DECLARATION

This is to certify that the work presented through this paper titled "Solar Powered Wheel Chair for Physically Challenged People" is the result of our research supervised by M Mahbubur Rahman and Dr. M Shamim Kaiser.

It is also declared that neither of this paper nor any part therefore has been submitted anywhere else for the award of any degree, diploma or other qualifications.

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DEDICATION

Dedicated to

Our great Freedom Fighters

Who laid down their lives for the independence of our country in 1971

ABSTRACT

This study deals with the designing of a solar-powered motor driven three wheeler chair type vehicle for physically disabled people. After a short outline on the importance of mobility for physically challenged people, the study will focus on solar energy technology; diversify utilization of solar-powered devices, techno-economic aspect of designing and constructing one solar-powered wheel chair.

One of the best inventions in the medical field that helped both the elderly and the handicapped is the mobility vehicle. The fact that they are no longer depending on someone else to perform daily duties is a big step forward. This paper provides idea of currently available three-wheelers for disabled people and proposes a new improved design of a solar powered three-wheeler suitable for countries like Bangladesh. This three-wheeler is operated by solar power and suitable for outdoor use. Solar power option enables the disabled people to use it at any place, even in remote areas where there is no electricity. A general survey had been conducted on disabled people using wheel chairs and manual three-wheelers and the opinions of the experts working with the disabled people are also taken in to consideration to identify the needs and requirement for designing the solar three-wheeler. The proposed solar three-wheeler is meant to match and exceed the conventional three-wheeler's facilities with a more intelligent and efficient design. A solar panel to produce solar electricity, a battery system for preserving electric power, an efficient motor, cushion seat, all terrain tires are used for this solar three-wheeler. Due consideration and attention is given to better maneuverability, effective use of solar energy, biomechanics and comforts, increased suspensions, all terrain traffic ability, ease of use etc. while designing this solar three-wheeler for physically disabled people of the country.

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LIST OF ABBREVIATION

SPV	Solar Powered Vehicle
PCP	Physically Challenged People
AC	Alternating Current
BDT	Bangladeshi Taka
BPDB	Bangladesh Power Development Board
BRAC	Bangladesh Rural Advancement Committee
CO2	Carbon Dioxide
DC	Direct Current
ESMAP	Energy Sector Management Assistance Program
GEF	Global Environment Facility
GHG	Greenhouse Gas
GOB	Government of Bangladesh
GTZ	German Technical Cooperation
HDI	Human Development Index
IDCOL	Infrastructure Development Company Limited
IEA	International Energy Agency
IPCC	Intergovernmental Panel on Climate Change
kW	Kilowatt
kWp	Kilowatt – peak
kWh	Kilowatt Hour
LED	Light Emitting Diode
MDG	Millennium Development Goals

MW	Megawatt
NGO	Non-governmental Organization
PV	Photovoltaic
REB	Rural Electrification Board
RET	Renewable Energy Technology
SELF	Solar Electric Light Fund
SHS	Solar Home System
TV	Television
W	Watt
WHO	World Health Organization