AICTE ISTE Approved

3RD International Conference Proceedings

For

"Recent Trends in Science, Engineering & Technology"

Held from 7th February 2022 to 9th February 2022

At

GOVINDRAO WANJARI COLLEGE OF ENGINEERING & TECHNOLOGY
SALAI GODHANI, HUDKESHWAR ROAD,
NAGPUR

Dr. Salim Chavan
Convener,
ICRTSET-2022

Prof Avishkar Wanjari
Coordinator,
ICRTSET-2022

Govindrao Wanjari College of Engineering & Technology

Nagpur-441204

Session 2021-22

MESSAGE FROM THE PRESIDENT

The AICTE ISTE approved 3rd International conference on "Recent trends In Science, Engineering & Technology (ICRTSET-2022)" ,Organized by Govindrao Wanjari College of Engineering & Technology, Nagpur on dated 7th February 2022 to 9th February 2022 marked several exciting milestones for our organization. There were 30 presentations from scholars who participated in the conference. These highlights are important to mention because they demonstrate our contribution in the field of Engineering. The supportive and collaborative nature of the conference also builds on our mission to support learners in contexts of higher education. The contributions by the authors of the following proceedings reflect their dedication to learners in various settings and contexts. The proceedings not only build a legacy of scholarly contribution for the authors, but also for ICRTSET-2022. I would like to thank the editors for their hard work for preparing the proceeding of this conference. I would like to thank all the authors who presented their research at the conference and ultimately for print in this edition of proceedings. As we continue to grow as an organization, your participation will be increasingly important to carrying out the work we are charged with from our mission.

Dr. Suhasini G Wanjari
President
Amar Sewa Mandal
Nagpur

MESSAGE FROM THE SECRETARY

It is with great pleasure that I acknowledge the AICTE ISTE approved 3rd International conference on "Recent trends In Science, Engineering & Technology (ICRTSET-2022)", organized by Govindrao Wanjari College of Engineering & Technology, Nagpur. I commend the organizing committee for their admirable efforts in ensuring the success of this conference and their commitment to presenting novel research findings and ideas. My best wishes to them for their ongoing efforts to disseminate knowledge.

Adv. Abhijit Wanjarri
Secretary
Amar Sewa Mandal
Nagpur.

MESSAGE FROM THE TREASURER

Govindrao Wanjari College of Engineering & Technology, takes great pride in hosting the AICTE ISTE approved 3rd International conference on "Recent trends In Science, Engineering & Technology (ICRTSET-2022)". I would like to appreciate the entire team at GWCET for their unwavering efforts in bringing this significant event to fruition. This conference provides an excellent platform for students and young researchers to enhance their knowledge and gain a deeper understanding of the changing ideas and innovative methods in technology. I am confident that this event will offer a valuable learning experience for all participants and provide an opportunity for them to share their expertise. I wish all the attendees a productive and fulfilling time ahead.

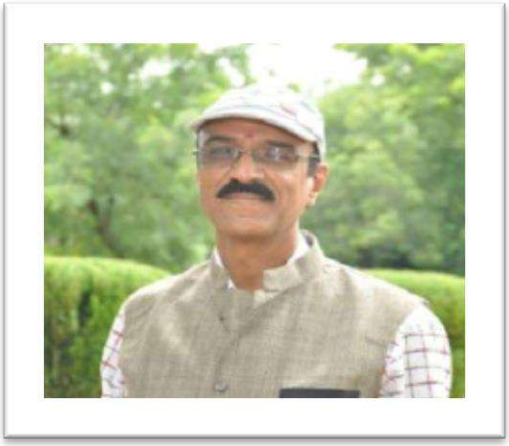
Dr. Smeetaa A Wanjari
Senate Member RTMNU and Treasurer
Amar Sewa Mandal
Nagpur.

MESSAGE FROM THE PRINCIPAL

It gives me great pride to announce that Govindrao Wanjari College of Engineering & Technology, is hosting the AICTE ISTE approved 3rd International conference on "Recent trends In Science, Engineering & Technology (ICRTSET-2022)" on 7th February 2022 to 9th February 2022. The conference will act as an excellent colloquium to develop a platform for the exchange of ideas towards scientific and technological innovations for the generations to come. I hope that the conference will deliberate on current issues of national and international relevance in the fields of Science and Technology, allowing academicians, researchers, and technocrats to share their thoughts and views on innovations in their respective fields. The conference will witness an unparalleled number of quality research articles being presented, paving the way for new paths to innovate in Science and Technology. I extend my heartfelt congratulations and appreciation to the entire team for their efforts in organizing this e-international conference and wish them great success in the successful conduct of the entire event.

Dr. Salim Chavan
Principal
Govindrao Wanjari College of Engineering & Technology
Nagpur

MESSAGE FROM KEYNOTE SPEAKER



It is a pleasure to note that Govindrao Wanjari College of Engineering & Technology is organizing the AICTE ISTE approved 3rd International conference on "Recent trends In Science, Engineering & Technology (ICRTSET-2022)" from 7th February 2022 to 9th February 2022. Conferences of this nature provide a platform to young researchers and faculty members to present their research and development work and get feedback and suggestions to improve their quality of work. This Conference will provide an opportunity to exchange ideas on latest algorithms, standards, technologies, and applications pertaining to above topics and thus serve very useful to students and teachers.

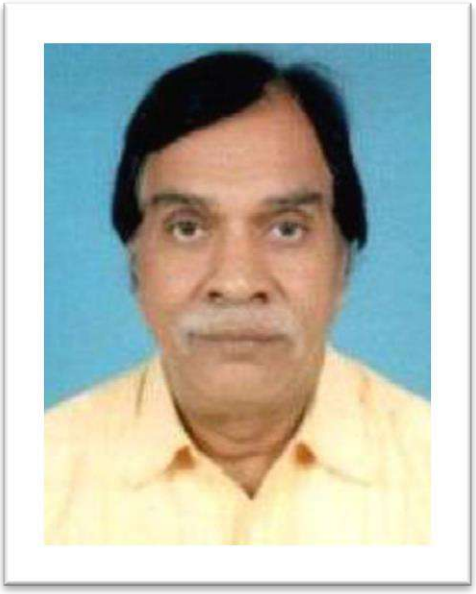
Dr. Anant Dhatrak
ISTE Executive Council Member,
New Delhi, Maharashtra & Goa Section
Dean Academic, GCOE, Amravati.

MESSAGE FROM KEYNOTE SPEAKER

It gives me great pleasure to be with you that Govindrao Wanjari College of Engineering & Technology has organized the AICTE ISTE approved 3rd International conference on "Recent trends In Science, Engineering & Technology (ICRTSET-2022)" from 7th February 2022 to 9th February 2022. This conference has provided platform to young researchers and faculty members to show their hidden potential. I would like to take this opportunity to thank you for your invitation and congratulate for organizing excellent Conference.

Mr. Karthik Raghunathan
Senior Scientist,
CSIR-NEERI, Nagpur.

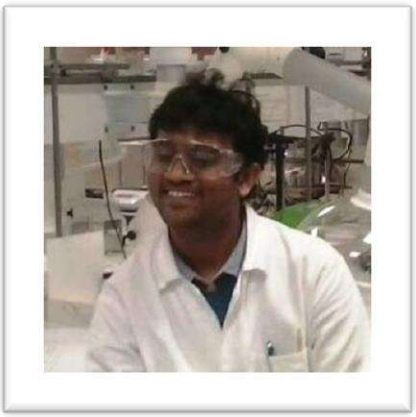
MESSAGE FROM KEYNOTE SPEAKER



I sincerely congratulate the organizing committee for the success of AICTE ISTE approved 3rd International conference on "Recent trends In Science, Engineering & Technology (ICRTSET-2022)" from 7th February 2022 to 9th February 2022, which was well-organized, well-balanced. The speakers were all highly respected professionals. I wish you and your team further achievements, and hope for continued cooperation.

Dr. Sant Sharan Pathak
Professor,
BIT, Department of Electronics & Telecommunication Engineering,
Ranchi.

MESSAGE FROM KEYNOTE SPEAKER



My heartfelt congratulations to the entire team for their efforts in organizing this AICTE ISTE approved 3rd International conference on "Recent trends In Science, Engineering & Technology (ICRTSET-2022)" from 7th February 2022 to 9th February 2022 and wish them great success in the successful conduction of the entire event.

Dr. Vijay Nimbarte
Post-Doctoral Researcher,
Max Planck Institute of Medical Research,
Heidelberg, Germany

MESSAGE FROM KEYNOTE SPEAKER

I would like to congratulate the institute for organizing such a well-planned International conference on "Recent trends In Science, Engineering & Technology" (ICRTSET-2022). Such conference is very much important as it leads to get acquainted with new trends, future plans, solutions and how to adapt to them. I thank Govindrao Wanjari college of Engineering and Technology for inviting me as guest speaker for the International Conference.

Dr. Geev Mokryani
Associate Professor
Department of Biomedical & Electronics,
University of Bradford,
Bradford, United Kingdom.

ACKNOWLEDGEMENT

We present to you the proceeding for the AICTE ISTE Approved 3rd International Conference on "**RECENT INNOVATIONS IN SCIENCE, ENGINEERING & TECHNOLOGY"** which was held from 7th February 2022 to 9th February 2022.

We feel very much delighted in expressing sense of gratitude to our Principal and Convener for this conference **Dr. Salim Chavan,** for his timely help during the conference and for his constant encouragement and valuable guidance. The successful execution of this conference would not have been possible without the firm support of our convener.

We are very thankful to our Hon'ble Treasurer Amar Seva Mandal and Senate Member RTMNU, Nagpur **Dr. Smeetaa A Wanjari.** She guided us for this conference and gave us valuable suggestion whenever and whenever required.

We would like to express sincere thanks to Hon'ble MLC and Secretary Amar Seva Mandal **Adv. Abhijit Wanjarri** for giving the opportunity to do such international conference and providing us necessary facilities to carry out our work.

We express our sincere thanks to Hon'ble Founder of Amar Sewa Mandal and our well-wisher **Dr. Suhasini G Wanjari,** for being a source of inspiration for all of us.

We would also like to express our sincere gratitude to the Session chair In-charges **Mr. Karthik Raghunathan, Senior Scientist, CSIR-NEERI, Nagpur, Dr. Vijay Nimbarte, Post-Doctoral Researcher, Max Planck Institute of Medical Research, Heidelberg, Baden-Wurttemberg, Germany. Dr. Geev Mokryanl, Associate Professor, University of Bradford, Bradford, United Kingdom** for being involved in this international conference and sharing their views.

We wish to express our gratitude to all our faculty members who have helped us directly or indirectly in completing this conference.

CONFERENCE-COORDINATOR

Prof. Avishkar Wanjari
Head of Department
EE Deptt, GWCET, Nagpur

CONTENTS

1. **ELECTRONICS & TELECOMMUNICATION ENGINEERING DEPARTMENT ..1**

1.1 Post Pandemic Solutions For Safety 1

1.2 Home Automation System Using Internet of Things 2

2. **ELECTRICAL ENGINEERING DEPARTMENT 3**

2.1 Development of Smart Multifunction Floor Cleaning Robot 3

2.2 Liquid filling unit using plc automatically 4

2.3 Phase Dynamic Voltage Restorer 5

2.4 Electrical Safety Audit Of Central India Institute For Medical Science 6

2.5 Iot Based Smart Waste Management 7

3. **CIVIL ENGINEERING DEPARTMENT 8**

3.1 Biodegradable waste reduced in GWCET Nagpur by The Process of Vermicomposting .. 8

3.2 Experimental Study on Traditional Clay Bricks by Adding Bagasse Ash and Fly Ash 9

3.3 Analysis & Design of Sewer System: Sagar City 10

3.4 Storing and Recharging Ground Water PIT By R.W.H. For GWCET , Nagpur 11

3.5 Coconut Fibre Reinforced Concrete 12

3.6 Stabilization of Expansion Soil Using of Fly Ash & Ceramic Tile Dust 13

3.7 Study And Design of Sewage Treatment Plant 14

4. **COMPUTER SCIENCE & ENGINEERING DEPARTMENT 15**

4.1 Digital Library Management System 15

4.2 E- Parisar: A smartphone Based Approach for E- waste Management & Recycling. 16

4.3 Thermal Face Recognition Using Machine Learning 17

4.4 Digitalized Examination System 18

4.5 Flight Ticket Price Predictor Using Python 19

4.6 Hospital Management System in Django 20

5. **MECHANICAL ENGINEERING DEPARTMENT 21**

5.1 Wheelchair cum Stretcher via Linkage Mechanism 21

5.2 Design and fabrication of See Saw Operated Pump 22

5.3 Design and fabrication of Peddle Powered Vegetable Shredder Machine 23

5.4 Secret Locker System 24

5.5 Fabrication of Portable Cloth Dryer Machine..... 25

5.6 Standalone Solar Powered Domestic Groundwater Purifying System 26

5.7 Design and Fabrication of 3-Dimensional Lifting Machine..... 27

5.8 Performance Evaluation of Domestic Refrigerator by Using LPG as Refrigerant..... 28

5.9 Fabrication of Solar Operated Drilling Machine..... 29

5.10 Design And Fabrication Of Lead Screw Operated Table Cum Trolley..... 30

1. ELECTRONICS & TELECOMMUNICATION ENGINEERING DEPARTMENT

TITLE	1.1 Post Pandemic Solutions For Safety
AUTHOR	Manas Jahagirdar, Vikram Motghare, Akshay Bhandarkar, Dhanashree Sirsikar, Gaurav Agrawal
ABSTRACT	The system proposed can be used to regular check up of the COVID patients while maintaining the social distancing. Also, the data sensed by the sensors is directly sent to doctor, reducing the cost of paying regular visits to doctor. The IoT platform used in the system helps to transfer the real time patient's data remotely to host device. Automatic hand sanitizer is useful to facilitate the hand sanitizer liquid out of the bottle, so it is more effective to use and does not run out quickly. This research uses the Research and Development (R&D) method. The result of this research is an automatic hand sanitizer with a large size hand sanitizer that can be mounted into a tool. This automatic hand sanitizer will automatically release the hand sanitizer fluid which approves the sensor under the user's hand protective device. To track the patient health micro-controller is in turn interfaced to an LCD display and wi-fi connection to send the data to the web-server (wireless sensing node). In case of any abrupt changes in patient heart-rate or body temperature alert is sent about the patient using IoT. This system also shows patients temperature and heartbeat tracked live data with timestamps over the Internetwork. Keywords: Servo motor, LCD display, Bluetooth module, PIC.

TITLE	1.2 Home Automation System Using Internet of Things (IOT)
AUTHOR	Vaibhavdeep Narware , Ajay Khade , Yashoda Sulbhewar
ABSTRACT	The internet of things (IoT) is connecting the devices and tools to the internetnetwork to be controlled by websites and smart phone applications remotely, also, to control to olsand instruments by codes and algorithms structuresforartificialintelligenceissues.Incasewewanttocreatead vancedsystemsusingWiFiorEthernetconnectionisconnected to our tools, equipment, and devices controlling them by smart phone applications or internet websites. That's actually the simplified definition of IoT. Farther than just using the IoT as a smart home to operate lamps or other home-use devices, it can be used as a appliance like lights turn off without any explicit command by the user security system or an industrial-use system, more ideas can be done by using IoT technology. Ahuge industrial facilities or governmental institutions have muchoflamps.Employees sometimes forget to turn them off in the end of the day. This project suggests solution that can save energy by letting the security to control lighting of the buildingwith his smart home by Blynk application. The lamps can be controlled by switches distributed in the building and Blynk application at the same time with a certain electrical installation. Keyword: IOT, Home Automation, sensors, LED

2. ELECTRICAL ENGINEERING DEPARTMENT

TITLE	2.1 Development of Smart Multifunction Floor Cleaning Robot
AUTHOR	Prof. Vaishnavi Dhole , Nayan Kalbande, Ranjana Sardar, Pooja Patkotwar
ABSTRACT	The conventional floor cleaning machines is most widely used in airport platforms, railway platforms, hospitals, bus stands, malls and in many other commercial places. These devices need an electrical energy for its operation and not user friendly. In India, especially in summer, there is power crisis and most of the floor cleaning machine is not used effectively due to this problem, particularly in bus stands. Hence it is a need to develop low cost, user friendly floor cleaning machine. In this project, an effort has been made to develop a solar powered mobile operated floor cleaning machine so that it can be an alternative for conventional floor cleaning machines. In this work, modelling and analysis of the floor cleaning machine was done using suitable commercially available software. The conventionally used materials were considered for the components of floor cleaning machine. From the finite element analysis, we observe that the stress level in the mobile operated floor cleaning machine is within the safe limit.

TITLE	2.2 Liquid filling unit using plc automatically
AUTHOR	Prof. P.V. Suramwar, Saurabh Raut, Diksha Nikure, Puja Konpratiwar, Pranita kharche
ABSTRACT	In this paper a bottle filling machine is introduced using Programmable Logic Controller (PLC) based controller in automation industry. The main aim of the paper is to design and fabricate a small and a simple filling system using PLC. The belt conveyor is used for moving the bottle. A dc pump is set to tank to control the flow of water. The position of bottle is detected by inductive sensor so that pump can be functioned at right time. When bottle is under the tank, the pump is started and bottle is filled by water. All the components perform well. This filling machine is cost effective and it can be used in small scale bottle filling systems such as coffee shops, juice shops and other beverage industries.

TITLE	2.3 Phase Dynamic Voltage Restorer
AUTHOR	Mr. Satish Rathod, Ms Shubhangi Layabar, Ms Priya Shelke, Ms Kalyani Sawarkar,Mr Kunal Ambhore, Mr Nilesh Pajai,Mr Vijay Wadki, Prof A V Wanjari
ABSTRACT	Recently, Power quality is one of major concerns in the present era. It has become important, especially, with the introduction of sophisticated devices, whose performance is very sensitive to the quality of power supply. To improve the power quality, custom power devices are used. The device considered in this work is Dynamic Voltage Restorer. Thispresents modelling, analysis and simulation of a Dynamic Voltage Restorer (DVR) constructed in Simulink environment. Here, different supply voltage conditions are considered for linear loads. The major problems dealt here are voltage sag, voltage swell, and voltages unbalances. The role of DVR to compensate load voltage is investigated during the different supply conditions like voltage sag, voltage swell, and supply voltage unbalance. Therefore, it is a highly prospective branch of energy, which would play a significant role in the future. The development of any country depends to a large extent on availability and usage of electricity. Conservation of electricity has now become a vital element of economic growth giving benefit to state's exchequer and this conservation is more essential due to concern for fast depletion of non-renewable sources of energy in the country. The main aim to this project is to control input voltage of line and provide constant voltage to equipment various common home appliances like heater, fan air conditioner etc. of domestic load at instantaneous time.

TITLE	2.4 Electrical Safety Audit Of Central India Institute For Medical Science
AUTHOR	Mr. Saurabh Bhattad, Mr Rutwik Kalbande, Mr Niraj Khushwaha, Mr Mangesh Kumbhare, Mr Nilesh Kawale, Mr Nitesh Chaudhari, Mr Bharat Khapekar, Ms Vinadevi Gaikwad, Prof Y S Bais
ABSTRACT	"Safety first and always " should be motto of every place i.e. buildings, industries & utilities .In a long run ,this approach helps indirectly I realizing tangible saving for the organization as it prevents accident, which normally result in loss of man-hours, damage to equipment & sometimes loss of life also. Safety of personnel and equipment is of paramount importance. The priorities are given below in order: a) Safety of personnel- Self, colleagues and public. b) Safety of equipment. c) Continuity and high quality of power supply. Electricity constitutes one of the major sources of ignition for fire accidents and explosions. Over 20% of fire would wide and 40% of fire in India is due to faulty electric circuits. Besides equipment damage and property loss, electrical hazards also include injuries and fatalities to personnel due to electric shock. Electricity having become an indispensable part of our life, electrical risks is to be managed effectively. Timely inspection are preventive maintenance of electrical equipment and its connected systems will go long way in ensuring safer operations, for longer period of time , of the electrical installation.

TITLE	2.5 Iot Based Smart Waste Management
AUTHOR	Kunal Harkade,Tushar Banarkar,Mangesh Chandewar, Nikhil Kare, Pawankumar Tembhurkar, Rohit Patle, Kuldeep Sathekar, Sachin Rangari
ABSTRACT	Urban India generates tones of wastes annually. Our country faces major challenges associated with waste management. Conventional garbage collection is not efficient since the authorities are not notified until the waste bin is full, and this leads to overflow of waste material. Efficient way of waste disposal and collection of disposed garbage is essential for a sustainable and clean India. This paper presents smart waste management using loT based waste bin for collection and monitoring the level of waste inside bin. The system is implemented using two ultrasonic sensors which is being controlled by Node MCU. One of the ultrasonic sensor detects the level of the waste in the bin and other detects the person approaching the bin to dispose the waste. This detection helps in automatic opening and closing of the lid. Servo motor is connected to the lid which serves the action of closing and opening of the lid. In this system, level of waste in the bin will be sent to concerned authorities. The loT data is stored and monitored using Blynk app. The proposed system is reliable, cost effective and can be easily implemented.

3. CIVIL ENGINEERING DEPARTMENT

TITLE	3.1 Biodegradable waste reduced in GWCET Nagpur by The Process of Vermicomposting
AUTHOR	Nidhi M. Patil, Shivam S. Gupta, Aarti S Lokhande, Vaibhav R. Panchkawade, Kalyani R. Kothale, Ajaykumar R. Sharma
ABSTRACT	There has been significant increase in Solid Waste generation in GWCET Nagpur in the last few decades. This is largely because of requirement of large landscape area in the GWCET Nagpur. Solid waste management has become a major environmental issue in this GWCET Nagpur. The per capita solid waste generated daily is about 40 to 50 grams per day in this GWCET Nagpur. Although there is no data is available for solid waste generation it is proposed to study the collection, disposal and increase in solid waste generation, over the years for the GWCET Nagpur. Nowadays there is considerable increase in the solid waste in this college such as vegetable waste, canteen waste, landscape area waste, garden area waste, street waste and other types of garbage. This is so because of our changing lifestyle, food habits and change in living standards. Though there is the college council, it is not doing the solid waste management up to the mark due to the reason within and beyond its control. Hence, there is an imperative need to improve the solid waste management in this college. Solid waste in this college is collected by the local authority and transported to the designated disposal sites, which is normally low laying area on the outskirt of the Nagpur. Here the local authority is ill equipped to provide high costs involved in the collection, storage, treatment and proper disposal of solid waste earns the limited revenue. As a result, a substantial part of the solid waste generated remains unattended and grows in the heaps at poorly maintained collection centers. Also the choice of a disposal site is more a matter of what is available than what is suitable. The collection efficiency for solid waste in the college is about 40% hence, there is the need to improve the efficiency through proper management of the solid waste and the poorly maintained landfill sites are prone to groundwater contamination because of the leachate production. Open dumping of garbage facilitates the breeding of disease vectors such as flies, mosquitoes, rats and other pests. Hence, an ardent attempt shall be made in this study to develop an effective and comprehensive solid waste management model for the GWCET Nagpur.

TITLE	3.2 Experimental Study on Traditional Clay Bricks by Adding Bagasse Ash and Fly Ash
AUTHOR	Bharati R.Mendhe, Bharti S.Gadhave, Pradnya P. Patil,Pranoti P.Mohod, Rupesh V. Ikhar, Saurabh R. Alagdeve, Shraddha S.Ukey
ABSTRACT	The present study is to manufacture Sugarcane bagasse ash bricks with the addition of one more waste material i.e., Fly ash. In India population is increasing day by day and large quantity of waste is generated through many industries and agriculture which creates health hazards, disposal of this waste has become a major problem. Sugarcane bagasse is one among its which is produced due to burning of bagasse ash. In order to use waste material effectively we used bagasse ash in preparation of bricks in different proportions i.e., 5%-30%. Bricks are prepared and the tests carried out are Water absorption and Compressive strength as per Indian standards. The present study carried out is to explore the potential of using bagasse ash in brick production. The outcome of this work indicates the maximum compressive strength obtained for optimal mix percentage. Henceforth we can conclude that addition of waste material in manufacturing of brick can minimize the environmental burden leading towards cost effective and green construction. Keywords: Sugarcane bagasse ash, Fly ash bricks, green bricks**.**

TITLE	3.3 Analysis & Design of Sewer System: Sagar City
AUTHOR	Prem C. Gautam, Abhishek R. Madavi, Rohini D. Katre ,Anjali A. Kesharwani, Shreya A. Kesharwani,SnehaR.Nagdeve, Diksha C. Bhange, P.E. Sangode.
ABSTRACT	Sagar city is increasing tremendously due to established military stations, universities, police training exercise stations, nearby Rajghat bam, aesthetical view of centrally placed lake and well connection of roads to capital city, Bhopal [M.P]. Besides it is strange to say that this city being important city of Madhya Pradesh has not yet provided adequate sewerage system. Resident of Sagar city produces both liquid and solid waste. The waste water generally produces from residential, commercial, institutional and industrial establishments. The sewage water contains toxic components which are harmful for agriculture, building purpose. Also, such wastewater contains various harmful compounds, bacteria and pathogens which stimulate the growth of plants. Till date, such sewage was mixing with the city lake & polluting it in massive proportion hence the idea of sewerage treatment plant is developed. Due to such water, lake is producing bad smell in nearby area. This project deals with the sewage system and its remedial solution in sagar city. The project helps us to perform a complete field survey of sagar city regarding its sewage system which can then be further studied and some counter rneasures can be taken to battle against the problems regarding the sewage system in sagar city.

TITLE	3.4 Storing and Recharging Ground Water PIT By R.W.H. For GWCET , Nagpur
AUTHOR	Dipali P. Uike, Tinu G. Katre, Manali B. Motghare, Vinay K. Pande, Saurabh D. Balsarpe, R.S. Arghode
ABSTRACT	As the world population increases, the demand increases for quality drinking water. Surface and groundwater resources are being utilized faster than they can be recharged. Rainwater harvesting is an old practice that is being adopted by many nations as a viable decentralized water source. Vidarbha is water scarce region. The rainfall is irregular in nature. Ground water is major source of water and that's why ground water is declining day by day. It has resulted in the alarming depletion of water level & drastic deterioration in ground water quality. In Nagpur average rainfall is below normal rainfall. This project describes a collaborative & development of affordable technologies for capturing & retaining nmoff including that from roof tops and roads using this as a valuable sources of water and artificially recharge the percolation well and ultimately increase the ground water level. This can be helpful as a valuable water source in future. Development relies heavily on the availability of fresh water resources. Insufficient water supply hinders economical development as low grade water supply restricts efforts to improve the health sector and sanitation. Rainwater is available in many regions, but often it is only discharged into drainage systems or the nearest river instead of being utilized. Especially in cities, where the fresh water demand is steadily increasing, rainwater management becomes a crucial parameter for sustainable urban development. Rainwater, if discharged into the drainage systems, interacts with solid and liquid wastes and Consequently becomes a liquid waste itself and an additional burden for human health, settlements and the environment. However, the negative effects of area sealing and min water drainage, especially decreased ground water recharge and increasing flood risks expanding urban environments, are not understood or underestimated.

TITLE	3.5 Coconut Fibre Reinforced Concrete
AUTHOR	Aishwarya Mate, Prachi Chikate, Neha Babhulkar, PayalBorkar, Pranita Porkute, TusharDange.
ABSTRACT	Sustainability is a wide accepted concept in modern construction scenario. Even though the construction industry is revolutionizing in a significant manner in terms of both equipment and materials used, the cost of construction has skyrocketed along with the deteriorative impact on environment. This resulted in the adoption of a more balanced approach with the environment as its nerve centre to create a better world to live in. This has led to the adoption of a natural fibre like Coconut for the strength enhancement in concrete Coconut fibre is available in abundance at the test site, which makes it quite viable as a reinforcement material in concrete. Further, it acts as a new source of income for the coconut producer who gets the benefits of the new demand generated by the construction industry. In addition to this, it is an effective method for the disposal of coir mattress waste which will reduce the demand for additional waste disposal infrastructure and decrease the load on existing landfills and incinerators. The problem of high rate of water absorption of the fibre could be reduced by coating the fibers with oil. Moreover, the fibres being natural in origin is ecologically sustainable and can bring down the global carbon footprint quite effectively. This study aimed at analyzing the variation in strength of coconut fiber (oil coated raw and oil coated processed fibres) reinforced concrete at varying fibre contents and to compare it with that of conventional concrete. The various strength aspects analyzed are the flexural, compressive and tensile strength of the coconut fiber reinforced concrete at varying percentages (4%,5%,6% by the weight of cement) of fiber. The influence of shape of fiber on strength is also studied by testing on coconut fiber mesh of predetermined dimensions. The optimal percentage of both the processed fiber strands and raw fiber meshes were found out by trial and error and the optimum percentage of super plasticizer needed for the required workability was also determined.

TITLE	3.6 Stabilization of Expansion Soil Using of Fly Ash & Ceramic Tile Dust
AUTHOR	Ashwaghosh A. Sondawale, Indrajit S. Sardar, Mayuri R. Gaikwad, Pawan D. Padole, Rohit D. Shende, Rupesh B. Dighore,Sohail N. Ainapure
ABSTRACT	Nearly 51.8 million hectares of land area in India are covered with Expansive soil (mainly Black Cotton soil). The property of these expansive soils, in general, is that they are very hard when in dry state, but they lose all of their strength when in wet state. In light of this property of expansive soils, these soils pose problems worldwide that serve as challenge to overcome for the Geotechnical engineers. One of the most important aspects for construction purposes is soil stabilization, which is used widely in foundation and road pavement constructions; this is because such a stabilization regime improves engineering properties of the soil, such as volume stability, strength and durability. In this process, removal or replacing of the problematic soil is done; replacement is done by a better-quality material, or the soil is treated with an additive. In the present study, using fly ash obtained from Sesa Sterlite, Jharsuguda, Odisha, stabilization of black cotton soil obtained from Nagpur is attempted. With various proportions of this additive i.e. 10%, 20%, 30%, 40% & 50%, expansive soils is stabilized. Owing to the fact that fly ash possess no plastic property, plasticity index (P.I.) of clay-fly ash mixes show a decrease in value with increasing fly ash content. In conclusion, addition of fly ash results in decrease in plasticity of the expansive soil, and increase in workability by changing its grain size and colloidal reaction. Tested under both soaked and un- soaked conditions, the CBR values of clay with fly ash mixes were observed. Analysis of the formerly found result exposes the potential of fly ash as an additive that could be used for improving the engineering properties of expansive soils.

TITLE	3.7 Study And Design of Sewage Treatment Plant
AUTHOR	Amit Awachat, Pankajkumar B. Meshram, ChandanRithe, Harish S. Kawle, Rahul C. Shendre, Shahjad G. Hussen,Vaibhao T. Farkase
ABSTRACT	The GovindraoWanjari College of Engineering & Technology is one of the most important educational institutes in state of Maharashtra with a large number of students studying in its campus consisting of a number of laboratories of various department academic building. Waste water is water that has adverse effects on environments. The sewage from campus has bem identified which tends to water pollution. In this project waste water characterization has been performed followed by the design of sewage treatment plant. The presents study involved the analysis of Turbidity, Colour and Odour, Temperature, Total Solid, pH value, Chlorine content, D.O., B.O.D. and Hardness Project details with the design of various treatment unit such as Receiving chamber, Fine screen, Grit chamber, skimming tank, Primary sedimentation tank, Aeration tank, Secondary sedimentation tank, Filteration tank, sludge stabilization tank and Sludge drying bed. There are two fundamental reasons for treatment of wastewater viz., prevention of pollution and thereby protecting the environment and protecting the health by safe gardening water supplies and preventing the spread of water born disease. Proper design, construction together with good operation and maintenance are essential for waste water treatment plants, in order to produce effluents which are satisfying the safe disposal standards prescribed by the regulatory authorities. The objective is to a design sewage treatment unit to produce an environmentally sage fluid waste stream & solid waste (treated sludge) suitable for purposes like gardening, washing vehicles and the rest part of water can be used for toilet flushing

4. COMPUTER SCIENCE & ENGINEERING DEPARTMENT

TITLE	4.1 Digital Library Management System
AUTHOR	Ms. Bharti S. Chikhale, Ms. Gayatri K. Agasti, Mr. Vijay D. Panse. Mr. Aman M. Sonare. Ms. Pratiksha P. Chambhare. Prof. P.S. Gumgaonkar
ABSTRACT	Internet and Distributed Network System created scope for research in the area of information system and its related fields. Digital Library, one of the most recent developments in the Library and Information Science, which helps its user to seek information through wed browser. Digital Library is organized assortment of information, with its supported services and the place where the information is kept in digital format and can be retrieved over a network. Since the last one-decade researchers are focusing on the user pf Digital Library to develop more efficient and effective system to provide quality services to users. The main aim of this paper to provide literature on Digital Library with respect to its user that may be helpful for future research. The paper discusses about the user centric approach in the context of Digital Library. Researchers are working on the system upgradation by using wireless technology to connect end user directly with libraries. Further other area such as user's perceptions, Attitude, Adoption and Satisfaction with respect to Digital Library are also discussed.

TITLE	4.2 E- Parisar: A smartphone Based Approach for E- waste Management & Recycling.
AUTHOR	Mr. Giridhar Gawture, Mr. Sanket Waghade, Mr. Vhiki Pendre, Prof. G.D. Nikude
ABSTRACT	Electronic waste or E- waste is relatively a novel addition to the ever-growing hazardous waste stream. It includes discarded electronics and electrical equipment. There is a lack of consensus as to whether the term should apply to resale, reuse and refurbishing industries, or only to product that cannot be used for its intended purpose. Informal processing of electronic waste in developing countries may causes serious health and pollution problem, through these countries are also most likely to reuse and repaired electronic; India is no exception to it. However, the existing management practices related to E- waste in India are reasonably poor and have the potential to risk both human health and the environment. The hazardous content of these material poses a threat to human health and environment. Discarded computers, Television, VCRs, Stereos, Copies, Flax machine, electronic lamp, Cell phones, Audio Equipment batteries if improperly disposed can leach lead and other substances into soil and groundwater. Many of these products can be reused, refurbished, or recycled in an environmentally sound so that they are less harmful to the ecosystem. Moreover, the policy level initiative is not being implement in an appropriate way during the course of the studies it has been found that there is an urgent need to address the issues related to E-waste in India in order to avoid its detrimental future consequences. This project highlights the hazards of e-waste, the need for its appropriate management and options that can be implemented.

TITLE	4.3 Thermal Face Recognition Using Machine Learning
AUTHOR	Prof. Vivekanand Thakare, Mr. Yash Lande, Ms. Pallavi Moundekar, Ms. Priya Chamat, Ms. Shrushti Sangode.
ABSTRACT	We proposed a comparatively study of face recognition act with observable and thermal infrared imagery, emphasizing the influence of time-lapse between enrollment and testing images. Past research in this area, with little allowances, concentrated on result achieved when enrollment and testing images were acquired in the same period. We show that the performance different between visible and thermal recognition in a time lapse situation is less significant than earlier assumed, and in fact is not statically meaningful on existing data collections. The knowledge for deep learning in this field of thermal infrared face recognition has recently grow to be more represented for use in learning, thus allowing for the many groups in use on this subject to get many novel findings. Thermal infrared face recognition helps identify faces that are not able to be identified in visible light and can additionally recognize facial blood line structure, earlier research about temperature variations, mathematical formulas, wave types, and method in thermal infrared face recognition is reviewed.

TITLE	4.4 Digitalized Examination System
AUTHOR	Prof. M. K. Vairalkar, Mr. Shivam Kohale, Ms. Mayuri Raut, Ms. Mayuri Purankar.
ABSTRACT	Digitalized examination system is a web- based examination system where examinations are given online, through the internet using a computer system. Research and comparison for various web examination system within the current individual field, proposed the set of design modes about general examination platforms which applies in colleges and universities, research and analysis the key technology, and proposed improved scheme, made system being perfect.

TITLE	4.5 Flight Ticket Price Predictor Using Python
AUTHOR	Prof.Vivekanand P. Thakre, Ms.Ankita Sanjay Murraya, Ms.Roshani Bandu Gawade ,Ms. Mrunali M. Sawarkar ,Ms. Trupti Khemraj Shende ,Ms. Ujjwala Kamlesh Badole
ABSTRACT	Boxer timing for airline ticket purchasing form the consumer's perspectives is challenging principally because buyer have insufficient information for reasoning about future price movements. In this project, we mainly directed to uncover underlying drift to flight ticket prices in India using historical data and also the advice the best time to buy a flight ticket. Remarkable, the trends of the price are highly sensitive to the route, month of departure, day of departure time of the day is holiday and airline carrier. Highly competitive routes like most business routes hand a non-decreasing trend where prices increased as day to departure decreased.

TITLE	4.6 Hospital Management System in Django
AUTHOR	Prof. M. V. Gawande, Ms. Pooja Pisey, Ms. Astha Anil Shinde, Mr. Punit Ghagre, Ms. Komal Bhusari
ABSTRACT	The purpose of the project entitled "Hospital Management System in Django" is to computerize the Front workplace Management of the hospital to develop a software package that is user-friendly easy, fast, and value-effective. It deals with the gathering of patient's info, identification details, etc. historically, it had been done manually. The most operate of the system is to register and store patient details and doctor details and retrieve this detail as and once needed, conjointly to control these details meaningfully System input contains patient details, and identification details, whereas system output is to induce these details on the screen. The Hospital Management System will be entered by employing a username and countersign. it's accessible either by an associate degree administrator secretary. Solely they'll add knowledge into the info. The information will be retrieved simply. The information square measure is well protected for private use and makes the information process in no time.

5. MECHANICAL ENGINEERING DEPARTMENT

TITLE	5.1 Wheelchair cum Stretcher via Linkage Mechanism
AUTHOR	Mr. Saksham Tapase, Mr. Darshan Pote, Mr. Rupesh Shivankar, Mr. Archit Yeginwar
ABSTRACT	The wheelchairs and stretchers are very commonly used in the hospitals, airports,railway stations etc. The movement of a physically disabled person from one place toanother during their unhealthy conditions becomes a difficult task to move the patientwithin the hospital campus for the basic necessities, health check-up, medical tests etc.This design here, is a wheel chair cum stretcher. It can be converted into thewheelchair from a stretcher and vice versa according the requirements. A simplelinkage mechanism is used to provide the motion of converting in which a linkage isconnected to front (leg rest) and other linkage is connected to the back (back rest).These linkages are attached to another common linkage which is joined on the shaft towhich motion is delivered via motor so that when the motor shaft will rotate it willfurther provide motion to the shaft which will move the linkages and will perform theconverting from wheelchair to stretcher. Keywords- mechanism, linkages, wheelchair, stretcher.

TITLE	5.2 Design and fabrication of See Saw Operated Pump
AUTHOR	Mr. Ankush H.Patle, Mr.Amit G.Kaware, Mr.Rajesh O.Thakur, Mr. Mahesh B.Poreti
ABSTRACT	This is anupdated and expanded new edition surveying the water –lifting technologies that are available and appropriate for small holdings.It examines the costs and general suitability of the different technologies to enable farmers and policy makers to make informed choices .More than one billion people still do not have access to safe drinking water, and almost two billion people suffer from designs arising from contaminated water due to poor sanitation. Irrigation is essential for the basic food requirements of billions of people .The growing world population and global climate change make the challenges of providing adequate clean water, sanitation and food even more pressing. At the heart of effective irrigation lies the problem of lifting or pumping water. Key Words: Water lifting tech., Pump, Manual, irrigation

TITLE	5.3 Design and fabrication of Peddle Powered Vegetable Shredder Machine
AUTHOR	Mr. Gaurav Shende, Mr. Vaibhav Gadekar, Mr. Chetan Lilhare, Mr. Shubham Nile.
ABSTRACT	The scope of this project was to design and development of Shredder machine focus on chopping of vegetables, plant leaves .This chopped powder is used to prepare vermin compost.The project began with collection of information and data on user lifestyle and current process by which they perform their job.Concepts were developed with reference of four different shredder machines and operating processes.Concept was developed considering the safety factor users operating environment and maintenance. Considering the users needs and buying capacity a prototype was fabricated.The machine consist of single phase motor,spur gear,bearings,structural frame, cutter and dual shaft.The power from electrical motor is transmitted to cutter shaft through a belt drive.The material get chopped and powder is collected at the bottom. Key Words: Shredding machine, Cutter, spur gear, bicycle shaft, Compost.

TITLE	5.4 Secret Locker System
AUTHOR	Prashant Vilas Dongre, Praful Shivankar, Siddhant Manusmare, Nehal Kurve
ABSTRACT	A door as an access to a room and meant to give protection for what inside. As time goes on, a lot of methods has been implemented into a door in order to increase the security level of the door. A knock is an action done to a certain area which produces vibration and sound. This knock can be used to increase the security system of a door lock by using at Magnetic sensor. Magnetic sensor receives vibration and converts it into electrical signal The Magnetic sensor is connected to the microcontroller. A knock done by every people to a door has a different pattern which means different timing in every pattern done. This pattern can be used as a standard for the Magnetic sensor to detect a correct knock. This final project concentrates in designing a prototype of knock based door security system that will work as an integrated system of micro servo equipped with a Magnetic sensor and a knock as the key. The system also equipped with a limit switch that is responsible to lock the door automatically whenever the door touches the limit switch. Keywords: Protection, magnetic sensor, knock, integrated system.

TITLE	5.5 Fabrication of Portable Cloth Dryer Machine
AUTHOR	Mr. Ajay Hajare, Mr.Akash Dhole, Mr. Pratik Thakare,Mr.SahilNarekar
ABSTRACT	As science continues to progress, human civilization has ever enter into a new world. Household electrification has become a symbol of progress. Formerly, drying clothes normally use natural way by using the sun of light energy and the natural wind. But in many parts of India like Assam, Simla, Meghalaya and some humid regions in foreign countries,and the urban area where limited sunlight due to high building and restricted air flow for house types such as high rise condominiums and apartments, natural drying is prohibited in some housing areas clothes are still wet in several days after washing. People deeply suffered from it. The invention of portable clothe drying machine has solved this problem and has brought great convenience to people living in wet areas. The portable cloth drying machine helps in drying out the clothes in all seasons. This paper brought a new design conception which makes innovative design and research from the function and structure, materials and technology and human relationships. To let people use it at the same time feel a happy convenience life. Keywords: Shaft Rotation, Electric powered, Cloth Handling, House Hold Application

TITLE	5.6 Standalone Solar Powered Domestic Groundwater Purifying System
AUTHOR	Mr.Ankit R. Farsole, Mr.Kundan S. Pusadkar, Mr. Manish D. Saini , Mr.Shubham S. Darwai, Mr.Suraj A. Hinge
ABSTRACT	About one-fifth of people on earth lack the access to safe drinking water, a condition that resulted in the death of 2.2 million people in 2004, as per the records of United Nations. Clean water use being a prime concern in many communities of developing countries. Contaminated water plays significant role in taking numerous lives in these localities, for which a number of efforts are being made for accessing safe purified drinking water. Fortunately, efficient and cheap water purification systems are being utilized and being tried to be accessed worldwide for easy access to clean water. In the following project we had tried to develop a "Cost Efficient Water Purification Technique" using the basic ideas of filtration and try to improve the methodology using the UV Filter, RO Filter, and Activated Carbon filter mechanism. The system developed is standalone and consist of Solar panel, solar charge controller, battery, pump, 3 stage filtration system, UV unit and water tank. As per the observations the system is effective in water purification and has long life. Also, the electricity is not required as the system runs on solar energy. Keywords: -Solar, Water Purification, Groundwater, Clean Water.

TITLE	5.7 Design and Fabrication of 3-Dimensional Lifting Machine
AUTHOR	Mr. Ranjit N. Chaudhari, Mr.Bhushan E. Makde, Mr. Nikhil D. Pachghare, Mr. Akash G. Nimje
ABSTRACT	As per technical evolution and latest requirement and related trends taken into consideration here effectively created an advanced optimistic system which can be use as a lift with multiple movement and also work as a storage and retrieval system. This system works on rack and pinion technology with vertical movement, horizontal movement and to and fro movement. This complete system is power optimized and work on 2v DC only with desired current rating according to motor used. This system uses rack and pinion mechanism for horizontal movement and to and from movement. This system also used rope pulley mechanism for vertical movement. This complete system uses high torque and medium torque motor. This system having advantages i.e. Multilevel movement is possible using advance arrangement, Optimistic design with secured movement, Shock Resistant, Easy to setup anywhere according to design System able to lift any material, human being, machines and devices with the use of high toque motor and proper arrangement of system, This system can be work as a universal lifting system for any industry, factories, schools and colleges, hospitals and malls. This system can be applicable to 3-D movement of Lift,3 D movement of crane for material Loading and unloading of materials i.e. concrete, bricks at buildings and towers, 3 D movement of automated multilevel car parking system, Distribution of Books in library racks with multi layer movement, Multi Layer 3 D Movement with painting of walls, Multi Layer 3 D Movement plaster mechanism, Multilayer watering system with 3 D movement, Multilayer land Crushing system with 3 D movement, Multilayer crop cutting system with 3 Dmovement, Multilevel concrete or tar road manufacturing mechanism.
Keywords: D (Dimensional), V (Volts), A (Ampere), W (Watts).

TITLE	5.8 Performance Evaluation of Domestic Refrigerator by Using LPG as Refrigerant
AUTHOR	Mr. Akash Wakodikar, Mr. Akshay Pandey, Mr. Mayuresh Londhe, Mr. Rohan Nimje
ABSTRACT	This work investigates the result of an experimental study carried out to determine the performance of domestic refrigerator when a propane-butane mixture is liquefied petroleum gas (LPG) which is locally available and comprises 24.4% propane, 56.4% butane and 17.2% isobutene which is very from company to company. The LPG is cheaper and possesses an environmentally friendly nature with no ozone depletion potential (ODP). It is used in world for cooking purposes. The various methods of refrigeration on the basis of standard refrigerant discussed. He refrigerator used in the present study is of medium size with a gross capacity of 125 litre and is designed to work on LPG. The performance parameters investigated is the refrigeration effect in certain time. The refrigerator worked efficiently when LPG was used as refrigerant instead of CFC-12. The evaporator temperature reached -5°C with and an ambient temperature of 12°C. Also, from the experiment which done in atmospheric condition, we can predict the optimum value of cooling effect with the suitable operating condition of regulating valve and capillary tube of the system. The results of the present work indicate the successful use of this propane-butane mixture as an alternative refrigerant to CFC-12 in domestic refrigerant. Keywords: Domestic refrigerator, LPG refrigerant, COP, Cooling effect, Refrigeration.

TITLE	5.9 Fabrication of Solar Operated Drilling Machine
AUTHOR	Komal V. Kharwade, Gowardhan T. Kumbhare, Shubham S. Vibhute, Deepak S. Admane.
ABSTRACT	This utility model claims a solar energy flat plate collector numerical control drilling machine drilling hole in the turning mechanism comprises guide rail horizontally driven device and drilling platform guide rail is set on the machine frame the upper sleeve is connected with a platform. Platform is equipped with a driving electric machine and the linkage of the drill head platform sides of front and back are respectively set with a pair of locating block and limiting sensor. This utility model has the following beneficial effects the drill head is set at the one that is horizontal drive device which is linked on the platform the platform is set on the limiting sensor realizes the distance of the drill bit to the outside of the drill bit is sleeved outside the invention claims a chamfer angle head hole of chamfer angle head is shorter than drill bit and at the end head is set with chamfer angle so as to make one time feed can be at the same time the crossing holes chamfering finished at the same time it greatly improves the work efficiency. A Drill machine that can be mounted and used in places with space constraints, powered by solar as a source of electricity instead of the conventional grid power. The mechanism provides easy movement of the drill and helps fix alignment problems during drilling at certain angle. Here horizontal, vertical and upside and downward drilling operations can also be performed. Solar as a source helps pursuit of clean energy. The accuracy of drilling operation can be improved. Keywords: Flat plate collector, platform, drilling machine, Solar.

TITLE	5.10 Design And Fabrication Of Lead Screw Operated Table Cum Trolley
AUTHOR	Shubhangi S. Murekar, Piyush B. Pandey, Shubham V. Bhoyar, Ulhas D. Verma
ABSTRACT	Every engineering product involve cost effective manufacturing and its versatility in application maintaining its aesthetics as well as assign service life without failure keeping those parameters in mind, we focused our intention on designing and analysing the scissor screw chain drive model for actual loads for varying models of automobile L.M.V. sectors. Automobile sectors are very keen at their productivity and customer satisfaction. We also keen at designing and optimization of scissor screw chain drive at the same time maintaining its strength and service life. After studying failure modes, we made a mathematical model analytically and by using software's thereby made a new versatile scissor screw chain drive that can be used for varying models of L.M.V automobile sector. Keywords: Versatility, scissor screw, L.M.V automobile sector.