

INDUSTRIAL LINE

- 100% ECO
- NO CHEMICALS
- NO BY-PRODUCTS
- MINIMAL CONSUMPTION
- MAXIMUM SUSTAINABILITY
- LOW MAINTENANCE
- MINIMAL SPACE
- EASY INSTALLATION
- NO SPECIALIZED STAFF
- WIDELY TESTED
- 10 YEARS GUARANTEE

h2o.TITANIUM is a cylindrical MONOBLOCK of TITANIUM DIOXIDE specially designed to eliminate organic compounds contained in water used in different industrial processes by generating hydroxyl radicals.

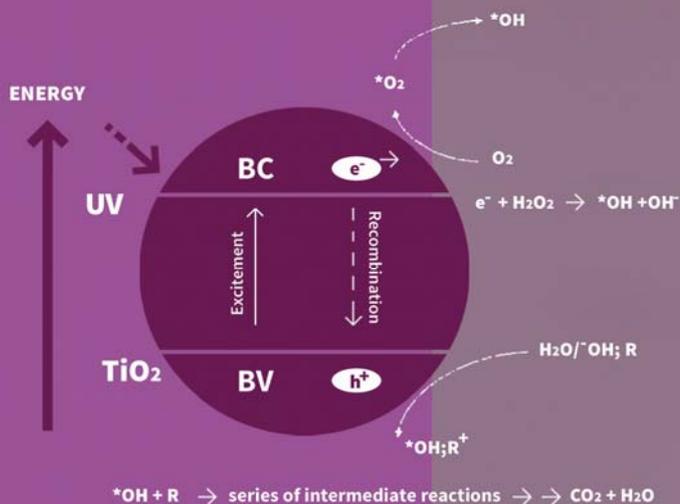
**OUR METHOD**

**ADVANCED OXIDATIVE PHOTOCATALYSIS**

The objective of h2o.TITANIUM is the generation of hydroxyl radicals through Advanced Oxidative Photocatalysis, a physicochemical process capable of producing breaks in the chemical structure of organic contaminants present in water, thus obtaining its mineralization. i.e., eliminating them by transforming them into CO2 and water.

The photocatalyst, the h2o.TITANIUM reactor itself, is a broadband semiconductor that is directly excited by the absorption of radiant energy.

Photons generated from UV lamps installed in the reactor trigger reactions at the interface between the excited catalyst (titanium dioxide) and the solution (water and organic compounds mainly) resulting in degradation of contaminants and their mineralization.



**PROCESS**  
**H2o.TITANIUM**

The photons emitted by the UV lamps are absorbed by the catalyst (internal surface of the titanium dioxide reactor).

As a consequence, electron-hole pairs are generated that migrate to the surface.

The water molecule is oxidized and reduced by the generated electron-hole pairs. The holes give rise to photo-oxidation reactions, while the electrons produce the photo-reduction reactions, with the sole purpose of producing as many hydroxyl radicals as possible  $OH \cdot$ .

"THE PERFECT COMBINATION FOR WATER TREATMENT. TITANIUM DIOXIDE (TiO<sub>2</sub>) AND UV RADIATION TO GENERATE HIDROXYL RADICALS (•OH)

## COMPARISON TABLE

	<b>h2o.TITANIUM</b>	TRADITIONAL UV	OZONE	CHEMICALS
Mineralisation of organic matter.	YES	NO	YES	YES
By-products.	NO	NO	YES	YES
Corrosion.	NO	NO	YES	YES
Danger to humans.	NO	NO	YES	YES
Risk to the installation.	NO	NO	YES	YES
Danger to animals and environment.	NO	NO	YES	YES
Eficacy on turbidity and suspended solids.	HIGH	NONE	HIGH	HIGH
Contact time.	MILLISECONDS	<1 SECOND	MINUTES	MINUTES
Installation.	NONE	MODERATE*	HIGH	NONE
Implementation cost.	LOW	MODERATE*	HIGH	LOW
Maintenance cost.	VERY LOW	MODERATE*	VERY HIGH	LOW
Energy consumption.	MINIMAL	MODERATE*	VERY HIGH	VERY HIGH
Need for qualified personnel.	NO	NO	YES	YES
Residual product.	NO	NO	YES	YES

\*Increase in throughput entails proportional increase in installation and maintenance costs and energy consumption.



## MODELOS h2o.TITANIUM

h2o.TITANIUM offers a range of reactor models depending on the flow of water to be treated, and can cover flows that vary from 0,5 m<sup>3</sup>/h to 1.000 m<sup>3</sup>/h.

Standard models with simple control panel:  
AOP05; AOP1; AOP3; AOP5; AOP10.

Standard models with integral control panel:  
AOP20; AOP50M; AOP100M;

Models with special integral control panel:  
AOP200M; AOP300 M; AOP500M; AOP700M; AOP900M;  
AOP1000M