# CHAPTER SEVEN

## CONCLUSION AND FUTURE SCOPE

## 7.1 CONCLUSION

The first chapter describes the introduction and all the basic concepts related to microstrip patch antenna design. Literature review and chapter organization are also provided in this chapter.

The second chapter includes additional coplanar multiresonator microstrip patches with gap coupled to the radiating and non radiating corners of a single feed rectangular printed patch, a wideband patch antenna have been designed and analyzed. It has been observed that by using such a design, the bandwidth can be increased many times as compared to a single rectangular printed patch.

In third chapter, it has been observed that the bandwidth of the rectangular printed patch antenna can also be enhanced by introducing truncated corners in the feed patch or in parasitic patch to the radiating or non radiating corners of a rectangular printed patch.

The fourth chapter includes the meandering method to the ground surface of a printed patch antenna design. The antenna's ground surface can be meandered or defected by inserting several slits or slots can be introduced at the ground surface. The obtained bandwidth for a reduced size antenna design with meandered or defected ground surface can be found more as compared to the undefected ground surface or defected printed patch antenna design.

The fifth chapter includes tunable and dual band microstrip patch antennas, which provides another option to a wideband antenna, in which an antenna with a less bandwidth is tuned over a large frequency range.

The sixth chapter includes some increased substrate height, reduced size microstrip antenna. These multilayer configurations are suitable as array elements.

## 7.2 FUTURE SCOPE

The further extension in this thesis includes trying more designs to obtain a more compact patch antenna by varying the dimensions of the patch and substrate. The printed patch antenna is made up of a single element or using array elements. In addition, they are used to scan the beam of an antenna system, increase the directivity, increase the return-loss and perform various other functions which would be difficult with any one single element. Therefore different array structures may be investigated to achieve better performance.