**A and F stars with circumstellar dust**

**Abstract.** In this work we have studied the A-F stars with circumstellar dust. From the IRAS (Infra Red Astronomical Satellite) colours we have selected objects with detached shells. Some of them show both warm (1000K) and cold (100K) dust. The warm dust indicates recent mass loss phase of the post-AGB star. The cold dust corresponds to the expanded and cooled dust shell from the earlier mass loss episodes. In our selected samples, many of them were post AGB stars and also few of them were pre-mainsequence Herbig Ae/Be and mainsequence Vega like stars.

In the first chapter a general introduction to the thesis topic is discussed. We give a brief introduction to stellar and chemical evolution of low and intermediate mass stars. We discuss the properties of post-AGB stars. We give a list of the selected samples. We also give brief introduction on the individual objects. We present some observational results of these objects from the low and high resolution spectra obtained from Vainu Bappu Observatory (VBO), Kavalur.

In the chapter 2 we discuss how the observations and analysis for the work is been carried out. We give the specifications of the telescopes and the instruments from which the data is been obtained. We also explain different theoretical stellar atomospheric models and spectrum synthesis codes which were used for the analysis.

In chapter 3 the spectroscopic results from the high resolution spectra of HD 101581 which is A-type post-AGB supergiant are discussed. Chemical composition, line indentifications and analysis of various emission and absorption lines are presented.

In chapter 4 we discuss the chemical composition and the stellar atmospheric parameters of the post-AGB star HD 331319 from the high resolution optical spectra. We give the line identification of the absorption lines in the optical spectrum.
In chapter 5 the atmospheric parameters and chemical composition of carbon rich post-AGB star HD 187885 are discussed.

In chapter 6 we discuss the spectrum of IRAS 10215-5916. It seems to show a composite spectrum.

In chapter 7 we discuss atmospheric parameters and chemical composition of HD 168625, which show IRAS colours similar to post-AGB stars. We discuss the evolutionary status of this object.

In chapter 8 we study the line profile variation in a Herbig Ae/Be star HD 31648.