

## **Abstract**

Binary mixed metal oxides  $\text{CeO}_2\text{-Co}_3\text{O}_4$  were synthesized by hydrothermal method. The structure and morphology of binary metal oxides studied by XRD, Raman and SEM techniques. Photocatalytic performance were examined by dye degradation studies of Methylene Blue (MB) and Methylene green (MG) dyes. The removal of dye through the process was reached upto 54.6% for methyl green and 86.6% for methyl blue which shows that composites are 1.60 times more efficient for methyl blue than for methyl green. Conclusively it was assessed that there were synergistic effect between two metal oxides as the degradation performance of  $\text{CeO}_2$  and  $\text{Co}_3\text{O}_4$  composite was good due to enhanced electron transfer between two metal oxides.