

The invention relates to the field of renewable alternative solar energy, to photocatalytic purification of water and air from organic and inorganic pollutants using a hybrid photocatalyst based on nanocrystalline titanium dioxide and diatomite.

The process for producing a hybrid photocatalyst based on nanocrystalline TiO_2 and diatomite by electrolysis comprises stirring for 30 min a suspension of 2 g of diatomite in a solution of TiCl_4 with a concentration necessary to obtain a mass content of TiO_2 of 20%, introducing the resulting suspension into a cathode chamber of a two-chamber electrolyzer equipped with a platinum cathode, an anode of graphite and a cation-exchange membrane, pumping through the anode chamber a solution of Na_2SO_4 , carrying out the electrolysis process at a current density of 25-100 mA/cm^2 ; after which the electrolyzer is turned off, the suspension is stirred for 60 min, the precipitate is separated from the solution, washed until a negative reaction for chloride ions is obtained, dried in air, and then in a drying cabinet at a temperature of 100°C to a constant weight and calcined at a temperature of 400°C to form the anatase phase.

Claims: 1

Fig.: 2