## F:\HP Bunda\Photos (1)\48018200203_06089490cc_o.jpgName:

## Abdul Wafi

## Research Group (if relevant):

## Environmental Photochemistry

## Research Centre (if relevant):

N/A

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

## Doctoral School of Chemistry and Environmental Sciences

## College:

## University of Pannonia, Hungary

## Supervisor(s):

## Prof. Dr. Ottó Horváth, DSc; (Supervisor)

## Erzsébet Szabó-Bárdos, Ph.D (Co-supervisor)

## Funding body:

N/A

## Area (field) of study:

## Removal of organic pollutants by TiO2 Photocatalysis

## Thesis Title:

## [Degradation of selected organic pollutants over various immobilized photocatalysts](https://doktori.hu/index.php?menuid=192&lang=EN&sz_ID=27608)

## Abstract:

The continuously increasing number of environmentally risky chemicals strongly demands the developments of new procedures which can be successfully deployed against a wide range of man-made contaminants. Heterogeneous photocatalysis is an advanced oxidation process (AOP) which has been successfully used for degradation of several organic pollutants. In heterogeneous photocatalytic methods applied for the degradation of various organic pollutants, the most widely used material is titanium dioxide (TiO2) due to its photo-stability, non-toxicity, and high abundance. However, one of the main disadvantages of this method is that the phase separation after the water treatment is very difficult and expensive. This problem can be eliminated if the catalyst is immobilized.

Therefore, when the TiO2 particles are immobilized on appropriate supports, there is no need of separation of the catalyst from the solution subsequent to the irradiation period. Thus, TiO2 nano-particles will be fixed as thin layers on various supports of advantageous properties (on ceramic, glass, and polymer).

In addition, the immobilizations will also be carried out with various TiO2 photocatalysts both bare and metal-deposited form. The effect of the immobilization on the photocatalytic degradation of selected organic compounds as model substances will be studied too.

## Collaborations:

N/A

## Publications:

N/A

## Presentations:

3rd EuropeanSummer School on Environmental Applications of Advanced Oxidation Processes, Alcoy, Spain, June 3-7, 2019

Water and Wastewater Treatment in the Industry, VI Soós Ernő International Scientific Conference, Zalakaros, Hungary, October 10, 2019

Central European Conference on Photochemistry, Bad Hofgastein, Austria, 9 -13. February 2020