IICC 2021 International Industrial Chemistry Conference

Virtual

1st International Industrial Chemistry Conference

26-27th February 2021

Photocatalytic Degradation of Textile Wastewater Using Immobilized $CuCo_2O_4$ Nanocomposite Thin Films

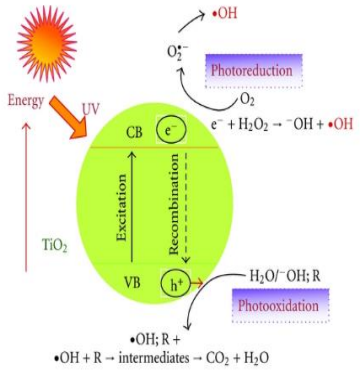
Muhammad Mohsin[1]*, Ijaz Ahmad Bhatti[1], Muhammad Fuqran[1], Ambreen Ashar[1,2] and Qamar ul Hassan[1]

[1]Department of Chemistry, University of Agriculture, Faisalabad, [2]Department of Chemistry, Government College Women University, Faisalabad

**E-mail: m.mohsin618@gmail.com*

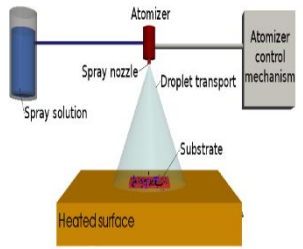
Background and Objectives

The Textile industrial wastewater has become a leading source of water pollution due to diverse nature of pollutants present in the effluents which are hazardous and toxic. Approximately, 280,000 tons of the textile dyes are discharged into water sinks through textile effluents. So (AOPs) is an effective method used for wastewater treatment. Heterogeneous photocatalysis by a semiconductor is a new, operative, and rapid method for the removal of impurities from industrial leftover water using $CuCo_2O_4$

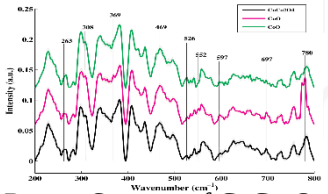


Mechanism of Photocatalysis

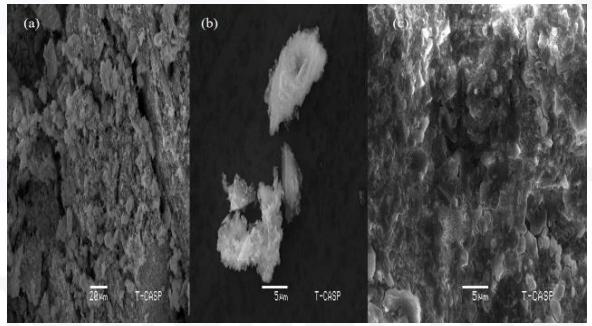
Experimental and Results/Discussion



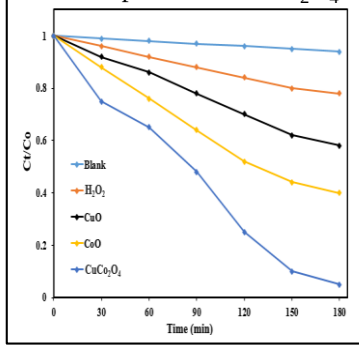
Fabrication of $CuCo_2O_4$

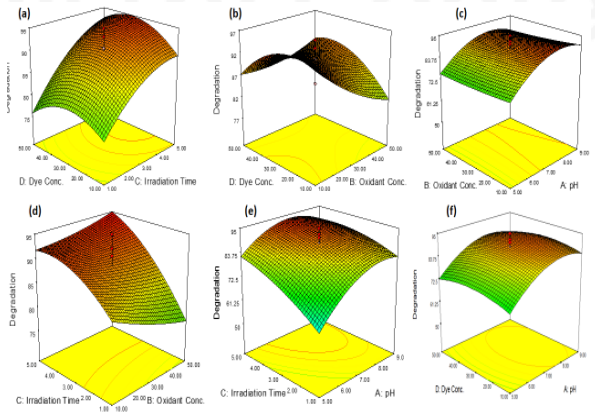


Raman Spectra of $CuCo_2O_4$



SEM of $CuCo_2O_4$ nanocomposite





3D plot of $CuCo_2O_4$ using RSM

Conclusion

Form the above results, it is concluded that **$CuCo_2O_4$** is more efficient for the degradation of dye. The results revealed that at optimized condition more than 87% degradation could be achieved. The results of this study predicted that advance oxidation process (AOPs) could be considered as one of the most effective process for treatment of Industrial Effluents by optimizing reaction condition by RSM

Reference

1. M. Mohsin, I. A. Bhatti, A. Ashar, A. Mahmood, Q. ul Hassan and M. Iqbal. *J. Mater. Res. Technol.* 2020, *9*, 4218.

2. M. Ahmad, I. Bhatti, K. Qureshi, N. Ahmad, J. Nisar, M. Zuber, A. Ashar, M. Khan and M. Iqbal. *J. Mol. Liq.* 2020, *301*, 112343.