

Title (en)
PROCESS AND DEVICE FOR PURIFICATION TREATMENT OF LIQUID EFFLUENTS, IN PARTICULAR AQUEOUS LIQUID EFFLUENTS, BY PHOTOCATALYSIS

Title (de)
VERFAHREN UND VORRICHTUNG ZUR REINIGUNGSBEHANDLUNG VON FLÜSSIGABFÄLLEN, INSBESONDERE VON WÄSSRIGEN FLÜSSIGABFÄLLEN, DURCH FOTOKATALYSE

Title (fr)
PROCEDE ET DISPOSITIF DE TRAITEMENT D'EPURATION D'EFFLUENTS LIQUIDES, EN PARTICULIER AQUEUX PAR PHOTOCATALYSE

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EP 2855364 A1 20150408 (FR)

Application
EP 13729996 A 20130527

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Abstract (en)
[origin: WO2013175150A1] The invention relates to an improved process/device for purification treatment, by photocatalysis, of aqueous liquid effluents comprising at least one pollutant. In this process: (a) a suspension consisting of the effluent to be treated and loaded with particles of a photocatalyst is used and/or prepared; (b) the suspension of effluent to be treated, loaded with photocatalyst particles, is circulated in a reactor which has an inlet and an outlet and which comprises at least two zones; (c) a stream of air bubbles is diffused within the suspension circulated; (d) a photoactivation is carried out using irradiation means placed in the reactor; (e) the liquid phase is separated from the solid phase of the treated effluent by filtration; (f) then this liquid phase of the treated effluent is recovered. This process is characterized in that (i) the reactor used comprises at least two zones; (ii) it is seen to that the stream of gas bubbles is diffused within only one of the two zones: the aerated zone, and generates a gas lift which makes it possible to obtain recirculation between the two zones and hydrodynamic behaviour of perfectly stirred reactor (PSR) type.

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Citation (examination)
SHINPON WANG ET AL: "Decomposition of formic acid in a photocatalytic reactor with a parallel array of four light sources", JOURNAL OF CHEMICAL TECHNOLOGY AND BIOTECHNOLOGY, WILEY, vol. 77, no. 7, 1 July 2002 (2002-07-01), pages 805 - 810, XP001577741, ISSN: 0268-2575, [retrieved on 20020419], DOI: 10.1002/JCTB.640

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