

عنوان مقاله:

Investigation of effective parameters in electrochemical coating on synthesis of nano-photocatalysts

محل انتشار:

دومین کنفرانس کاتالیست انجمن شیمی ایران (سال: 1398)

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خلاصه مقاله:

The technology of semiconductor photocatalysts as a promising new technology faces challenges for industrialization: Design of active photocatalysts in the visible light range, Reduction of electron and hole recombination rate in photocatalysts, The Design efficient photoreactors for extra using of sun s energy, Improve photocatalytic performance over a wide range of pH and reduce oxidants and additives in the process, The Design strategies and cost benefit for separating catalysts after reaction completion. Among the need secondary separation challenges the need of coating is recommended if the catalyst is powdered in the process. Coverage is therefore recommended. Coating methods are: Dip coating, rain or sholder coating, roller coating, barrly coating, powder coating and electrodeposition. Electrochemical coating is one of the oldest coating method that is produced by electric current is electrochemical coating. In all conductor solutions with electric current, the molecules break down into charged particles or ions (positive and negative). The soluble particles are then flushed to the part that needs coverage and cover the surface; in this method the solution used has a negative charge and a positive charge takes place. After coating, the piece is removed from the tank and washed to remove any particles attached to the surface, then it was transferred or entered to an oven and calcination. This process is also called electrodeposition, electrophoretic or electropinetic. Important advantages of the electrochemical coating method include: The process is usually automated and reduces labor costs. The low solubility, of the solution is very low, The level created is perfectly consistent, High production speed in short time, simple equipment, low cost of production, easy control of deposition conditions, coating of different sizes and selective coating, Low temperature method. It is easier to control coating composition than high temperature methods. It is possible to cover shapes with complex geometries. The operating and catalytic Parameters that effect the performance of electrochemical coating is: time, temperature, concentration of electrical species, pH, current, organic additives, electrolyte, electrode parameters, electrode position.

کلمات کلیدی:

Photocatalyst, Electrodeposition, Coating

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