

CHAPTER 4: CONCLUSION

A series of anilinoquinoline with different substituent at anilino aromatic group has been synthesized through substituted reaction. Two piperidinoquinoline derivatives were also have been synthesized in the similar way. Quinoline derivatives were synthesized from 2-chloroquinoline (**22**) and a series of piperidines and anilines by refluxing in ethanol for 5-8 hours. NMR, IR, GCMS and X-ray studies were carried out to confirm the structure of the compounds. Selected products were further investigated under fluorescence spectroscopy. A complete change in the intensity of fluorescence occurred with a change of solvent polarity from ethylacetate, tetrahydrofuran, chloroform and isopropanol. The trends show that fluorescence intensity increases with decreasing polarity of the solvents suggesting by effect of hydrogen bonding.

The study on delayed fluorescence of **28** and **36** show an increase in fluorescence intensity with time due to the delayed fluorescence that occurs, whereby **48** decreases with time due to the quenching effect of oxygen. Concentration studies of compound **28**, **36** and **48** shows that fluorescence intensity increases with increasing concentration from 10^{-7} to 10^{-4} M. The pH effect result shows lower fluorescence intensity or non-fluoresce intensity in acidic and basic condition and fluoresced highly in neutral condition for the compound studied This observation is believed to be due to the fluorescence solvatochromism, which is strong under neutral conditions and relatively weak in acid or base.

The results of solvent effect and pH of the solution shows consistency where amino group easily interact with the environment and quenched their fluorescence.