SYNOPSIS OF THE PROJECT

**DESIGN AND DEVELOPMENT OF ARDUINO BASED SMART BATTERY MANAGEMENT SYSTEM**

Submitted by:

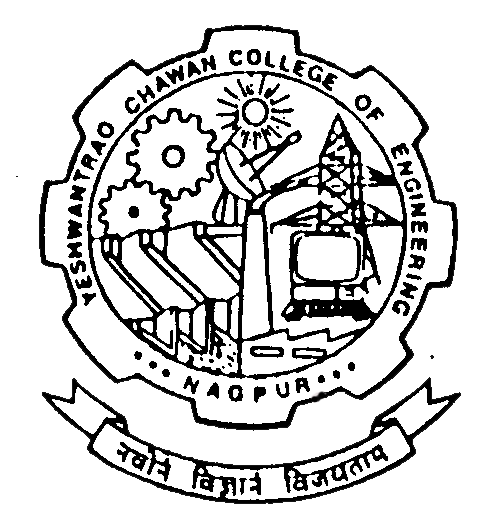
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2021 – 2022

**TITLE OF THE PROJECT:**

DESIGN AND DEVELOPMENT OF ARDUINO BASED SMART BATTERY MANAGEMENT SYSTEM

**AIM: -**

* In this project we are dealing with the Battery Management System are used in many industrial and automotive applications to make the battery operations more efficient.
* The main functions of a Battery Management System is Battery protection in order to prevent operations outside its safe operating area

**OBJECTIVES:**

* To increase the life span of li-ion based battery pack.
* To design an effective system with the help of Arduino Uno to monitor state of batteries.
* Cell Protection: Battery management system to provide overvoltage protection.
* Cell Balancing: The process of equalizing the voltages and state of charge among the cells when they are at a full charge.

**INTRODUCTION:**

Battery Monitoring System (BMoS) is an electronic system that monitors rechargeable battery cells or packs with various parameters, such as battery voltage, current and State-of-Charge (SoC). This system can be used to avoid overcharging or over-discharging of batteries to increase its shelf life. However, BMoS on the market is very expensive and not suitable for low cost embedded systems. As the Arduino Uno is widely used for low cost microcontroller boards, easy programming environment, and open-source platforms for building electronic projects, therefore, this study focuses on Arduino Uno BMoS based system.Diagram, schematic

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**PLANE OF PROJECT WORK:**

* Reducing the risk of fire hazards due to battery packs.
* Making it easier for average user to monitor the health of their battery packs.

**RESOURCES REQUIRED:**

* Arduino
* 3.7v li-ion battery
* mounted pcb
* voltmeter ammeter
* pnp transistor, zenor refrence diode, LED, resistor
* tl-431 ic-PINOUT, heat DISSPITOR, Lm317 in current MODE, lm317 in voltage mode
* dc ADAPTER

**Activity CHART:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Activity** | **July-Aug 2021** | **Aug-Sept 2021** | **Sept-Oct 2021** | **Oct-Nov 2021** |
| Literature Survey |  |  |  |  |
| Basic study of  project model |  |  |  |  |
| Simulation on analysis of  project |  |  |  |  |
| Design of hardware |  |  |  |  |
| Hardware |  |  |  |  |
| Conclusion and preparation of thesis |  |  |  |  |

**REFERENCES:**

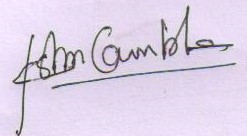
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[2] Authors: Nathan Scharich Brandon Schniter Anthony Herbert Md. Shafiul Islam June 2017 DOI:10.1109/TEMSCON.2017.7998405 Conference: 2017 IEEE Technology & Engineering Management Conference (TEMSCON)

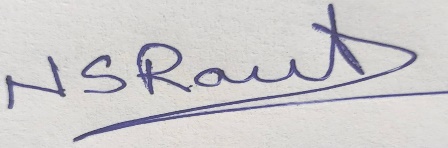
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**SIGNATURE OF STUDENTS SIGNATURE OF THE GUIDE**

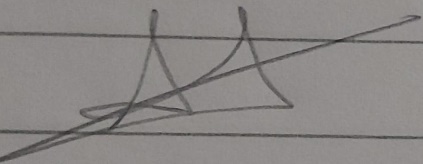
1. Himanshu Kamble

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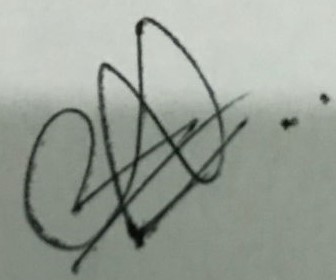
1. Ninad Raut



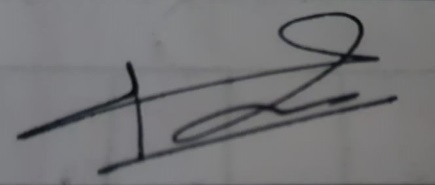
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