

Chapter V

Conclusion

The Ternai reaction between p-ethylbenzaldehyde and benzoyl cyanide in an etheral solution and saturated with hydrogen chloride gave of 4-chloro-2-(4'-ethylphenyl)-5-phenyloxazole in 68 %yield. Bromination by N-bromosuccinimide followed by dehydrobromination with KOH in ethanol gave 4-chloro-2-(4'-vinylphenyl)-5-phenyloxazole; 4-Cl-(vinyl)-PPO. The spectroscopic data indicates that the required oxazoles have been obtained.

Bulk copolymerization of 4-Cl-(vinyl)-PPO with styrene using AIBN as an initiator at 70 °C was carried out at eight different mol ratios. 4-Cl-PPO can be incorporated into the copolymer to a smaller extent than styrene. The UV absorption and fluorescence emission spectra shows that photophysical processes occur in the copolymer. The results maybe summarized as follows:

(1) Copolymer in CH₂Cl₂

Phenyl chromophore transfer the excitation energy to the oxazole moiety as a result of intramolecular interaction.

(2) Copolymer films

- Energy transfer occurs at low concentration of 4-Cl-PPO.
- Excimer emission appears at 460 nm as a result from both intra and intermolecular interaction of 4-Cl-PPO chromophore. Excimer obsrved is proportion to concentration of 4-Cl-PPO in the copolymer.

The experimental quantum yields are related to the number of photons absorbed by comparison with standard. The result indicated that the interaction is evident between the phenyl and 4-Cl-PPO chromophores even at low concentrations



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