

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

This report has described the study of the design, construction and test of a simple low cost portable solar radiometer which then be compared with commercially available instrument for calibration. Several models were tested by using a thermometer and a blackened metal disk in such a way that they were easy to make, low cost and convenient to operate. The details of final design were shown in item 3.1 of chapter III. It was concluded that the proposed radiometer for practical work be a regular unit (1-5), equipped with a stainless steel disk of 0.5 mm thick and 12 cm. diameter. Disk coating was best done by PYLOX (black spray painting). By comparing the radiometer with a Bi-metallic Pyranometer which was used as the standard, the conversion constants were calculated for instantaneous reading and hour reading. Its accuracy was satisfied and good enough for meteorological work.

5.2 Recommendations

For further study, the following recommendations are made.

1. Study should be made to evaluate the long-term performance of the radiometer.

2. Test and analysis should be carried out to describe heat transfer models of the radiometer.

3. Study should be carried out for further refinement in the designs of the radiometer by using low cost material to increase simplicity of the assembly.