

## CHAPTER V

### CONCLUSIONS

PTFE tape can be stretched into a thin film and can be employed as acquiring the home-made IR card for various infrared investigations. The thin PTFE film can be used effectively as simple support to obtain IR spectra. The card can easily be used with the FT-IR spectrophotometer while no additional accessories are required.

The home-made IR cards are very useful for spectral acquisition of viscous liquid and solid samples. The amount of time needed to obtain a good spectrum is much shorter than that entailed in multiple preparations of mulls or KBr pellets. Particularly, the created home-made IR card from a thin PTFE film was successfully employed for determination of volatile liquid and thin film samples. The spectral acquisition of thin-film sample has to be done within a short period of time and non-destruction of sample. In case of volatile liquid sample, the capillary-thin-film can exist in between the IR card cells within a short period time. However, the home-made IR card exhibits potential applications for qualitative analysis.

The home-made IR card technique is simple, rapid and economic. High quality spectra are obtained if sample preparation is done carefully. In addition, the home-made IR cards can be used to perform many of the convenient infrared investigations of liquid and solid samples.

#### **Suggestion for future work**

The suggestion for future work is to develop the surface of the home-made IR card for achieving a high efficiency for various types of samples. For instance, coating the Fluorolube onto the surface of the home-made IR card for analyzing toxic gas adsorbed on particle dust in the air.