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Title: Tailoring the properties of oxygenated graphene with different oxidation degrees for noble-metal-free photocatalytic hydrogen evolution

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Tailoring the properties of oxygenated graphene with different oxidation degrees for noble-metal-free photocatalytic hydrogen evolution

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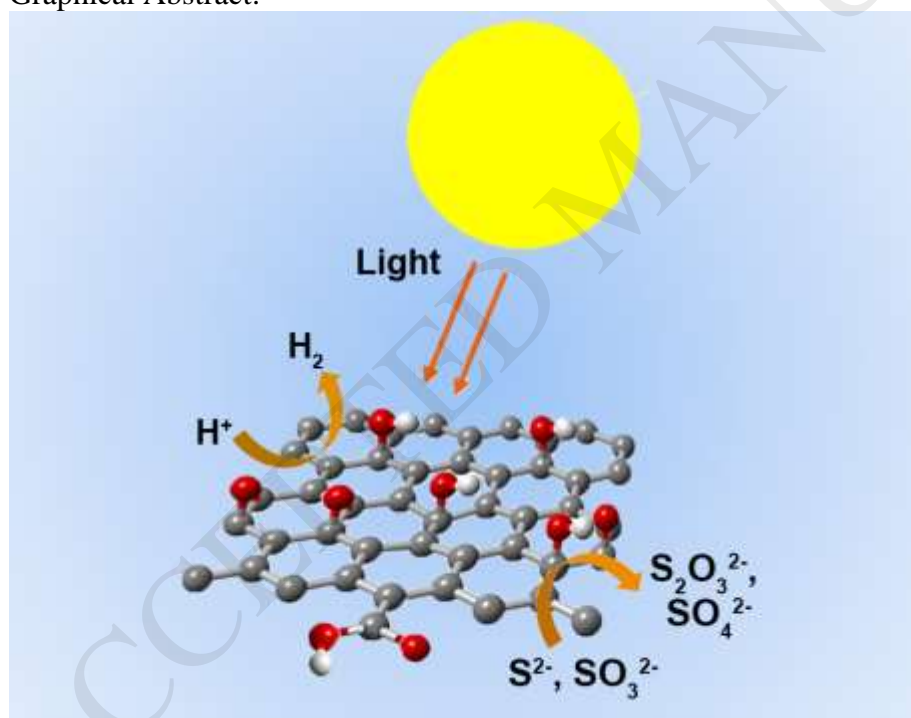
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Graphical Abstract:



Graphene oxide has the necessary band gap and catalytically active sites capable for photocatalytic H₂ evolution.

Highlights

- Pristine graphene does not have the necessary band gap to behave as a photocatalyst.
- Addition of oxygen to graphene opens up a band gap and add catalytically active sites.
- Graphene oxide capable as an independent photocatalyst for H₂ evolution.
- Graphene oxide photocatalytic properties is tailorable by tuning its oxidation degree.

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