Conclusion

The results of these studies indicate that TiO₂ can efficiently catalyze the degradation of variety of organic compounds in the presence of light. The results also indicate that degradation of the pollutant could be influenced by a number of parameters such as type of photocatalyst, pH, substrate and catalyst concentration and in the presence of electron acceptors beside molecular oxygen.

The photocatalyst, Degussa P25 was found to be more efficient for the degradation of different systems studied in this thesis. The addition of electron acceptors has not always been found to enhance the degradation rate. The observations of these investigations clearly demonstrate the importance of choosing the optimum degradation parameters to obtain a high degradation rate, which is essential for any practical application of photocatalytic oxidation processes. The best degradation condition depends strongly on the specific kind of pollutant. The mineralization rate has been found to be slower then the decomposition rate due to the formation of intermediate products formed during the degradation process. Identification of intermediate products using GC/MS analysis technique formed during the photooxidation process were useful source of information for the degradation pathways.