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REACTORS FOR APPLICATION IN HETEROGENEOUS PHOTOCATALYSIS

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Abstract

The present paper is a literature survey of some representative works conducted in the field of photocatalytic reactors approaching the major issues should be considered in development of commercially available photocatalytic systems for different purposes: whether to use suspended or supported catalysts and whether to use concentrated or non-concentrating sunlight. Different photoreactor configurations and experimental set-ups containing such systems used for study of varied liquid-phase or gas-phase pollutants degradation under artificial UV light irradiation were described. The common problems encountered in design of photocatalytic reactors were discussed and few modalities for increasing their performances were proposed. Pilot-scale experiments employing different (concentrating, non-concentrating and low –concentrating) photocatalytic solar devices were also presented and compared in terms of their efficiencies in water detoxification applications. The advantages and disadvantages of these photocatalytic solar technologies were reviewed in order to assess the possibilities to extend their application at industrial scale.

Keywords: photocatalytic reactors, artificial light, solar light

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