SHIVAJI UNIVERSITY, KOLHAPUR

Dr. D. Y. Patil Pratishthan's College of Engineering salokhenagar Kolhapur 2022-2023

DEPARTMENT OF ELECTRICAL ENGINEERING

CERTIFICATE

Certified that the Project topic entitled ·WEATHER MONITORING USING IOT" a Bonafide work carried out by **Vishakha, Vaishnavi, Akshay, Pratik, Suryakant** in partial fulfillment for the award of Degree of Bachelor of Technology in 8th Semester of the **SHIVAJI UNIVERSITY, KOLHAPUR** during the year **2022-2023**. It is certified that all corrections/ suggestionsindicated for Internal Assessment have been incorporated in the report deposited in theDepartment Library. The Project report has been approved as it satisfies the Academic requirement in respect of Project work prescribed for **BACHELOR OF TECHNOLOGY DEGREE**.

Prof. A. A. Prabhavalikar
(Guide)

Prof. Vidya N. A.
(H.O.D)

Dr. S. D. Mane
(Principal)

Mr M. S. Deshpande
(External Examiner)

Abstract

The system proposed in this paper is an advanced solution for monitoring the weather conditions at a particular place and making the information visible anywhere in the world. The technology behind this is the Internet of Things (IoT), which is an advanced and efficient solution for connecting things to the internet and connecting the entire world of things in a network. Here things might be whatever like electronic gadgets, sensors, and automotive electronic equipment. The system deals with monitoring and controlling the environmental conditions like temperature, relative humidity, and CO level with sensors and sends the information to the web page, and then plots the sensor data as graphical statistics. The data updated from the implemented system can be accessible in the internet from anywhere in the world.

SHIVAJI UNIVERSITY, KOLHAPUR

Dr. D. Y. Patil Pratishthan's College of Engineering

Salokhenagar, Kolhapur

2022-2023

DEPARTMENT OF ELECTRICAL ENGINEERING

DYP
SALOKHENAGAR

CERTIFICATE

Certified that the Project topic entitled **"SOLAR POWER SYSTEM MONITORING USING IoT"** a Bonafede work carried out by **Pratiksha, Pratik, Sachin, Aksa, Tejashree** in partial fulfillment for the award of Degree of Bachelor of Engineering in 8th Semester of the **SHIVAJI UNIVERSITY, KOLHAPUR** during the year **2022-2023**. It is certified that all corrections/ suggestions indicated for Internal Assessment have been incorporated in the report deposited in the Department Library. The Project report has been approved as it satisfies the Academic requirement in respect of Project work prescribed for **BACHELOR OF ENGINEERING DEGREE**.

Prof. S. S. Deshpande
(Guide)

Prof. V. N. Abdulpur
(H.O.D)

Dr. S. D. Mane
(Principal)

Mr M.J.Deshpande
EXAMINERS

ABSTRACT

The Internet of Things has a vision in which the internet extends into the real world, which incorporates everyday objects. The IoT allows objects to be sensed or controlled remotely over existing network infrastructure, creating opportunities for pure integration of the physical world into computer-based systems, and resulting in improved efficiency, accuracy and economic benefit in addition to reduced human intervention. This technology has many applications like Solar cities, Smart villages, Micro grids and Solar Street lights and so on. As Renewable energy grew at a rate faster than any other time in history during this period. The proposed system refers to the online display of the power usage of solar energy as a renewable energy. Smart Monitoring displays daily usage of renewable energy. This helps the user to analysis of energy usage. Analysis impacts on the renewable energy usage and electricity issues.

Solar power system monitoring using IOT this project DHT 11 act as a sensor input after its signal goes to the ESP32, its output is finally seen on the IOT page bythe ESP 32 WIFI module.

SHIVAJI UNIVERSITY's

Dr. D.Y. Patil Pratishthan's College of Engineering Salokhenagar, Kolhapur

DYP
SALOKHENAGAR

Certificate

To whomsoever it may concern

This is certified that the project report entitled "Design, Analysis and Hardware Implementation Of DC-DC Buck Converter and Boost Converter" has been submitted by,

NAME	PRN NO
Arvind Bajirao Patil	2020079817
Dhanashree Sanjay Patil	2020079868
Nikita Sambhaji Patil	2020079865
Sammed Sanjay Patil	2020079883
Santosh Chougonda Patil	2020079879

as partial fulfilment of B-Tech final year course in Electrical Engineering under the **Shivaji University Kolhapur during the academic year 2022-23.**

Place- Kolhapur
Date- 06-06-2023

Guide
Prof. Londhe A.A.

External Examiner
Mr. M.S.Deshpande

Head of Department
Prof. Vidya N.A.

Principal
Dr. Mane S.D.

Abstract

The DC-DC step down converter designed at the transistor and integrated circuit level uses PWM supplying constant voltage. The converter uses pulse width modulator (PWM) to improve efficiency and longevity of the battery system. The PWM control switches (transistor) that enables or disables flow via digital signals to control the step-down process. The DC-DC Buck converters 24 v DC input to 12 v Output. The converters used for stepping down voltage is called buck converters. Buck converters is Designed, analyzes, simulated and developed. The proposed model of Buck converter of a main converter circuit with component Switch, Inductor, diode, capacitor and load. This model can accurately predict the steady state behavior average load current and load voltage across the load single switch DC-DC Converter. The Buck converter produces voltage ranging from the input voltage to voltage. It is widely used throughout the industry down to zero to convert higher DC input voltage into lower DC output voltage.

SHIVAJI UNIVERSITY, KOLHAPUR

Dr. D. Y. Patil Pratishthan's College of Engineering

Salokhenagar, Kolhapur

2022-2023

DEPARTMENT OF ELECTRICAL ENGINEERING

DYP

SALOKHENAGAR

CERTIFICATE

Certified that the Project topic entitled "AN INDUSTRIAL ENERGY AUDIT FOR IMPROVEMENT OF POWER FACTOR" a Bonafide work carried out by **Sushant, Prathamesh, Rushikesh, Saumya** in partial fulfillment for the award of Degree of Bachelor of Technology in 8th Semester of the **SHIVAJI UNIVERSITY, KOLHAPUR** during the year **2022-2023**. It is certified that all corrections/ suggestions indicated for Internal Assessment have been incorporated in the report deposited in the Department Library. The Project report has been approved as it satisfies the Academic requirement in respect of Project work prescribed for **BACHELOR OF TECHNOLOGY DEGREE.**

Prof. A. A. Prabhavalikar
(Guide)

Prof. Vidya N. A.
(H.O.D)

Dr. S. D. Mane
(Principal)

M.S. Deshpande
(External Examiner)

ABSTRACT

Now a day's demand for the power sector is increasing subsequently. Everyone needs uninterrupted, reliable power supply. Cost for the generating the electrical energy is raising due to non-availability of raw materials like coal, fuel, water etc. Major energy sources like coal, fuel is reducing drastically, as they are the nonrenewable. In such cases there is regular loss of energy in the transmission and end user like industries. Industries are operating with inductive loads like transformer, motors, inductive furnaces etc. where most of energy is being wasted because of low 'Power Factor'. Prevention of energy being wasted is most important task.

Waste energy capacity is also known as poor power factor, is often overlooked. It can result in poor reliability, safety problems and higher energy costs. The lower power factor, the less economically system. The actual amount of power being dissipated as function of resistance in the circuit is called true power (KW). Reactive loads like inductive, capacitive make up power called reactive power (KVAR). The linear combination of true power and reactive power is the apparent power (KVA). Electrical system becomes unstable because of factor called reactive power causes the low power factor.

Power factor correction is usually achieved by adding capacitive load to offset the inductive load present in the power system. The power factor of power system is constantly changing due to size and number of motors being used at one time. This makes it difficult to balance such loads.

SHIVAJI UNIVERSITY's

Dr. D.Y.Patil Pratishthan's College of Engineering Salokhenagar, Kolhapur.

Certificate

To whom it may concern

This is certified that the project report entitled "AUTOMATIC BOTTLE FILLING SYSTEM USING PLC" has been submitted by,

NAME	PRN NUMBER
Saunmi Anand	2019087350
Karan Ajit Shinde	2020079866
Prajwal Tanaji Shinde	2019087354
Abhishek Anil Shivsharan	2020079873
Rasika Ganesh Suryawanshi	2020079861

As partial fulfillment of B-Tech year course in Electrical Engineering under the **Shivaji University Kolhapur during the academic year 2022-23.**

Place- Kolhapur

Date-

Signature Of
Project Guide

Signature Of
H.O.D

Signature Of
Principal

Signature Of
External Examiner

ABSTRACT

The objective of our project is to design, develop and monitor "Automatic bottle filling system using PLC". This work provides with a lot of benefits like low power consumption, low operational cost, less maintenance, accuracy and many more. This project is based on Industrial automation and is a vast application used in many industries like mineral water milk industries, chemical, food, and many industrial manufacturers. **A prototype has been developed to illustrate the project.**

Filling is the task that is carried out by a machine and this process is widely used in many industries. In this project, the filling of the bottle is controlled by using a controller known as PLC which is also the heart of the entire system. For the conveyor system, a dc motor has been selected for better performance and ease of operation. A sensor has been used to detect the position of the bottle. In our project we have used less number of system hence the overall cost has been reduced to an extent. Ladder logic has been used for the programming of the PLC, which is the most widely used and accepted language for the programming of the PLC. The PLC used in this system is a Siemens S7 – 1200 which makes the system more flexible and easy to operate.

SHIVAJI UNIVERSITY's

Dr. D.Y.Patil Pratishthan's College of Engineering Salokhenagar, Kolhapur.

DYP
SALOKHENAGAR

Certificate

To whom it may concern

This is certified that the project report entitled **"AUTOMATIC BOTTLE FILLING SYSTEM USING PLC"** has been submitted by,

NAME	PRN NUMBER
Sana Javed Sutar	2020079876
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As partial fulfillment of B-Tech year course in Electrical Engineering under the **Shivaji University Kolhapur during the academic year 2022-23.**
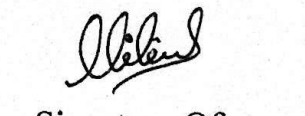
Place- Kolhapur

Date-

Signature Of
Project Guide

Signature Of
H.O.D

Signature Of
Principal

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SHIVAJI UNIVERSITY's

Dr. D. Y. Patil Pratishthan's College of Engineering Salokhenagar, Kolhapur.

Certificate

To whomsoever it may concern

This is certified that the project report entitled "ENERGY AUDIT OF DYPSN CAMPUS" has been submitted by,

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as partial fulfillment of B-Tech final year course in Electrical Engineering under the **Shivaji University Kolhapur during the academic year 2022-23.**

Place- Kolhapur

Date-

Guide	**External Examiner**	**Head of Department**	**Principal**
Prof. Londhe A.A.	Mr. M. S. Deshpande	Prof. Vidhya N.A.	Dr. Mane S.D.

Abstract

Today, the energy consumption is increased very sharply. This project is just one step towards destination of achieving energy efficiency and would like to emphasis audit is continuous that an energy process. In this project we discuss about possible actions firstly i.e. How to conserve & efficiently utilize our scarce resources & identified their savings potential. Second thing is important to implement on it. In this thesis, an energy audit study of plant to determine how and where energy is used and to identify the methods for energy savings. We have done project on Energy Audit. Detailed Energy Audit. Detailed Energy is carried is out in three phases a) PreAudit Phase b) Audit Phase c) Post Audit Phase.

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Dr. D.Y. Patil Pratishthan's College of Engineering Salokhenagar, Kolhapur.
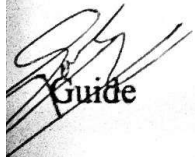

Certificate

To whom it may concern

This is certified that the project report entitled "AUTOMATIC BOTTLE SORTING SYSTEM USING PLC" has been submitted by,

NAME	PRN NUMBER
Tanmay Rajendra Chavan	2019087352
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Vishwajeet Sukhdev Koravi	2020079882

As partial fulfilment of B-Tech year course in Electrical Engineering under the **Shivaji University Kolhapur during the academic year 2022-23.**

Place- Kolhapur
Date- 06-06-2023

Guide   External Examiner   Head of Department   Principal

2

Abstract

The objective of our project is to, in today's world of technology and due to speed running industries, the production rate has increased tremendously. Generally manufacturing industries keep manufacturing same models with little variation in shape, weight, and quality. And here sorting plays an important role.

In such case industries can't bare human errors for sorting this product. Thus, it become necessary to develop Low Costs Automation (LCA) for sorting these products in accurate manner. Industrial automation mainly focuses on developing automation having low cost, low maintenance, long durability and to make systems use friendly as possible. Finally, here we have developed a LCA system for sorting the light weight objects on the basic of size, shape variation using dc motor. Which is controlled by Programmable Logic Controller (PLC) and the conveyor in the system passes the objects in front of sensor and thus sorting logic is decided.

This project is aimed at automating the sorting of bottle. This project will automatically sort bottle according to their height by using IR sensors. Then it sorts the bottle on the designated portion of conveyor belt and the overall system is liberated from human intervention. The system is comprehensive and efficient, thus can help in automating the sorting of bottles.

SHIVAJI UNIVERSITY's

Dr. D.Y. Patil Pratishthan's College of Engineering Salokhenagar, Kolhapur.
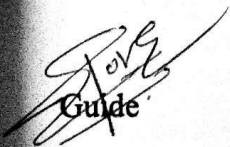
Certificate

To whom it may concern

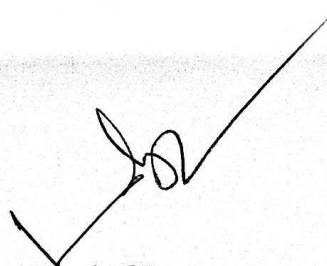This is certified that the project report entitled "AUTOMATIC BOTTLE SORTING SYSTEM USING PLC" has been submitted by,

NAME	PRN NUMBER
Shradha Vasant Gaikwad	2020079877
Smruti Sanjay Gaikwad	2020079885
Pooja Bhagwan Ghatage	2020079855
Dhampal Somanath Goderao	2020081620
Rohit Shankar Gondil	2020079887

As partial fulfilment of B-Tech year course in Electrical Engineering under the **Shivaji University Kolhapur during the academic year 2022-23.**

Place- Kolhapur
Date- 06-06-2023

Guide   External Examiner   Head of Department   Principal

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Dr. D. Y. Patil Pratishtha's

College of engineering, salokhenagar, Kolhapur

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CERTIFICATE

To certify that,
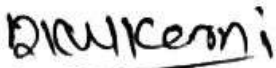
Name Of Candidate	PRN NO.
1. AJIT BHIMRAO GORE	2019087267
2. ADITYA SANJAY JASUD	2020079858
3. OMKAR ASHOK JAMDADE	2020081626
4. SAKSHI DILIP INGAWALE	2020079819
5. SWATI VISHWAS GURAV	2019087356

This is certified in the project report entitled "Motion Control with Intelligence" As partial fulfilments of the **B.Tech Engineering course in Electrical Engineering** under Shivaji University, Kolhapur during the year 2022-23.

Place – Kolhapur

Date –

Prof.S.R.Kulkarni

(Project guide)

Prof.Vidya.N.A

(H.O.D)

Mr.M.S.Deshpande

(External Examiner)

Dr.S.D.Mane

(Principal)

ABSTRACT

The motion control problem for robot manipulators is to determine a time sequence of control inputs to achieve a desired motion. The control inputs are usually motor voltages or currents but can be translated into velocities or torques for control design. The desired motion is typically given by a reference trajectory, consisting of positions, velocities, and accelerations that are generated from motion planning and trajectory generation algorithms designed to calculate collision-free paths, considering various kinematic and dynamic constraints on the robot. In this chapter, we give an overview of some basic and advanced control methods for motion control of robot manipulators.

Motion controllers are mainly divided into three categories, namely PC-Based, dedicated controllers, and PLC. Among them, PC-Based motion controllers are widely used in electronics, EMS, and other industries; the representative industries of dedicated controllers are wind power, photovoltaics, robots, melding machinery, etc.; PLC is favoured in rubber, automotive, metal metallurgy, and other industries.

The 2DOf Robot system (Model: CTR 2DOF) is specially designed for courses in automatic control principles, modern control engineering, and electrical motor control. Also used for Pick and Place Operation, Velocity control Acceleration control. With this system, Users can understand the basic principles of PID's influence on the system performance index, and master the method to adjust the PID current controller, speed controller, and position controller parameters of the AC servo motor.

2DOF consists of 2arms one of them containing a Gripper arrangement that operates on a DC motor. These 2arms operate two Stepper motors.

Dr. D. Y. Patil Pratishtha's

College of engineering, salokhenagar, Kolhapur
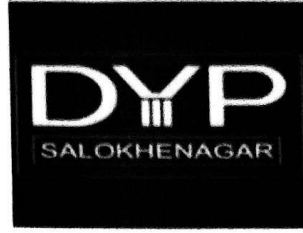
CERTIFICATE

To certify that,

Name Of Candidate	Enrollment NO.
1. PALLAVI VILAS KENE	2019087349
2. SWAPNIL SANJAY KAMBLE	2020079880
3. PRIYANKA LAXMAN KAMBLE	2020079881
4. AKASH SURESH KHADE	2019087353
5. TUSHAR TANAJI KAMBLE	2020079884

This is certified in the project report entitled **"Motion Control with Intelligence"** As partial fulfilments of the **B.Tech Engineering course in Electrical Engineering** under Shivaji University, Kolhapur during the year 2022-23.

Place – Kolhapur

Date –

Prof.S.R.Kulkarni

(Project guide)

Prof.Vidya.N.A

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