absorption of wider visible-light region, band gap should be further narrowed. Stacking up multi-layers with other semiconductor photocatalysts can give a solution of this problem. Location of g-C_3N_4 is also an important factor. We'll research on the synthesis method and various arrangements of multi-layered structures. We expect enhanced PEC performance as light harvesting, charge transfer efficiency and eventually good photocurrent density.