

**CONCLUDING REMARKS**

**FUTURE PLANS**

**APPENDIXES**

**LIST OF PUBLICATIONS**

## CONCLUDING REMARKS

Focussing on the application of industrial radiation process, the commercially preferred techniques are gamma rays and electron irradiation techniques. This is because of their

- (i) Economy and
- (ii) High cross-section or smaller density

However, unlike electrons gamma rays can not be focussed, bent or scanned. Hence, the product irradiation geometry is somewhat inflexible and results in radiation use efficiencies generally of the order of 40 to 50% of gamma rays.

Other advantage for electrons is, by varying the electron energy and beam area, the depth and the area of the grafted region can be controlled respectively. In addition, irradiation time is short for high energy electrons and also there exists a possibility of electron irradiation in vaccum.

## FUTURE PLANS

There exists a possibility of studies on Dosimetry, Charge Dynamics and Radiation Induced Grafting of Electrons of different energies in vacuum as well as at different higher temperatures. And the results can be compared with the present work performed at room temperature (around 25°C) and at normal pressure in air medium.

Also the modification of polymer properties can be explored using high energy ion beams. Polymers, when exposed to heavy ions, the nuclear energy deposition leads to formation of amorphous carbon structure whereas electronic energy deposition leads to formation of graphite like structure. Hence a film having the best properties of polymers with composite effects of ion and electron bombardment making a suitable choice for desired applications and convenience.

Polymers property can also be modified by chemical doping of Li, B and Na with subsequent etching process. This work is the extension of the present work discussed in Chapter-5. With suitable and economical dopant, optical, electrical and mechanical properties of the selective polymers can be altered.

Radiation Induced Grafted Polymers can explore a possibility of using them as load bearing structural materials for houses, buildings, cars, boats and aircrafts in future. It all depends largely on the magnitude of the increase in their strength and stiffness. The chemical feature involved is by introducing crosslinks with suitable monomers and then by having a ring shaped structure.