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Evaluation of the potential of solar technology in wastewater treatment

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Nowadays, the elimination of contaminants that can affect human health and ecosystems is one of the great challenges in science. In the case of water treatment, heterogeneous photocatalysis has been presented as a solar technology able to mitigate water pollution. In addition, it proceeds at room temperature and atmospheric pressure, saving costs and energy. At the same time, the activation of the photocatalyst is produced by solar radiation, minimizing energy consumption. The high efficiency of the process allows to degrade a large number of compounds, even those that can not be adsorbed or those that are not biodegradable [1].
The main objective of this work is to evaluate the potential use of solar energy for the treatment of polluted water. For this, bimetallic photocatalysts based on copper and molybdenum were prepared by solvothermal method, from copper acetylacetonate, ammonium heptamolybdate and furfural that it is a common waste from the agricultural industry (corn, wheat, sawdust, etc.). It is also widely used in the biorefinery industry for the production of fuels and chemicals [2]. The pollutant selected was tartrazine, an artificial colorant commonly used in several countries in the food industry.

This work propose the use of solar radiation for the treatment of wastewater, using C-based materials obtained from agricultural waste and metals relevant to Chile. In addition, to reuse water, improving its quality and avoiding its elimination with the presence of contaminants that can cause damage to health and ecosystems.

References

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