Title: **CO_2 Photoreduction with Nanostructured Catalysts.**

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Date: January, 2019
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The carbon dioxide photo-reduction reaction involves the conversion of CO_2 molecules to products which can be used later giving potential use to the aforementioned compound and also avoiding emissions to the atmosphere preventing the effects that carbon dioxide can produce on it (like, for example, greenhouse effect).

This study is particularly focused on the photocatalytic reduction of CO_2 using nanostructured catalysts, studying differences and variety that their reactions present and the products they generate. Photocatalytic reaction can be described as shown, so in general there are two variants of it:

$$CO_{2(g)} + 4H_{2(g)} \xrightarrow[hv]{cat.} CH_{4(g)} + 2H_2O_{(g)}$$

$$CO_{2(g)} \xrightarrow[hv]{cat.} CO_{(g)} + 1/2O_{2(g)}$$

In this bibliographical research project, a review of the articles which talk about photocatalytic reduction of the carbon dioxide using nanostructured catalysts published on the last years is done, studying, also, the results of obtained in each one. These articles will be classified according to the type of radiation that is necessary to accomplish the carbon dioxide reduction.

Keywords: Photoreduction, Catalysis, Carbon dioxide, Nanostructured.