

## Deactivation and regeneration of photocatalysts: a review

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### ABSTRACT

Heterogeneous photocatalysis is considered a suitable approach for decontaminating and mineralizing organic pollutants because of its high efficiency, low energy consumption, and satisfactory environmental compatibility. However, photocatalyst deactivation has been pointed out as a key disadvantage that hinders practical applications. This paper provides a literature review on deactivation and regeneration of photocatalysts, with aspects such as lifetime, deactivation mechanism, and regeneration efficiency/characterization of deactivated photocatalysts being comprehensively studied. We believe this work can help better understand the deactivation and regeneration processes of photocatalysts, which is necessary to prolong the lifetime of these materials and to further improve the practical application of photocatalysis.

**Keywords:** Photocatalysis; Photocatalyst; Deactivation; Regeneration; Lifetime

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