



Shri Balasaheb Mane ShikshanPrasarakMandal, Ambap's

**ASHOKRAO MANE GROUP OF INSTITUTIONS**

Vathar Tarf Vadgoan Tal:Hatkananqale Dist:Kolhapur 416 112, [www.amgoi.org](http://www.amgoi.org)

**DEPARTMENT OF MECHANICAL ENGINEERING**

## **TECHNO-MECH**

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### **❖ VISION**

To become a center of excellence in Mechanical Engineering, producing competent, creative, employable and dynamic Mechanical Engineers.

### **❖ MISSION**

**M1:** To impart fundamental and advanced technology of mechanical engineering to the students.

**M2:** To create an environment for the students to excel in mechanical engineering field, engage in research and development activity and participate in professional activities.

**M3:** To prepare the students for team building activities with good communication skills and high ethical standards.

**M4:** To train and motivate the students for lifelong learning, employability and entrepreneurship.

### **Program Educational Objective (PEOs):**

The Program Educational Objectives of Mechanical Engineering Programme, within three to five years of graduation are:

**PEO 1 :-** To impart knowledge of mathematics, basic and applied sciences to tackle complex engineering problems.

**PEO 2 :-** To encourage students for applying their knowledge and skills for problem identification, formulation, analysis and design/ development of solutions to solve real life engineering problems with orientation to industrial sector.

**PEO 3 :-** To prepare the students for necessary professional skills, high ethical standards, effective oral, written communication and team building activities in diverse and multidisciplinary teams.

**PEO 4 :-** To prepare students to excel in their field, participate in professional activities and project management; get updated in current industrial trends so as to engage in research and development activities.

**PEO 5 :-** To provide sufficient training and guidance to students for improving employability, entrepreneurship skills, industrial competency and motivation for lifelong learning.

### **Programme Outcomes (POs)**

Mechanical Engineering graduates will be able to

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.
13. **PSO1:** The Mechanical Engineering Graduates will be able to utilize their knowledge in the areas of mechanical design using finite element analysis.
14. **PSO2:** The Mechanical Engineering Graduates will be able to apply their knowledge in thermal engineering fields and green technology.
15. **PSO3:** The Mechanical Engineering Graduates will be able to apply their knowledge in manufacturing technology for realization of mechanical systems.

• **Following are the abstracts of the papers published/presented by the staffs in the journals/conferences.**

**1. LINEAR AND NONLINEAR DEMAND FORECASTING FOR EFFECTIVE INVENTORY CONTROL**

Rohit Vasant Patil, Dr.A.N.Chapgaon

PG Student, Department Mechanical (Production) Engineering, Ashokrao Mane Group of Institutions, Vathar, Maharashtra, India

Prof. Department Mechanical (Production) Engineering, Ashokrao Mane Group of Institutions, Vathar, Maharashtra, India

**ABSTRACT:**The organizational performance is by and large gauged by its ability to manage productivity and efficiency. The production and inventory management strategies developed and followed by organizations largely influence the productivity and profitability. In fact the supply chain management has become competitive tool for organization. The precise forecasts and effective inventory control assist the organization to achieve its financial goal. Largely the discrete approach to functional aspects of supply chain management are applied and found in literature. However combined or integrated demand forecasting and inventory control would not only reduce the inventory, total cost but would also improve profitability and service levels.

**KEYWORDS:**Decision support system (DSS), Inventory Control, Forecasting Model.

**2. OPTIMIZATION OF CUTTING PARAMETER FOR SURFACE ROUGHNESS USING RSM METHOD FOR TURNING OF ALUMINUM ALLOY LM13-A REVIEW**

Mr. R.R.Chavan<sup>1</sup>, Dr. A.N.Chapgaon<sup>2</sup>

# PG Student, \*Professor, Department of Mechanical Engineering, Ashokrao Mane Group of Institutions, Shivaji University

**ABSTRACT:** In this paper, study is carried out for finding the effect of turning parameter such as cutting speed (m/min), Feed rate(mm/rev) and depth of cut(mm) on surface roughness and the optimum settings of input parameters for minimizing surface roughness using Response Surface Methodology(RSM) method. The Experiment will be carried on Aluminum alloy LM13. The surface roughness is increases with the increase in the feed, decreases with increase in cutting speed also MRR increases with increase in cutting speed.

**KEYWORDS:**RSM, Surface Roughness, Turning, MRR

### **3. A REVIEW ON EFFECTS OF GTAW PROCESS PARAMETERS ON WELD**

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**ABSTRACT:** Different process parameters of Gas Tungsten Arc Welding (GTAW) affects the weldment quality. Increasing welding current increases the deposition rate and reduces the hardness. Direct current electrode negative (DCEN) polarity provides deep penetration as compared to Direct current electrode positive (DCEP) and Alternating Current (AC) polarity. Increase in welding speed decreases the bead width and depth of penetration. Depth of penetration and deposition rate decreases with increase in welding voltage. At high voltage, arc length increases which results in wider bead width. Different combination of shielding gases shows different effect on arc plasma which mainly depends upon gas properties such as electrical conductivity, molecular weight, ionization temperature etc. Arc velocity, current density and heat flux decreases with increase in tip angle of electrode.

**KEYWORDS:**GTAW, Hardness, Welding Parameter, Shielding Gas, Marangoni Effect, weld bead geometry

### **4. A REVIEW ON EFFECT OF PROCESS PARAMETERS ON ELECTRIC DISCHARGE MACHINING**

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**ABSTRACT:** The Electric discharge machining (EDM) is one of the most common and most accepted nontraditional machining processes used. It is an electro-thermal process and is based on the eroding effect of an electric spark on both the electrode and work piece. It is a thermal erosion process where metal removal takes place by a series of recurring electrical discharges between a cutting tool acting as an electrode and a conductive work piece, in the presence of a Dielectric fluid. This discharge occurs in a voltage gap between the electrode and work piece. EDM technology is increasingly being used in tool, die and mould making industries, for machining of heat treated tool steels and advanced materials (super alloys, ceramics, and metal matrix composites) requiring high precision, complex shapes and high surface finish.

**KEYWORDS:**EDM, Machining Process, MRR, TWR, SR, Discharge current, Spark on time, Applied Voltage.

## **5. AN EXPERIMENTAL STUDY ON TWO PHASE (AIR-WATER) FLOW CHARACTERISTICS IN A HORIZONTAL PIPE AT ATMOSPHERIC CONDITIONS**

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Dr. A. N. Chapgaon Co-Supervisor, Professor Department of Mechanical. Engineering,  
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**ABSTRACT:**This paper outlines an experimental investigation of two phase (air-water) flow characteristics or regimes in a horizontal steel pipe at atmospheric conditions. The two phase flow phenomenon finds application in the chemical, petroleum, nuclear and power industries. The detailed analysis of different flow patterns or flow regimes and void fraction is carried out here. These flow patterns are governed by Different physical mechanism; influence the mass, momentum and heat transfer rates and hence results into the complication in the analysis of two phase flow. Based on an investigation made by many researchers, an experimental set up has been fabricated to obtain different flow regimes by varying flow velocity of water and air simultaneously in horizontal test section of a 0.0239 m diameter pipe. In the present study, to identify the flow patterns video graphic evidences are used with high resolutions camera images. The observed flow patterns are closely agreed with those specified in literature survey which classified as stratified wavy, stratified smooth, elongated bubbly (slug), bubbly flow and annular flow regimes. The physical mechanisms that govern the transition between these regimes are also identified and discussed.

**KEYWORDS:** Two Phase Flow, Flow Characteristics, Void Fraction, Transition Mechanisms.

## **6. STUDY ON LASER HARDENING PARAMETERS OF ASTM GRADE 3 PURE TITANIUM ON AN ANGLE OF ENTRY OF HARDENED BEAD PROFILE AND POWER DENSITY**

Duradundi Sawant Badkar

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**ABSTRACT:**This research paper includes the laser transformation hardening of commercially pure titanium sheet of 1.6mm thickness is investigated using CW Nd:YAG laser. Commercially pure titanium has prevalent application in various fields of industries including the medical, nuclear, thermal, marine, defense, automobile aerospace and pharmaceutical industries. A FFD with RSM is employed to establish, optimize and to

investigate the relationships of three laser transformation hardening process parameters: laser power, scanning speed, and focused position on laser hardened bead profile parameters such as angle of entry of hardened bead profile and power density. RSM is used to develop pseudo-closed-form models from the computational parametric studies. Adequacies of developed models were analyzed by ANOVA. Effects of laser process parameters on an angle of entry of hardened bead profile and power density were also carried out using RSM. The laser power and scanning speed consecutively have a positive and significant effect on angle of entry of hardened bead profile and power density respectively as compared to the focal point position among all laser hardening process parameters. The optimum laser hardening conditions are identified sequentially to minimize an angle of entry of hardened profile, power density. The validation results demonstrate that the developed models are accurate with low percentages of error.

**KEYWORDS:**Laser transformation hardening, response surface methodology, full factorial design, analysis of variance, bead geometry

## **7. OPTIMIZATION OF SURFACE ROUGHNESS OF EN8 STEEL IN CNC TURNING OPERATION BY TAGUCHI CONCEPT**

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**ABSTRACT:**In the present research work the effect of CNC machining parameters: cutting speed  $C_s$ , depth of cut  $D_c$  and feed rate  $F$  on the surface roughness ( $R_a$ ) in a turning of EN8 Steel is investigated using the Taguchi method and ANOVA. A three level, three parameter design of experiment, L9 orthogonal array using Minitab 14 software, the signal-to-noise (S/N) ratio is employed to study the performance characteristics in the turning of EN8 Steel by taking coated carbide inserts cutting tool on CNC turning machine. The statistical methods of signal to noise ratio (S/N ratio) and the analysis of variance (ANOVA) are applied to investigate effects of cutting speed, depth of cut and feed rate on surface roughness. The analysis of variance (ANOVA) is applied to study the optimization of the process parameters affecting the surface roughness was achieved with the Taguchi orthogonal test design. The results are verified by taking confirmation experiments. The present investigation indicates that feed rate is the most significant factors influencing the surface roughness  $R_a$  for turning of EN8 steel material.

**KEYWORDS:** CNC turning, Minitab14, Surface roughness, Taguchi method, EN8 steel, coated carbide inserts tool

## **8. ROBOTIC SUPPORTING LEG FOR HANDICAPPED PEOPLE**

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**ABSTRACT:** There are many people who are handicapped by their legs also some aged person can't move their legs normally because of lack of required power to move the leg normally. Such kinds of people are unable to make movements of their legs by their own effort. To help these people ROBOTIC SUPPORTING LEG can be used. The idea behind this project is as per the program, manually operated switches used to move the leg. There are two motors used to provide external torque for joints of leg. Power supply is given by using two batteries such as 6V and 12V. When switch is on, power supply from battery passes to electronic control device and electronic control device to wiper motor. The electronic control device is used to control the motion of motor such as backward and forward. There are three switches are used. Out of these three switches one switch gives the backward motion and another gives the forward motion. The automatic switch provides the automatic movements of leg. This paper also remarks some challenges that current systems still have to meet in order to obtain a broad clinical and market acceptance.

**KEYWORDS:** Robot, supporting leg, handicapped people, Microcontroller, Wiper Motor, CATIA

## **9. AN OUTCOME BASED EDUCATION (OBE): AN OVERVIEW**

I Duradundi Sawant Badkar, II Dipak N. Mudgal

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**ABSTRACT:** Outcome-based education (OBE) means clearly focusing and organizing everything in an educational system around what is essential for all students to be able to do successfully at the end of their learning experiences. This paper presents the review the operating principles, beliefs, learning and features of outcome-based education, essentials of genuine outcome-based models, and how the effects of OBE on students and institute depends on which implementation approach is used. Major developments have been made with the move towards the outcome-based education (OBE) in technical education and learning outcomes are on today's agenda. Learning outcomes have been specified in a number of areas and frameworks or models for communicating and presenting learning outcomes have been described. OBE has, however, two requirements. The first is to make the learning outcomes explicit and the second is the use of the specified outcomes as a basis for decisions about the curriculum. It is the second requirement that is often ignored. This paper



describes how learning outcomes are used in the development of an information systems curriculum.

**KEYWORDS:** Outcome Based Education; principles of OBE; essentials of OBE.

## **10. DESIGN AND DEVELOPMENT OF NEW MULCHING MACHINE FOR AGRICULTURE**

Padawal N. T., Mali R. D., Nandgavakar S. D., Suryavanshi Vishwas Ramdas, Umesh P. Sutar, Duradundi Sawant Badkar

**ABSTRACT:** This paper establishes the design and development of agricultural mulch transplanter apparatus used for covering the soil/ground to make more favorable conditions for plant growth, moisture conservation, weed control, development and efficient crop production rate. Major topics discussed are (1). History of mulching machine and plastic mulch, (2). Basic model of mulching machine, mechanism and its limitations, (3). Selection of materials, development of new mulching machine and its design, and (4). Fabrication and assembly of new mulching machine. The invention of spreading of mulching paper machine for covering the soil is chosen on the basis of technical and economic parameters, way of utilization and external economic conditions of the agricultural enterprise. This paper presents a new modified design model solution to the choice of a suitable basic model mulching machine set for spreading of polyethylene black mulch paper on soil. It has been found and developed a new mulching machine of optimum cost sturdy construction, fine finish, easy to operate for the unskilled farmer can do and poor farmer can purchase with the invention comprises novel constructions, combinations, and arrangements of components.

**KEYWORDS:** Plastic Mulch; Mulching Machine; 3D Model; Fabrication.

## **11. NOVEL CONTINUOUS VARIABLE VALVE LIFT (CVVL) MECHANISMS FOR THROTTLE FREE LOAD CONTROL OF SI ENGINE**

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**ABSTRACT:** In conventional SI engines, the throttle-based air control wastes about 10% of the input energy in pumping the air. An innovating solution for throttle-free load control for spark-ignition engines is Variable Valve Actuation (VVA) system. VVA systems with continuous variable valve lift (VVL), usually combined with cam phases, and are designed to eliminate the classical throttle mechanism. This paper present review of design aspects of Novel CVVL mechanisms with three elements including controlled shaft system. Proposed CVVL mechanism with three elements comprises of a standard roller finger follower, the

cam shaft, and an intermediate rocker arm used between them. The intermediate rocker arm is equipped with a special developed contact surface, which is based on the theory of envelop curves and has a plane- parallel motion. Initially the general condition to design a mechanism for continuous VVL has been discussed which fulfills by every timing mechanism with VVL. Further contact curve equations for regular and extended curves and the kinematic analysis of the mechanism, resulting in the family of the valve lift laws has been elaborated, output of which is further discussed in terms of valve lift, velocity and acceleration. To achieve better engine dynamic performance and lower consumption and emission CVVL is a potential variable valve actuation technology for small capacity SI engine which offers throttle free load control.

**KEYWORDS:** VVA - Variable Valve Actuation, VVL - Variable Valve Lift, CVVL – Continuous Variable Valve Lift, Controlled shaft angle, Contact Curve

## **12. A REVIEW ON INVESTIGATION OF TRIBOLOGICAL BEHAVIOR OF NANOCOATING FOR PISTON RING**

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**ABSTRACT:** Nano coating can help to improve performance and life of automotive engine by reducing the wear between the engine components. In this research have selected the proper material for top piston ring and same material are to be selected for preparation of pin for tribometer testing and material of cylinder liner tested and fabricated the same material of tribometer disc. Nano coating by electroplated Chromium coating and Chromium nitride using DLC method by PVD coating was done on specimen pin and piston ring and this material which was used tribometer testing. Depleting fossil fuel resources, economic competitiveness and environmental concerns has compelled to explore newer avenues to improve efficiency of automotive engines. Various techniques have been adapted to achieve this goal.

**KEYWORDS:** Piston ring, cylinder liner, Chromium nitride, PVD

### **13. ANALYSIS AND EXPERIMENTAL VALIDATION FOR BEHAVIOR (COMPRESSION, TENSILE, FATIGUE ETC.) OF COMPOSITE MATERIAL HELICAL COMPRESSIVE SPRING USED FOR FOUR WHEELER SUSPENSION SYSTEM**

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Department of Mechanical Engineering, A.M.G.O.I.Vathar

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**ABSTRACT:** The Helical spring is used for suspension in automobile. The Helical spring absorbed the shocks and bump. The present study explores about experimental and computational analysis of helical spring used in automobile. This study concentrated on the use of composite material for manufacturing of helical spring. Overall this study compares the results obtained by experimental analysis of existing mild steel material helical spring by using Universal Testing machine and composite material helical spring. The validation of experimental results is given by ANSYS computational results. Finally the Comparison is done for concluded the results.

**KEYWORDS:** helical spring, composite material, ANSYS

### **14. MATHEMATICAL MODELING AND EXPERIMENTAL VALIDATION OF MODIFICATION OF MONO-TUBE SHOCK ABSORBER**

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**ABSTRACT:** Function of the suspension system is reducing the deviation of the vehicle body from the mean line of travel to a minimum, and the same time, thereby giving the passengers the best possible ride and making best use of contact with ground via tires to provide good adhesion during cornering, acceleration and braking. The work presented in this dissertation is concerned with mathematical modeling and experimental validation of mono-tube shock absorber, goal of this research is to create damper model to predict accurately damping force, experimental analysis done by varying the various parameters, such as flow area in bleed ( $A_b$ ), mass ( $M$ ) and operating frequency ( $\omega$ ). Here in this, input is given in the form of sinusoidal excitation and the output is received as a numerical data of the displacement transmissibility. This data is then processed to get the values of transmissibility and magnification factor for various frequency ratios.

**KEY WORDS:** Suspension, Damping, Damper, Shock Absorber

## 15. A REVIEW ON INVESTIGATION AND IMPLEMENTATION OF LEAN MANUFACTURING IN A SMALL SCALE INDUSTRY FOR EFFECTIVE PRODUCTIVITY

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**ABSTRACT:** Lean manufacturing which is also known as lean production has been one of the most popular paradigms in waste elimination in the manufacturing and service industry. Thus, many firms have grabbed the benefits to practice lean manufacturing in order to enhance quality and productivity. However, previous research shows that, there are various sets of tools or techniques that had been adopted at a certain degree across firms according to their own understanding of lean manufacturing. The scenario resulted with varying leanness measures in order to measure lean practices. This project describes a preliminary study in developing a conceptual model to measure leanness in manufacturing industry.

**KEYWORDS:** Lean tools, Productivity, Waste elimination, planning and scheduling

## 16. A REVIEW PAPER ON MANAGEMENT INFORMATION SYSTEMS

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**ABSTRACT:** One of the most important goals in any organization is increasing work force productivity. Information systems, Systems are the responsibility of their data and their processing of information within the organization and managers to provide information on important economic decisions making. Dr. Naganathanna Nayakavadi Hutatma Kisan Ahir Sahakari Sakhar Karakhana. Ltd. Walwe, is well known sugar industry having 4000 tccpd to 5000 tccpd capability along with new constructed new ethanol plant and using different facility in this factory such as leveller, fibrizor, kicker, TRPS rolling mill, elevator, boiler, pan and centrifuge. Management Information System (MIS) in increasing human resource productivity. Savings in labor, increased consumer surplus, improved customer service quality, improved organizational efficiency, quicker response to customers, deeper knowledge and understanding of customers. The purpose of this paper is to surveying the effect of management information system of productivity and its elements such as work speed, work cost, work accuracy (efficiency) and supervision and control status

improvement, planning status improvement and make decision status improvement (effectiveness) of overall machine, man and material to improve performance of all over machinery, information systems.

**KEYWORDS:** Management Information System, leveller, fibrizor, kicker, TRPS rolling mill.

### **17. THE ROLE OF UNIVERSAL HUMAN VALUES IN LIFE, IN THE SUCCESS OF WARANABAZAR CONSUMER COOPERATIVE AT WARANANAGAR (MS)**

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**ABSTRACT:** This paper is intended to focus on the universal human values in life. All human beings are required to follow certain human values in day to day life, in order to have peace, pleasure and stress free life. Happiness is the most important element which everyone wants to achieve but very few get it at the end. Money alone cannot buy happiness, but in spite of this knowingly or unknowingly everyone is running after money, name and fame, ignoring the human values in one's life. Result is best known to all. Human values in life can be discussed with the reference to three aspects viz. cultivating human values in family itself, nurturing those human values in cooperatives or organizations and utilizing these values for the social benefits of the people at large, for the betterment of society. Love, affection and respect are the three pillars of human values in family, while honesty, sincerity and integrity, along with hard work, are human values much needed in any form of organization (private, public, cooperatives, etc) for the success.

Warananagar is considered to be one of the best examples in the cooperatives, all over the India. Established by Late Shree Tatyasaheb Kore, in the year of 1956, with Sugar factory as a nucleus and expanded with Warana dairy, cooperative bank, educational complex, Waranabazar, hospital, irrigation societies and many other projects.

Within a span of 60 years, many principles of life were put into practice. The paper includes the analysis of the feedback collected from the discussions in the regular meetings, which have enabled the complex to progress and serve the society for good.

**KEYWORDS:** Affection, Integrity, Honesty, Love, Respect, Responsibility and Sincerity

## **18. A REVIEW ON DESIGN AND ANALYSIS OF GATE VALVE USING VARIOUS COMPUTER AIDED TECHNIQUES**

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**ABSTRACT:** Gate valves are machine elements which are commonly used to control the flow of fluids as gate valve provides a positive sealing at high pressure of liquids and gases. Gate valves are used when a straight-line flow of fluid and minimum restriction is desired. Gate valves are so named because the part that either stops or allows flow of fluid through the valve acts somewhat like the opening or closing of a gate and is called, appropriately, the gate. The objective of this paper is to focus the design and analysis of critical components of Gate Valve. The critical components in the Gate Valve studied by many of the researchers are Body, Gate Stem and slab gate. The main purpose of design and analysis of any valve is to determine stresses and strains developed in the valve body, which is mostly done by using computer aided software tools. This paper gives detailed review on various techniques adopted by several researchers in the design and analysis of Gate valve. Generally, elements of Gate Valve are developed in CATIA and analyzed in ANSYS. Specially, Gate valve stress analysis is carried out by FEM using ANSYS which can be further validated and supported by stress analysis using classical theory of mechanics.

**KEYWORDS:** Computer aided tools, Analysis techniques, Gate Valve

## **19. ADVANCED WATER IRRIGATION SYSTEM**

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**ABSTRACT:** This paper represents a Mechatronics system used for advanced water irrigation. This system is integrated with three basic elements namely, sensing unit, controlling unit and actuating unit. Sensing unit consists of YL-69 water sensors along with YL-38 bridge circuits. Controlling unit consists of 8 bit microcontroller and SIM-900 GSM module. Actuation unit consists of DC motor operated valves assisted with driver circuits.

This automated water irrigation system can be operated remotely using a mobile phone. The information about the required field to be irrigated can be sent through a registered mobile number, in the form of SMS. GSM module receives a message and there after sends set of instructions to microcontroller through MAX-232 communication device. Microcontroller is so programmed that, on receiving the instructions from GSM module, it decides which valve to be operated using corresponding DC motor. By operating valves, water to the required field or fields can be directed. The presence of water in the respective fields is again monitored by water sensors, which are mounted in the piping. Microcontroller receives signal from water sensors and sends corresponding signal to GSM module. A programmed SMS is sent back to the registered mobile number, which provides information about the presence of water in the fields as a feedback signal.

**KEYWORDS:**Feedback, Global System for mobile Communication (GSM), Irrigation, Microcontroller, Short Message Service (SMS), etc.

## **20. AUTOMATIC HEADLAMP ILLUMINATION CONTROL SYSTEM**

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**ABSTRACT:**Night time driving with conventional headlamps is particularly unsafe as the highest fatal trafficaccidents rate occurs on curve roads at night time. Historical data shows that, only 25% of driving is done at night time but, even though 55% of driving accidents occur during this period. The existing conventional light system does not provide illumination in right directions on curvature road as headlamp position remains fixed for any steering action. Due to insufficient illumination, conventional headlamp doesn't cover the full road during taking turn on curvature, so it becomes the major threat of accidents. In order to enhance night time driving safety, this paper work aims to project the headlamp lights at required position of road in accordance with steering action. A proposed system for automatic headlamp position control system consist of potentiometer as sensing unit, MCS 51 microcontroller as control unit and three headlamps as actuation unit.

**KEYWORDS:** Accidents, Automatic, Headlamp, Position Control

## 21. FEEDBACK ASSISTED CLOSED LOOP INSPECTION CONTROL SYSTEM

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**ABSTRACT:** This paper is intended to focus on the advanced measurement system, developed for accurate measurements of, dimensions of, a valve guide of an engine. Snap gauges, pneumatic comparators, dial gauges, micrometers, etc. are traditional instruments used for inspection. These methods may lead in inaccurate job inspection. So, to overcome the drawbacks associated with traditional equipments, one can develop an advanced measurement system using sensors, actuators and control system. The sensing unit of this system consists of two LVDT probes. Control unit is a programmable logic controller (PLC), while actuation unit has electromagnetic relay and a display. Along with this, a mechanical fixture mounted with LVDT probes is used to hold the job to be inspected. A job to be inspected has to be kept on mechanical fixture. Two LVDT probes which are fixed on fixture displaces as per the job profile. These LVDT sensors are integrated with control unit through an amplifier. Control unit is also integrated with display and a relay. Depending upon the signal received from LVDT, control unit decides which data has to be displayed and whether a relay is energized or not. The relay has control over the machine cycle. If the job under inspection has dimensions out of acceptance range, then the error dimensions are displayed on a display and relay is de-energized so as to turn off the machine cycle. This system can not only inspect the job, but also it can have a control over machine cycle.

**KEYWORDS:** Gauge, LVDT, Measurement, PLC, Relay.



- **Following are the industrial visits conducted during academic year 2016-17.**

<b>Sr. No.</b>	<b>Class</b>	<b>Subject covered during industrial visit</b>	<b>Company visited</b>	<b>Date of visit</b>
1	B E (B)	Refrigeration and air conditioning	Rajarambapu Dairy Islampur	23-08-2016
2	B.E.(A)	Refrigeration and Air-Conditioning	GokulDudhSangh Kolhapur	24-08-2016
3	B.E.(C)	Refrigeration and Air-Conditioning	PratibhaKrushiUdyogKodoli	26-08-2016
5	S.E.(A)	Metallurgy	IndraniTechnocrafts, Shirolim IDC, Kolhapur	16-09-2016
6	S.E.(A)	Applied thermodynamics	Rajarambapu SugarFactory, Islampur	17-09-2016
7	S.E.(A)	Workshop practice III	TirupatiCasting, Ambapwadi	25-09-2016
8	B.E.(D)	Refrigeration and Air-Conditioning	ShriGuru Ice Factory	26-09-2016
9	S.E.(B)	Metallurgy	IndraniTechnocrafts, Shirolim IDC, Kolhapur	28-09-2016
10	S.E.(B)	Workshop practice III	Siddharth Foundry Pvt. Ltd. Shirolim IDC, Kolhapur	02-10-2016
11	T.E.(B)	Manufacturing engg.	Satyajeet Mechanism	02-10-2016
12	B.E.(B)	Total quality management	Mahindra Trendy Wheels	04-10-2016
13	B.E.(D)	Total quality management	Maruti Suzuki Showroom, Peth Naka	04-10-2016
14	B.E.(D)	Automobile engineering	Maruti Suzuki Showroom, Peth Naka	04-10-2016
15	B.E.(B)	Automobile engineering	Maruti Suzuki Showroom, Peth Naka	05-10-2016
16	T.E.(C)	Manufacturing Engg.	Satyajit Mechanisms	07-10-2016
17	S.E.(C)	Workshop Practice III	TirupatiCasting, Ambapwadi	08-10-2016
18	B.E.(A)	Automobile engineering	Mahindra Trendy Wheels	08-10-2016
19	S.E.(C)	Metallurgy	IndraniTechnocrafts	08-10-2016
20	T.E.(C)	Theory of Machine	Manugraph India Ltd	08-10-2016
21	T.E.(B)	Theory of Machine	Jagadamba Engg. Works Karad	09-10-2016
22	T.E.(C)	Theory of Machine	Manugraph India Ltd	09-10-2016
23	S.E.(D)	Applied thermodynamics	PratibhaKrushiUdyog, Kodoli	07-10-2016
24	S.E.(B)	Applied thermodynamics	Rajarambapu SugarFactory, Islampur	13-10-2016
25	S.E.(C)	Applied thermodynamics	Rajarambapu SugarFactory, Islampur	15-10-2016

26	B.E. (D)	Industrial Automation and Robotics	Mahabal Metals Miraj	19-02-17
27	T.E.(A)	Internal Combustion Engines	ChouguleInd. Karad	22-02-17
28	T.E.(A)	Machine Design II	ShivprasadInd. Kolhapur	12-03-17
29	S.E. (C)	Fluid and Turbo Machinery	Kirloskar Ebara Sangli	02-03-17
30	S.E.(A)	Machine Tools and Processes	Tirupati Casting Ambap	26-02-17
31	B.E.(A)	Industrial Automation and Robotics	Mahabal Metals Miraj	05-03-17
32	S.E (D)	Machine Tools and Processes	Tirupati Casting Ambap	24-02-17
33	S.E.(A,B, D)	Fluid and Turbo Machinery	Radhanagari Dam	10-03-17

- Industrial visit of SE students to the company Tirupati Casting Ambap and Rajarambapu Sugar factory Islampur.





- Industrial visit of students to Rajarambapu dairy, Islampur and to a foundry.





- **Our college has signed MoUs with the following organizations in the academic year 2016-17.**
  - 1. Urjankur Shree Datta Power Co. Ltd., Dattanagar, Shirol, Dist: Kolhapur, Maharashtra-416120, India.**
  - 2. Gurukul Foundation, Kaneri Math, Kolhapur on 31-08-2016.**
  - 3. Ignographia Technology Solutions, Ichalkaranji on 22-10-2016.**