5. Design and Implementation of a Dual Axis Solar Tracker for Maximum Power:

This system was developed to control the position of the solar tracker automatically in order to gain maximum solar power. It was designed to have two degree of freedom and it was achieved by using a combination of servo and stepper motors. The position of maximum solar power was determined using 4 LDR sensors.

Fig: Two Axis Solar Tracker.

The solar tracker was tested alongside with a single axis and test results were compared in the table below.

Time of the day	Single axis Power(watt)	Dual Axis power(watt)	Percentage of power gain
9.00am	5.312	7.293	38%
10.00am	6.438	7.913	23%
11.00am	7.449	10.176	36%
12.00pm	8.282	10.633	28%
1.00pm	8.901	10.105	14%
2.00pm	8.036	9.159	13%
3.00pm	6.956	8.651	25%
4.00pm	5.611	8.112	45%

Table: Power Comparison between Single Axis and Dual Axis Solar Tracker.