METHOD FOR DEGRADING RECALCITRANT COMPOUND IN WATER	
Offering Organization:	Centro de Investigación y Asistencia en Tecnología y Diseño del Estado de Jalisco, A.C.
Type of Organization:	Public Research Center
Development Stage:	Laboratory
Desired Relationship:	– Technological research and development financing (technological partner) – Specialized application tests – Creation of a new company (Joint Venture) for the commercialization of the products outlined herein – Licensing of patents
Sector:	Environment
Area of knowledge:	Water Treatment
Key words:	Recalcitrant compound, Degrade, Water treatment, Oxidation

DETAILED DESCRIPTION:

Problem to be solved:

Method for degrading recalcitrant compound in water.

Solution:

The present invention has its action field in the environmental engineering, mainly in the area intended to treat water polluted with recalcitrant compounds. The inventive process refers to an advanced oxidation process developed in a two-phase reactor (liquid-gas), through which molecular ozone (gas) is catalyzed with hydrogen peroxide (H2O2) for reducing hydroxyl radicals (HO0), these latter elements causing a total and accelerated degradation of the organic recalcitrant compounds present in water (liquid).

New and Innovative Aspects:

The recalcitrant compound degradation method enables rapid degradation of recalcitrant compound.

TECHNICAL CHARACTERISTICS:

The present invention has its action field in the environmental engineering, mainly in the area intended to treat water polluted with recalcitrant compounds. The inventive process refers to an advanced oxidation process developed in a two-phase reactor (liquid-gas), through which molecular ozone (gas) is catalyzed with hydrogen peroxide (H2O2) for reducing hydroxyl radicals (HO0), these latter elements causing a total and accelerated degradation of the organic recalcitrant compounds present in water (liquid). The oxidation process is developed in a reactor under a semi-continuous or continuous regime at a pH of from about 7.6 ± 0.2, within a temperature range of from about 15°C to about 300°C. The reactants dose is of from about 3 moles to about 10 moles of ozone for degrading 1 mol of recalcitrant compound and from about 0.5 g to about 1.0 g of ozone for removing 1.0 g the COD (Chemical Oxygen Demand) in water containing a mixture of recalcitrant compounds. The oxidation or treatment time required for achieving the total degradation of the recalcitrant compounds is shorter than those regarding further advanced oxidation treatment processes.

Main advantages derived from its utilization:

The oxidation treatment time is short to achieve efficiencies of degradation of recalcitrant compounds higher than 90%, compared to other advanced oxidation treatment processes.	
Applications: – Wastewater treatment	
INTELLECTUAL PROPERTY	
– Patent granted in 2007, valid until 2027	
ABOUT THE OFFERING ORGANIZATION	
Presentation:	El Centro de Investigación y Asistencia en Tecnología y Diseño del Estado de Jalisco, A.C. (CIATEJ) is a public research center that belongs to the national technology development and innovation network, the National Council for Science and Technology (CONACyT). CIATEJ is focused on the agricultural, food, health, and environmental sectors with an emphasis on the application of innovative biotechnology.
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