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## Graphene-Based Photocatalysts for CO2 Reduction to Solar Fuel

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### Abstract

Recently, photocatalytic CO2 reduction for solar fuel production has attracted much attention because of its potential for simultaneously solving energy and global warming problems. Many studies have been conducted to prepare novel and efficient photocatalysts for CO2 reduction. Graphene, a two-dimensional material, has been increasingly used in photocatalytic CO2 reduction. In theory, graphene shows several remarkable properties, including excellent electronic conductivity, good optical transmittance, large specific surface area, and superior chemical stability. Attributing to these advantages, fabrication of graphene-based materials has been known as one of the most feasible strategies to improve the CO2 reduction performance of photocatalysts. This Perspective mainly focuses on the recent important advances in the fabrication and application of graphene-based photocatalysts for CO2 reduction to solar fuels. The existing challenges and difficulties of graphene-based photocatalysts are also discussed for future application.

### Keywords

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