##  Name:



Héctor Hugo Vigil Castillo

## Research Group (if relevant):

Photocatalysis and Environmental Electrochemistry Laboratory

## Research Centre (if relevant):

N/A

## Department/School(s) (if relevant):

Faculty of Chemical Sciences

## College:

Universidad Autónoma de Nuevo León

## Supervisor(s):

Aracely Hernández Ramírez / Minerva Villanueva

## Funding body:

Conacyt / Paicyt

## Area (field) of study:

Synthesis of semiconductor oxides with photocatalytic activity for the degradation of aromatic hydrocarbons in liquid and gas phase

## Thesis Title:

Degradation of p-cresol in aqueous phase and toluene in gaseous phase using the photocatalyst Bi2O3 / TiO2-N under visible light radiation

## Abstract:

## The hydrocarbons present in the environment are emitted mainly by anthropogenic sources, with petroleum-related processes being the main source of emissions. It is well known that this class of compounds cause not only affectations to all kinds of organisms but also contribute to the decrease of environmental quality.

## Although there are works where heterogeneous photocatalysis is used for the degradation of aromatic hydrocarbons in water and air, they focus on the use of materials that, although they are efficient, require UV radiation for their proper application.

## Therefore, in this work the degradation of p-cresol and toluene was evaluated by means of heterogeneous photocatalysis using a visible irradiation source and as photocatalyst TiO2 modified with Bi2O3 and N synthesized by sol-gel.

## Collaborations:

N/A

## Publications:

H.H. Vigil-Castillo, A. Hernández-Ramírez, J.L. Guzmán-Mar, N.A. Ramos-Delhado, M. Villanueva-Rodríguez, “Performance of Bi2O3/TiO2 prepared by sol-gel on p-Cresol degradation under solar and visible light”. Environmental Science and Pollution Research (1-9).

## Presentations:

3rd Iberoamerican Conference on Advanced Oxidation Technologies (III Cipoa) and the 2nd Colombian Conference On Advanced Oxidation Processes (II Ccpaox).

XXVII International Materials Research Congress