

## CHAPTER V

### CONCLUSIONS

Vinylchloride monomer (VCM) was successfully introduced in cholic acid (CA) guest free crystal by using guest adsorption process. VCM was stabilized in CA channel as observed from the changing of XRD pattern, guest releasing peak in DSC thermogram, and CH<sub>2</sub>, C-Cl peaks in FT-IR. Inclusion polymerization of CA-VCM compound by  $\gamma$ -irradiation gave the syndiotactic rich PVC polymer as determined by qualitative and quantitative analysis. While commercial PVC was identified to be atactic polymer.  $\gamma$ -Ray radiation process led the inclusion polymerization, which could be confirmed by the peaks of PVC in FT-IR after CA-VCM crystal was radiated. By comparison inclusion PVC with PVC obtained from silica gel adsorbing VCM, it was clarified that inclusion polymerization of CA-VCM brought high molecular weight PVC. The long postpolymerization time was found to be a main factor to achieve high molecular weight of inclusion PVC.  $\gamma$ -Ray amount played the role to control PVC yield and the degree of polymerization.