# Article information:

Photocatalysis: From Fundamental Principles to Materials and Applications | ACS Applied Energy Materials
<https://pubs.acs.org/doi/10.1021/acsaem.8b01345>

# Article summary:

1. Photocatalysis is a unique class of chemical transformation that utilizes light energy to drive reactions.

2. There is a lack of suitable photocatalyst materials for large scale applications, and research efforts have been focused on conventional semiconductors and emerging photoelectronic materials such as nanoscale plasmonic metal particles, quantum dots, and 2D materials.

3. This review discusses the different classes of photocatalytic materials, their properties, and possible strategies to move forward to practical implementations using model photocatalytic reactions including water splitting, CO2 reduction, and N2 fixation.

# Article rating:

Appears well balanced: The article presents the information in a reliable and balanced way, without biases and prejudices. The claims made in the article are well supported and, where applicable, all sides of the argument are given opportunity to present their point of view. The article appears trustworthy and reliable.

# Article analysis:

The article provides an overview of the current state of research in the field of photocatalysis from a broad materials perspective. The article is well-written and provides an accurate description of the fundamentals principles governing photocatalysis as well as the different classes of photocatalytic materials available for use in large scale applications. The article also provides an overview of model photocatalytic reactions such as water splitting, CO2 reduction, and N2 fixation which can be used to demonstrate the potential applications of these materials.

The article does not appear to contain any biases or one-sided reporting; it presents both sides equally by providing an overview of both existing research efforts as well as potential strategies for moving forward with practical implementations. Furthermore, all claims made are supported by evidence provided in the form of references to other studies in the field. There are no missing points or counterarguments that need to be explored further; all relevant information has been included in the article. Additionally, there is no promotional content present in the article; it is purely informational in nature.

In conclusion, this article appears to be trustworthy and reliable due to its accurate description of existing research efforts and potential strategies for moving forward with practical implementations in the field of photocatalysis.

# Topics for further research:

* Photocatalytic materials synthesis
* Photocatalytic reaction mechanisms
* Photocatalytic water treatment
* Photocatalytic air purification
* Photocatalytic hydrogen production
* Photocatalytic dye degradation

# Report location:

<https://www.fullpicture.app/item/7ecef7f2656790accae19e93df595428>