

CHAPTER -7

Conclusion and Recommendation

7.1 Conclusions

Development of the solar three-wheeler is a blessing for the disabled people and will have significant change in their mobility as well as life style. The overall designing of the solar three-wheeler is done with a view to provide maximum possible facilities to its user - the disabled people.

Automation by solar power, biomechanics, comforts and safety get maximum priority in designing. Other attractions of this solar three-wheeler are flexible and modular designing. Because of flexibility and modularity in design, desired modification (change of wheels, seat, height of the chassis etc.) if needed, can easily be done to meet up any individual requirement. As a “stand alone system”- all the disabled people at any corner of the country can enjoy the benefits or advantages of this solar three-wheeler for their daily use. Though the solar three-wheeler has been designed and developed in consideration of the disabled people of Bangladesh but disabled people at different corners of the world can use it provided that there is sufficient amount of solar radiation.

Finally it is important to mention that the solar three-wheeler is not only environment friendly transport for disabled people but also prevent the secondary disability as auto power transport. So, it is a complete solution for mobility of the disabled people of the society.

7.2 Limitations

Thus the attempt made in fabricating the Solar Powered Wheel chair is successful. However the following limitations are observed:

- The Panels are sensitive to vibrations.
- This vehicle is more comfortable in plane road.
- It may not perform well during consecutive cloudy/rainy days.
- The volume/size of the solar panel cannot be in-creased for increased energy demand due to limited space over head (roof).

7.3 Recommendations

The recommendations are as follows:

- The proposed solar wheel chair may be implemented commercially for physically challenged people.
- Steps may be taken to minimize the above mentioned limitations by further researches.
- Nickel-cadmium batteries though expensive are ideally more suited to PV system than the lead-acid battery and can be used for better performance; it also has less of weight and no damage if the battery remains fully discharged for long periods
- The recharging time can be minimized by increasing the capacity of the Solar Panels.

7.4 Future Work

- The design of the chair if modified can accommodate a mechanism for climbing the stairs. By increasing the capacity of the battery, a single panel can replace smaller ones.
- Energy efficient solar wheel chair may be designed by future researches to reduce the weight of the wheel chair.