

# Photocatalytic degradation of organic compounds by $\text{PbMoO}_4$ synthesized by a microwave-assisted solvothermal method

## Objective

Compare the properties and photocatalytic activity of  $\text{PbMoO}_4$  made by a conventional solvothermal method with the ones of the same material done by microwave-assisted solvothermal (a variation of the technique). The primary role of both materials is the photodegradation of a pollutant in water, the concentration of this is one is measured by UV-Vis. Also UV-Vis helps to determine optical properties of the material.

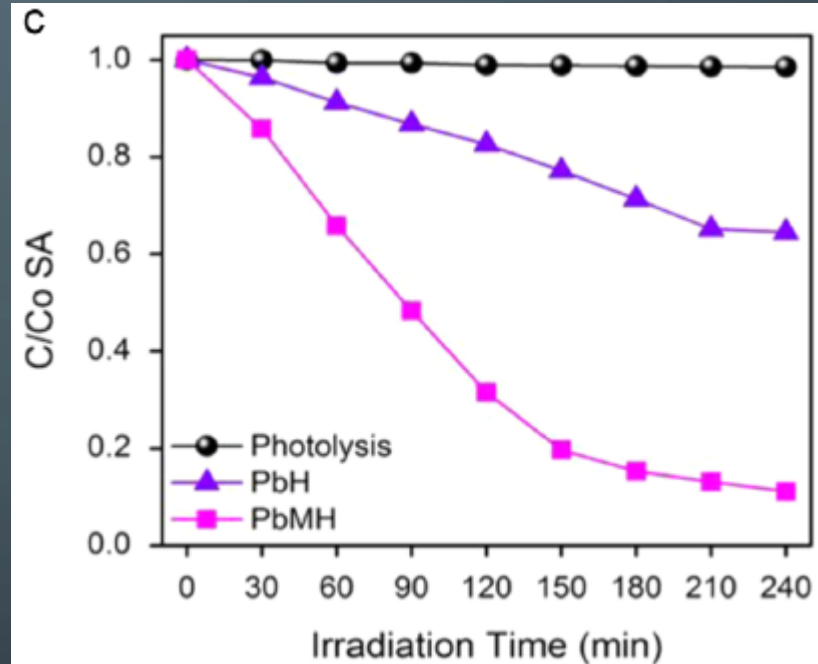
## Sample preparation

Two solutions of 5mM molybdic acid and lead nitrate were dissolved, then its pH was adjusted to 11 by adding ammonium hydroxide. The resulting solution was sonicated at room temperature for 30 min, and later passed into a microwave-assisted solvothermal dispositive, heated with a power of 200W at 150 °C for 30min. The product was washed and dried.

## Data acquisition conditions

"The energy band gap value ( $E_g$ ) of  $\text{PbMoO}_4$  samples was determined from the UV-vis diffuse reflectance absorption spectrum of each sample by using a UV-vis-NIR spectrophotometer (Cary5000) equipped with an integrating sphere." The concentration was obtained by UV-vis illumination.

## Representative figure /results



Degradation of Salicylic Acid.

Calculated values of Band Gap were just listed on the paper, no details are shown.

## Reference

D. Hernandez-Uresti, A. M. de la Cruz, and L. Torres-Martinez, "Photocatalytic degradation of organic compounds by  $\text{pbmoo}_4$  synthesized by a microwave-assisted solvothermal method", *Ceramics International*, vol. 42, no. 2, Part B, pp. 3096-3103, 2016, issn: 0272-8842. doi: <https://doi.org/10.1016/j.ceramint.2015.10.098>. [Online]. Available: <http://www.sciencedirect.com/science/article/pii/S0272884215020003>.