

Orientation program for First Year Engineering 2017-2018

The orientation program was organized for newly admitted students of batch 2017-18. During this program, students have been acknowledged by all the official process which are very useful as the basics to them not only in the first year but all four years of engineering. Following is some important information given to students by authorities.

1. Students were guided for scholarship required documents.
2. Exam pattern of CBCGS.
3. Importance of unit test as the head of passing.
4. Attendance ordinance 6086 which mentions that every student has to fulfill 75% attendance criteria to appear MU exam.
5. How to plan study during semester.
6. College has taken efforts to give them more practice by conducting tutorials of different subjects.
7. Book issuing process of the library.
8. Maintain the discipline in the college campus.
9. With combined effect of college authorities and faculties we handover, very precisely written and bound copies of all second semester subjects workbooks to students during second semester of 2017-18.

**Department of Applied Sciences, MGM's College of Engineering and Technology,
Kamothe, Navi Mumbai**



Lecture on 'Crystal Structure' for First Year Engineering Students

by

Dr. Dattatray S Wavhal
Head of Department of Physics
VJTI Matunga Mumbai

Organized by Applied Physics Club

Applied Physics Club had organized a lecture by Dr. Dattatray S Wavhal, on 'Crystal Structure' for First Year Engineering Students on 16th Oct 2017. Dr. Dattatraya Wavhal has been professor and Head of Physics Department at VJTI Matunga, Mumbai. Dr. Wavhal earned a PhD in Low Temperature Plasma processes from ICT, Matunga, Mumbai in 1998. He was postdoctoral researcher at Colorado State University, Colorado USA in the year 2001-2003. He was visiting scientist at the University of Texas at Arlington, Texas USA.

Prof. S.U. Bagal introduced the speaker and the topic of the lecture to the students. In his lecture **Prof.** Dr. Dattatray S Wavhal explained the basic concepts of crystal structure and different types of the crystal structures. He explained the topic with simple examples in daily life. He also introduced the engineering applications of crystal. The faculties of Applied Physics along with first year engineering students attended the lecture. The lecture was useful to build the foundation of study of modern technology related to the crystal structure and their applications in engineering.

The lecture was followed by a visit to Applied Physics Laboratory, review of lab manuals and student journals, discussion on various subject topics with faculties of Applied Physics. Dr. Wavhal appreciated the method for conducting the practicals, laboratory manuals, and student journals and also given the valuable inputs about conduction of labs for deep understanding of the experiments and self-learning to the students. Suggestions were extended for self-explanatory lab manuals.

The session was concluded with a meeting of Dr. Dattatray S Wavhal with Director General, Dean Academics, and faculties of Applied Physics.



Lecture by Prof. Dr. Wavhal delivering a lecture.



First Year Engineering students attending the lecture by Prof. Dr. Wavhal



First Year Engineering students attending the lecture by Prof. Dr. Wavhal

Lecture on 'Complex Number' for First Year Engineering Students

by

Prof.B.G.Bilapatti
Head of Department of Mathematics
VJTI Matunga Mumbai

Applied Science Department had organized a lecture by Prof.B.G.Bilapatti, on 'Complex Number' for First Year Engineering Students on 7th Oct 2017. Prof.B.G.Bilapatti has been professor and Head of Mathematics Department at VJTI Matunga, Mumbai.

Prof. Rekha Rathore introduced the speaker and the topic of the lecture to the students. In his lecture Prof.B.G.Bilapatti explained the basic concepts of Complex Number and different forms of Complex Numbers. He explained the topic with simple examples in daily life. He also introduced the engineering applications of Complex Number. The faculties of Applied Mathematics along with first year engineering students attended the lecture. The lecture was useful to the students about Complex Numbers and their applications in engineering. Also Sir has given the simple tips to solve the problems.

The session was concluded with a meeting of Prof.B.G.Bilapatti with Director General, Dean Academics, and faculties of Applied Mathematics.

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REPORT OF ENGINEERING MATHEMATICS CLUB

First Year Engineering Applied Science Department had organized a Guest Lecture on ” **Common mistakes done in solving mathematical problems**”- for the students of First Year Engineering Semester – II in Sir Vishveshwaraya Hall, 3rd floor MGMCET, on 31st JAN'2018. The Speaker for the lecture was Prof. K..P Patil, who is presently teaching in different institutes and he is the Chairman of Bal Vidya Niketan School in Andheri. He was the Head , Department of Mathematics in VJTI, Matunga, for 10 years.

Dr. U B Jangam, introduced the speaker and the topic of the lecture to the students. In his lecture **Prof. Patil** discussed and explained from the ancient times till the present day how the students do the mistakes while solving the problems. He also introduced the students how to avoid the mistakes by many exclusive examples. He shared his own experiences how and where they do the mistakes.

For example

1) find the value of x for the given equation , $x^2 = 2x \Rightarrow x=2$ is not only the answer

But $x^2 - 2x = 0 \Rightarrow x(x - 2) = 0 \Rightarrow x = 0 \text{ and } (x - 2) = 0$

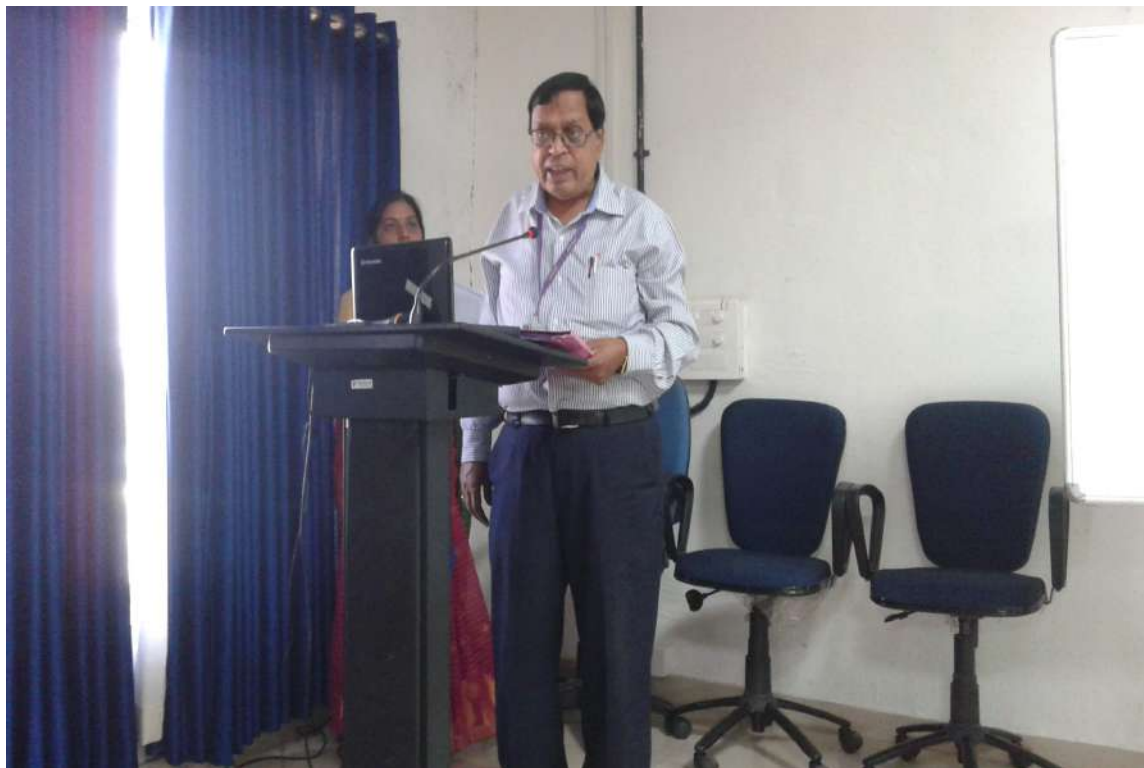
$\Rightarrow x = 0 \text{ and } x = 2$

Therefore the equation has two values 0 and 2.

All the faculty from Mathematics also attended the session along with the first year engineering students. The session really enlightened the audience with useful tips for solving the problems. The program was concluded with the vote of thanks.

Mathematics club will be organizing similar activities in the coming semester also.

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Report on Swachhata Abhiyan

Swachh Bharat Abhiyan is a dream project of our Prime Minister Shri.Narendra Modi .He put forward the vision of making India clean by 2019,when India celebrate the 150th birth anniversary of our father of nation Mahatma Gandhi .

Swachh Bharat Abhiyan is a campaign in India that aims to clean up the streets, roads and infrastructure of India's cities, towns and rural areas.

The objectives of Swachh Bharat include eliminating open defecation through the construction of house-hold owned toilets and establishing an accountable mechanism of monitoring toilet use.

In this connection MGMCET has formed a group of 25 students to maintain the cleanliness at various parts of the college. The group has started the action plan on 17/01/2018 and got it cleaned the classroom, projector, fans by the help of sweepers.

This initiative not only helpful to maintain the cleanliness but to motivate others to maintain the cleanliness also.

As directed by our Honourable Director General , Respected Principal Sir and Dean FE

Dr.Sunita Shinde ,we the coordinations of Swachhata Abhiyan Prof .Rekha Rathore ,Prof.Smita Bhadane and Dr.Neelam Lohkare coordinated with Students and non teaching staff can be achieved by collective efforts.





Also made the poster of swachhta



Report on 64th birth anniversary of H.H Baba Hardev Singhji Maharaj SNCR

Sant Nirankari Charitable Foundation (SNCF) is an organization is engaged in organizing socio-charitable activities as per its primary objective to render selfless service of humanity as its pivotal philosophy. The Foundation has been formed to effectively implement the board vision of Sant Nirankari Mission, the vision of reaching out to more and more people and around the world and touching their lives with love, care and kindness, bringing smiles on every faces. On the occasion of 64th birth anniversary of H.H. Baba Hardev Singhji Maharaj SNCR joined their mission of swatch Bharat Abhiyan with 500 volunteers have chosen our MGM campus under cleanliness drive program on 24-02-2018, 8:00 am to 12:00 noon



As directed by our Respected Principal Sir we the coordinator of Swachhta Abhiyan Prof .Rekha Rathore ,Prof Lathika C, Prof.Smita Bhadane have coordinated with SNCF and welcomed them to our campus for their selfless service . We thanked them for giving us the opportunity to join hands with them to clean our campus .We also requested them to give us an opportunity to join hands for such noble activities , whenever such kind of drive are planned in public premises in nearby locations so that the mission of swatch Bharat can be achieved by collective efforts.

Report on National Science Day for First Year Engineering Students on 07/03/2018

On 07/03/2018 Applied Science department has celebrated National Science Day. The chief guest of National Science day was Dr. A. M. Bhagwat Chairman of Navi Mumbai Science foundation. He demonstrated the session on live experiments of science, based on different principles such as Bernaulli's theorem. Students got inspired from the session.

The programme was followed by poster presentation on innovation and creativity in science. 9 students from first year Engineering had participated in it. The topic for poster presentation was Elon Musk, Solar Energy, Power ray underwater Drone, Innovation in Tunnel etc. The 1st prize was given to Ms. Shivani Gaulkar (Div B). Two groups were given 2nd prize namely Soniya Dillikar, Sakshi Jadhav, Pallavi Jadhav (Div E) and Suraj Kanojiya (Div F).

Quiz competition was also arranged on the occasion of National science day. 6 groups of students were actively participated in quiz compition. Yash Rastogi, Yash Verma, Pranit P., Akhandpratap Singh, Soniya Dillikar (Div E) won the 1st prize. 2nd prize were shared by two groups namely Jatin Korde, Anand Gupta, Shivani Gaulkar (Div B) and Raj Thakkar, Shivaani Venkatesh, Ruchi Thakur, Siddesh Saigawkar, Radhika Sarade (Div D).

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The programme was successfully conducted with the visits of Principal Sir and Dr. Dinesh Singh. Few photographs of programme are attached.

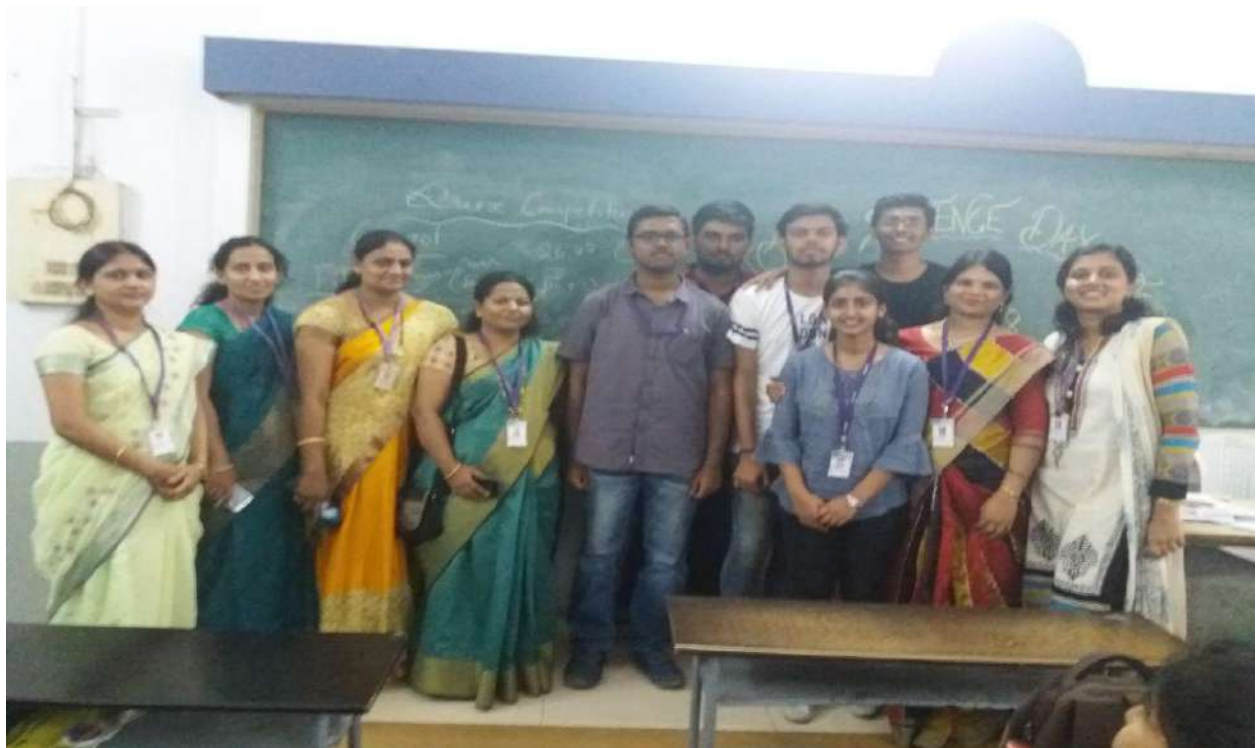


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Project club activity report

Under Club Activity, The department of first year engineering arranged the review of Projects, on Wednesday that is on 14th March 2018.

Dean F.E. and Principal Sir visited the class room number 05 where first year students made their project based on voice based module, solar power bank and water consumption tank for animals. In this review student shown their working models and on that they discussed with the help of presentations. After seen the project Principal sir and Dean FE mam given the suggestions for more improvement in their project, also they recommended for visiting robotics lab visit to student.

This week students shown more enthusiasm, activeness on the working of projects and found more response under this club activity. They came with their different ideas for making club activity successfully. Following given details of project.

AUTOMATIC DRINKING WATER SYSTEM FOR ANIMALS"

by SAURABH R. GARUD

Introduction

1. It is a resource that is a benefit to everyone.
2. To save money. Lower consumption means lower water bills.
3. To prepare for a drought. Many areas of the country have experienced drought conditions in the past few years. Water conservation helps prepare for these worst of times.
4. To comply with regulations. Many states and local regulators have established efficient water use regulations.

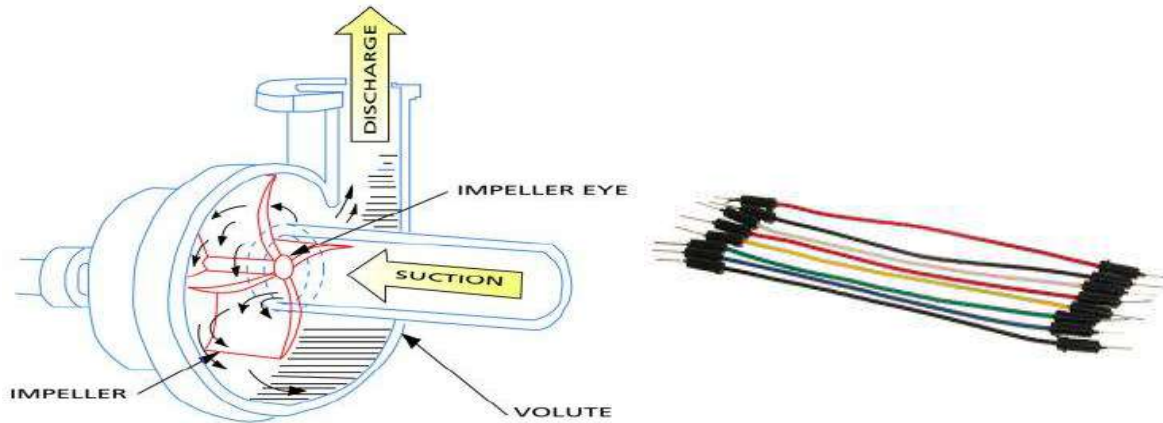
Importance

- Water should be conserved easily.
- It avoid the water losses through vaporization, flooding,overflowing
- Its time consuming,
- Less Energy Consumption
- Easy to install, operate,maintenance

Material

- 9 V Battery
- Reservoir tanks
- Centrifugal pump
- Metal plates
- Plastic tube
- Wires for connection
- Motor
- Level Controller

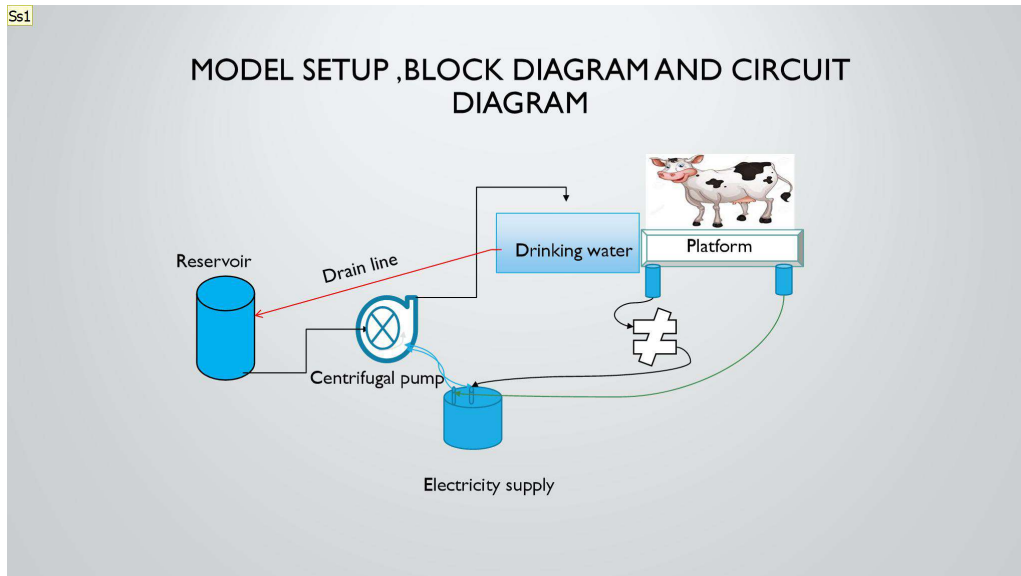




Working of instrument

- Centrifugal pump :-
 - To lift the water from reservoir to drinking water tank
 - it is generally used in low head high discharge
- Battery:- HIW HI-waote 9v battery we used for
- Motor :- Its mainly used to rotate the impellors in centrifugal pump
- Level Controllers :- these are generally used to avoid overflowing and flooding of tank, this is cascade with centrifugal pump, if level goes beyond the 80% pump will stop.

Model Setup ,block diagram and circuit Diagram



Advantages of model

- Water should be conserved easily.
- It avoid the water losses through vaporization, flooding,overflowing
- Its time & Energy consuming
- Easy to operate
- Avoids pollution

Conclusion

- From last Few decades water Supply getting shorter due to minimum rain fall or a draught condition,To prepare for a drought. Water conservation helps prepare for these worst of times.
- Adequate and Pollution free clean water can be provide easily
- It is easily handle and low the cost of installation and maintenance.

Nanorobotics submitted by Sakshi Singh

What are Micro/Nano robots.

Microbotics (or microrobotics) is the field of miniature robotics, in particular mobile robots with characteristic dimensions less than 1 mm. The term can also be used for robots capable of handling micrometer size components. .

Types

Nanorobotics is the emerging technology field creating machines or robots whose components are at or close to the scale of a nanometer (0,000000001 Meters – 10^{-9} Meters).More specifically, nanorobotics refers to the nanotechnology engineering discipline of designing and building nanorobots, with devices ranging in size from 0.1–10 micrometers and constructed of nanoscale or molecular components. The names

-nanobots,

-nanoids,

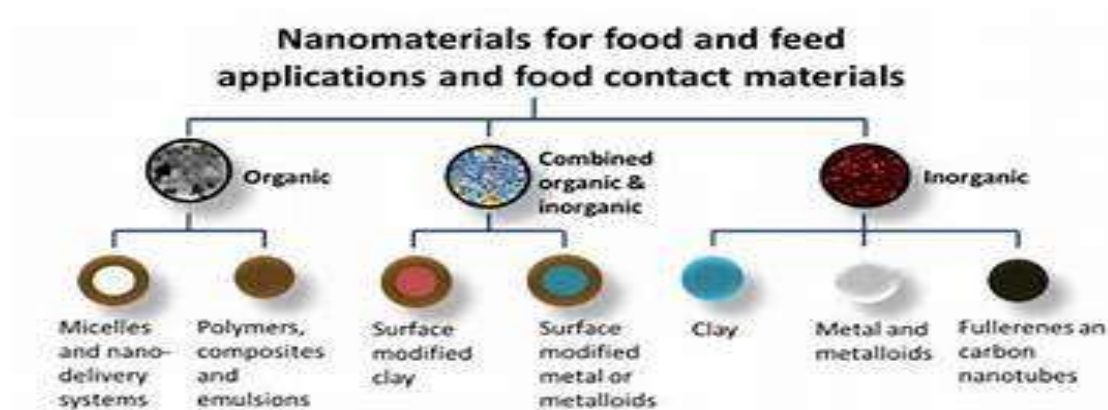
-nanites,

-nanomachines



APPLICATIONS OF NANOROBOTICS IN TECHNOLOGY

- Aguilera remarked that “nano” must exist naturally in food since even in natural foods (e.g., fresh fruits) structural components are built from molecules and, during digestion, break down into molecules. These molecules form ordered structures like cells, fibers, gels, emulsions, foams, and liquids, which give foods their various properties
- Applications of nanoscience to food processing by industry will also have a positive impact on consumers. Changes to food processing, on the other hand, are not as important with respect to the impact they would have on consumers.

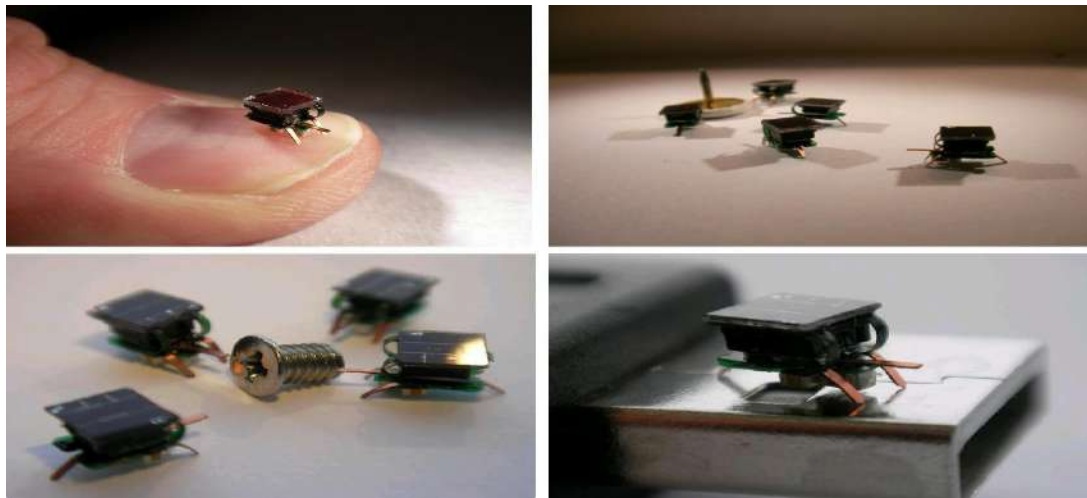


Conclusion :

In Electronics-

Nanotechnology is used for printed electronics for RFID , smart cards , smart packaging , It is used for more life-like video games and flexible displays for e-book readers .

Nanotechnology is used for nano scale transistors that are faster, more powerful , and increasingly the energy-efficient , You will see soon that your computer's entire memory may be stored on a single tiny chip .



In Waste Water Treatment

Type of Nanoparticle Type of pollutants removed

Carbon nano tubes Organic Contaminant

Nano Scale metal Oxide Heavy metals Radionucleides

Nano catalyst PCB, Azodyes, Pesticides etc

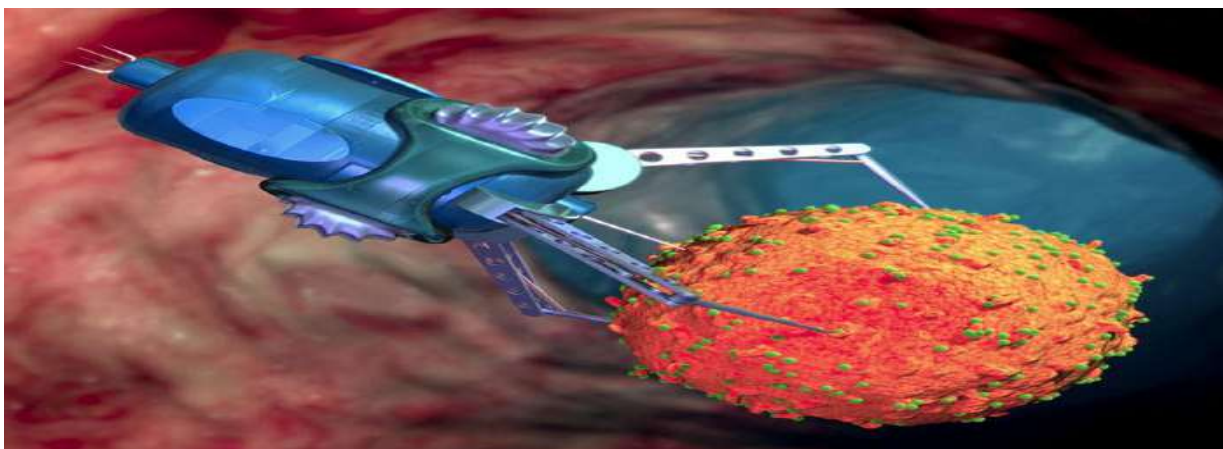
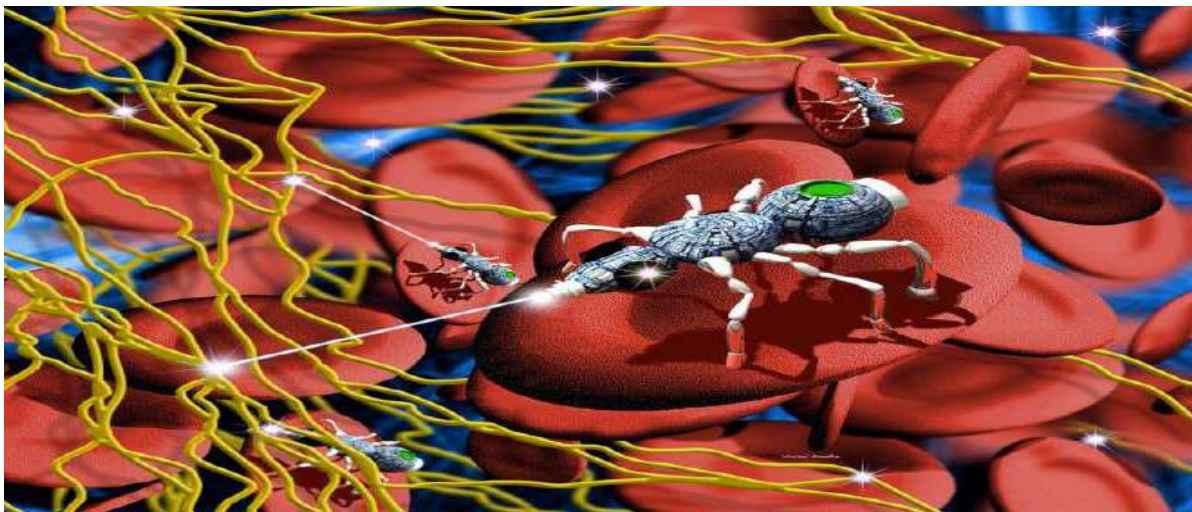
Nano Structured catalytic

Decomposition of organic

pollutant inactivation of micro organisms

In Medical field

- Fluorescent biological labels
- Drug and gene delivery
- Bio detection of pathogens
- Detection of proteins
- Probing of DNA structure
- Tissue engineering
- Tumour destruction via heating (hyperthermia)
- Separation and purification of biological molecules and cells [
- MRI contrast enhancement
- Phagokinetic studies



Advantage of micro/nano robots

- In medical field - end of illness (i.e. Cancer, heart diseases)
- Universal immunity- such disease like AIDS, flu
- Body sculpturing- changing of our appearance
- Less pollution
- Mass production in food and consumables

Disadvantages

- Health and safety issues: Nano particles can cause serious illness or damage to human body. Carbon Nanotubes could cause infection of lungs.
- Mass production in food and consumables. oil and Diamonds could become worthless.
- Loss of jobs in manufacturing and farming etc.
- Atomic weapons could be more accessible and destructive
- Creates social strife through increasing wealth gap.
- Nano pollution is created by toxic waste

BLUETOOTH CONTROLLED BOT

Submitted by

SHUBHAM KARKAR, RAKSHEET CHAWATHE, SHUBHAM PAGAR

SWAPNIL SHEVATE, MADHU YADAV, RIYA PALKAR, RAJ ZANJAD

Overview

The app is developed in such a way that it convert the voice command to text and transfer the text to the connected Bluetooth device.

The bluetooth connected on the Arduino board receives text from the Android app as characters and stored them as string to the assigned String.

There are words pre-programmed (forward, reverse, right , left and stop) to the arduino , whenever the received text matches with the pre-programmed words ,the arduino executes the command that assigned to the words.

Arduino can connect to Laptop to monitor serial communication and check the working process and the words received by the Bluetooth.

Requirement

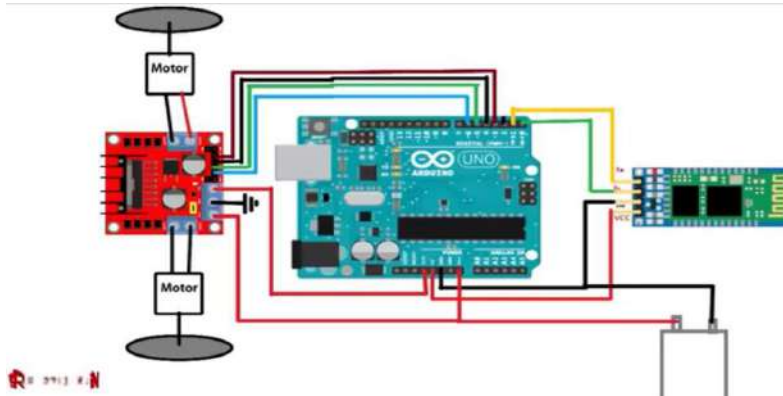
1. Arduino Uno
2. Bluetooth Module
3. Motor Driver
4. 4x Gear Motor
5. 4x Wheel
6. 1x Chasis
7. A breadboard Connecting wires
8. Arduino Compiler IDE installed on PC for compilation of program

ACTUAL COMPONENTS USED



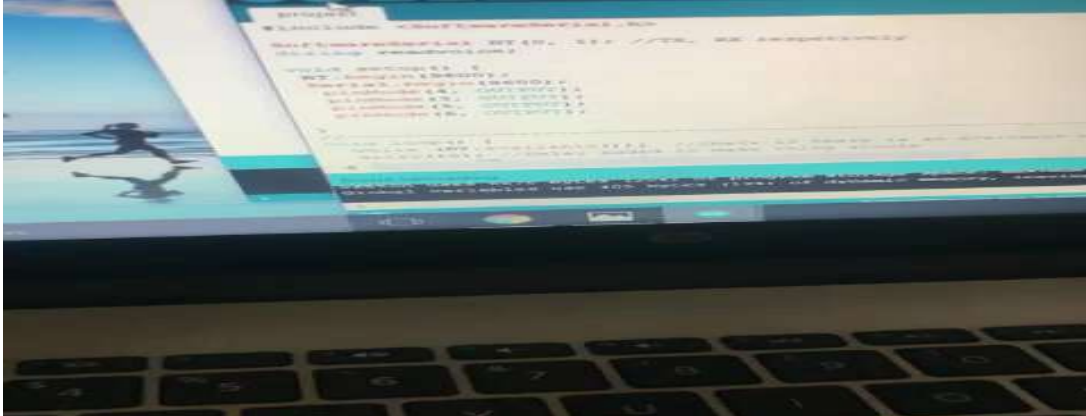
ASSEMBLY OF COMPONENTS:

- THE ASSEMBLY WAS MADE ON THE BASIS OF THE FOLLOWING FIGURE

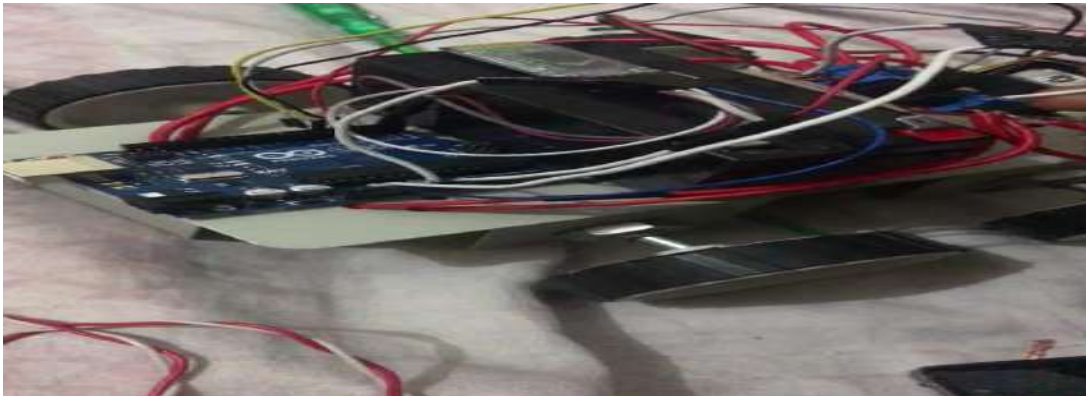


COMPILING OF PROGRAM

- THE PROGRAM IS THEN COMPILED USING ARDUINO UNO IDE COMPILER.
- IN ORDER TO INSTALL THE PROGRAM THE CABLE IS CONNECTED FROM ARDUINO TO THE PC.



ARDUINO BOT BOOTING UP FOR FIRST TIME!

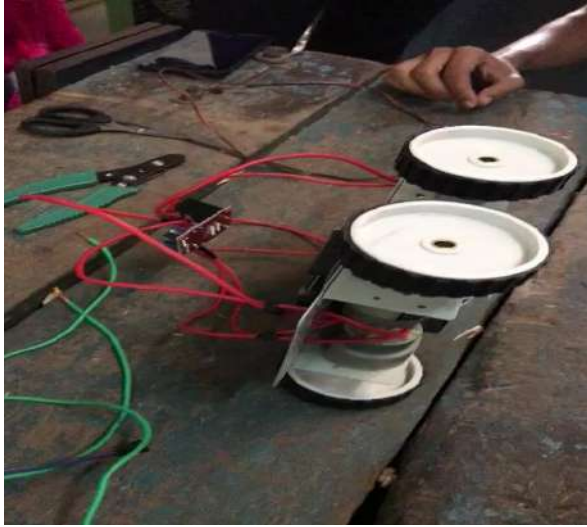


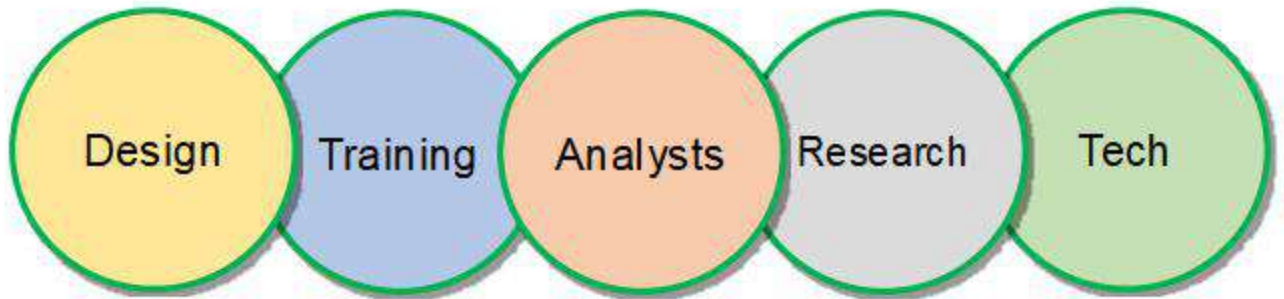
ARDUINO BLUETOOTH CONTROL APP

- THIS APP ALLOWS US TO SET UP BLUETOOTH MODULE USED IN ARDUINO.
- THERE ARE SEVERAL SIMILAR TYPES OF APPS AVAILABLE ON PLAYSTORE FOR FREE

PHOTO DURING PRESENTATION OF MODEL

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Through this Programs, endeavour is to connect Corporates to Campuses & provide them with the quintessential information they need to gear up for future!

It was organize for first year Engineering students for their personality depelovemet,Leadership and Entrepreneurship.

