
Vohra, Muhammad S. \textsuperscript{1} vohra@kfupm.edu.sa
Malik, Ayed A. \textsuperscript{1}
Al-suwaiany, Mohammad S. \textsuperscript{1}
Bukhari, Alaadin A. \textsuperscript{1}

Abstract:
Use of titanium dioxide (TiO\textsubscript{2}) assisted photocatalytic degradation (PCD) process was studied for the removal of aqueous phenol in presence of oil, lead, cyanide, and ammonia. Both UV light and TiO\textsubscript{2} were required for effective removal of phenol from the aqueous phase. For the phenol-only study, near complete phenol removal was noted within 6 h of reaction time. The presence of the other co-pollutants was generally noted to reduce the overall phenol removal (at 7 h reaction time) from the aqueous phase. For the mixed phenol and ammonia PCD systems at 10 and 5 ppm concentrations respectively, an increase in pH\textsubscript{i} value was noted to reduce and enhance phenol and ammonia PCD respectively. Nevertheless the overall ammonia removal at pH\textsubscript{i} 11 generally decreased with an increase in the ammonia concentration. Several mechanisms explaining the trends as noted in the present work have been discussed.