



## Evaluation of new couple $\text{Nb}_2\text{O}_5/\text{Sb}_2\text{O}_3$ oxide for photocatalytic degradation of Orange G dye

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**Abstract:** This paper involves the study the effect of differences in calcination temperatures on the prepared couple  $\text{Nb}_2\text{O}_5/\text{Sb}_2\text{O}_3$  oxide at percentage 1:1 with 400, 500 and 600 °C of calcination temperature and it was characterized by x-ray diffraction. Degradation test of orange G dye was carried out to determine photocatalyst activity for new couple  $\text{Nb}_2\text{O}_5/\text{Sb}_2\text{O}_3$  oxide. The photocatalyst experiments were performed at mass of the catalyst (0.05-0.3) g, pH solution in the range (2 -9) and dye concentration 10 ppm were monitored as a function of time at wavelength of 475 nm with recording optical absorbance. The photocatalyst destruction of Orange G dye was found to follow first order kinetics. The results indicate that 0.15 g was the best weight of the catalyst and the best pH for degradation orange G dye was at pH of solution equal to 6.8.

**Keywords :**  $\text{Nb}_2\text{O}_5/\text{Sb}_2\text{O}_3$  oxide, Orange G dye, Degradation, photolysis.

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