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**PHOTOELECTROCHEMICAL STUDY OF Pt DOPED Bi_2WO_6 and SrTiO_3
PHOTOCATALYST FOR PHOTOCATALYTIC DEGRADATION OF REACTIVE RED
4 (RR4) DYE**

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ABSTRACT

PHOTOELECTROCHEMICAL STUDY OF Pt DOPED Bi_2WO_6 AND SrTiO_3 PHOTOCATALYST FOR PHOTOCATALYTIC DEGRADATION OF REACTIVE RED 4 (RR4) DYE

Environmental pollution has all over the place with consequences for human health, living organisms, and ecosystems. To solving this problem, it is necessary to ensure the total transformation of the parent harmful compounds is complete in order to eliminate their toxicity and persistence. Bi_2WO_6 and SrTiO_3 having less photocatalytic performance because of the several factors. There is several modifications have been introduced to make these photocatalysts become more active under photocatalytic process. Photocatalysis provides a promising solution to this problem. This study investigates the effectiveness of Pt doped $\text{Bi}_2\text{WO}_6/\text{SrTiO}_3$ composites for photocatalytic dye degradation in wastewater. First and foremost, of $\text{Bi}_2\text{WO}_6/\text{SrTiO}_3$ composite was prepared by the different ratios. The methods involve of mixing and calcination of of $\text{Bi}_2\text{WO}_6/\text{SrTiO}_3$ at 400°C for 2 h in tube furnace. Then, to fabricate $\text{Bi}_2\text{WO}_6/\text{SrTiO}_3$, Platinum was deposited onto the $\text{Bi}_2\text{WO}_6/\text{SrTiO}_3$ composite using the photodeposition technique. RR4 dyes was used as model pollutant to examine photocatalytic activity of Pt doped $\text{Bi}_2\text{WO}_6/\text{SrTiO}_3$. FTIR and PEC were used for photodegradation study. In the FTIR, it was observed that functional groups presence in SrTiO_3 , Bi_3WO_6 , $\text{Bi}_3\text{WO}_6/\text{SrTiO}_3$ and Pt dope $\text{Bi}_3\text{WO}_6/\text{SrTiO}_3$. While for PEC analysis, LSV, EIS and CA demonstrated that SrTiO_3 , Bi_3WO_6 , $\text{Bi}_3\text{WO}_6/\text{SrTiO}_3$, Pt dope $\text{Bi}_3\text{WO}_6/\text{SrTiO}_3$ has high current density under light, low charge transfer resistance under light and high photocurrent response, respectively. For photocatalytic degradation, the highest K value among the sample is $\text{Bi}_3\text{WO}_6/\text{SrTiO}_3$ (70:30) with value 0.0016.

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