Synopsis Report Presentation

on

" Photovoltaic (PV) Powered Dual Thermoelectric Air Conditioning System "

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INTRODUCTION

- Conventional air conditioning system are energy intensive , costly and cause global warming & ozone layer depletion.
- The proposed air conditioning system uses solar power for its operation.
- It uses peltier modules instead of refrigerants.
- Hence,it is enegy efficient,cost effective and provides both cooling and heating facility in one system.

LITERATURE REVIEW

YEAR	AUTHOR	LIMITATION	PROPOSED WORK
2013	W.M. Elzanati, Prof. S.Y. Ameen	In this refrigerant used for cooling which are harmful to the enviroment	In this paper two technologies are used i.e. solar air conditioning and electrical air conditioning system technology to reduce peak load and to avoid risks of peak load.
2021	B.Zhao,Z.Zhao,M.Huang,X.Zhang,Y.LiandR.Wang	In this refrigerant are used and it provides only cooling facility	Describes analysis of combining dynamic programming (DP) and stochastic model predictive control (MPC) using forecast data as stochastic variables providing cooling supply satisfaction and cost minimization
2022	R. Buchalik, G. Nowak	Thermoelectric modules provide insufficient cooling in extreme temperatures	Thermoelectric modules are used in air conditioning system and overall performance is been analyzed

INFERENCES

- As we can see in the above refrences that in the conventional air conditioning systems referigerants are used for cooling which is harmful to the environment
- Thermoelectric modules are being used which consumes more power .
- Thermolectric modules provide insufficient cooling in extreme temperatures

AIMS & OBJECTIVES

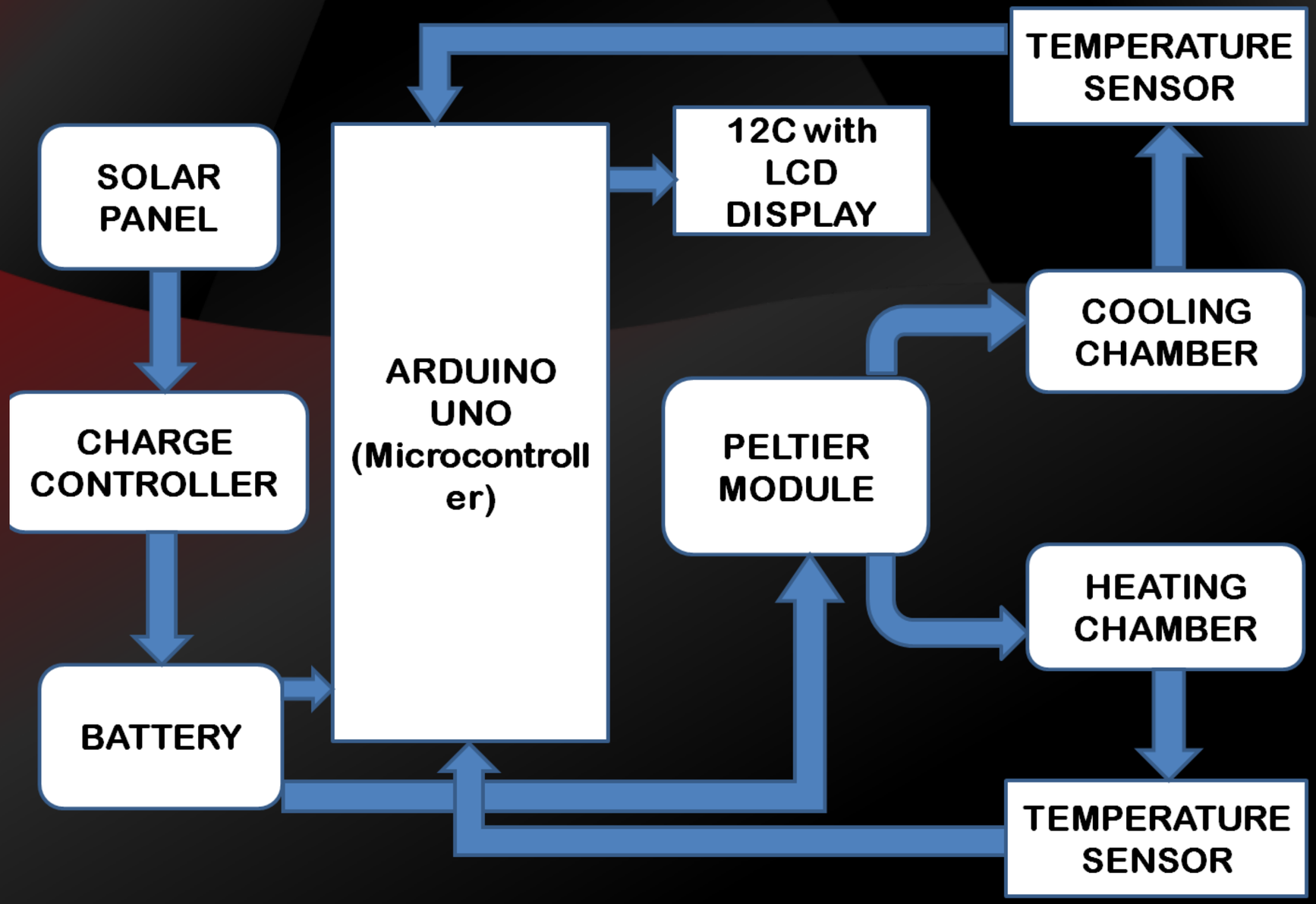
- **AIM**

The aim is to implement, develop and simulate a novel photovoltaic (PV) powered Dual thermoelectric air conditioning system having energy efficient approach to Control indoor temperature.

- **OBJECTIVES**

- Making of Schematic layout of the circuit and layout of PCB to visualize the connections of all the components using PROTEUS .
- Implementation of the circuitry on mechanical structure such as the dimension of plywood ,making drills ,and fixing the place of the mechanical components like heat sink with fan, peltier unit, solar assembly etc.
- Hardware implementation on PCB consists of Arduino ,temperature sensor with display, Peltier module ,CPU Fan ,solar panel.
- Software implementation of the algorithm in Arduino for controlling and maintaining the room temperature like low temperature as well as high temperature as per our requirement.
- Interfacing and final testing of the Photovoltaic Powered Dual Thermoelectric Air Conditioning System.

PROPOSED METHODOLOGY



ADVANTAGES

- Proposed air conditioning system is environment friendly .
- It provides year round comfort regardless of season.
- Energy conservative system as solar power used.
- Proposed PV powered system are more portable than conventional systems sue to their compact nature, ease of installation & cost effective

LIMITATIONS

- TEC units quickly become costly when implemented at large scale.
- Solar panel are subjected to weather conditions.

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Thank you!