Title

An overview on consolidated strategies for the metal-free photocatalytic synthesis of hydrogen peroxide by carbon nitride

Abstract

Hydrogen peroxide (H_2O_2) is a chemical that gained wide importance in the industry and science fields. Its production is mostly performed through the anthraquinone reaction, which requires a high energy consumption and waste generation. The growing demand of H_2O_2, the development of clean and economically viable processes points towards heterogeneous photocatalysis as a promising alternative since it applies an optical semiconductor, water, oxygen, and ideally solar light irradiation. Moreover, employing a metal-free carbon nanomaterial minimises possible toxicity consequences and reinforces the sustainability of the overall process. Graphitic carbon nitride (GCN) can be chemically and physically altered, along with the assessment of different sacrificial agents and light sources. In this poster presentation, we aim to show typical modifications on GCN materials design to enhance the productivity of H_2O_2 synthesis and its possible direct application H_2O_2.

Keywords

Graphitic carbon nitride; carbon nanomaterials; hydrogen peroxide; green synthesis; energy production; H2O2

Additional comments to conference administrators

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