

## **Report on A Three day Hands - on Training on Biomedical Instrumentation**

### **Description of Seminar:**

This Three - day Hands – on Training on “**Bio-Medical Instrumentation**” was organized by department of EIE, VRSEC on 13<sup>th</sup> – 15<sup>th</sup> Dec 2019.

Biomedical Instrumentation is the application of engineering principles and design concepts to medicine and biology for healthcare purposes (e.g. diagnostic or therapeutic). This field seeks to close the gap between engineering and medicine, combining the design and problem solving skills of engineering with medical biological sciences to advance health care treatment, including diagnosis, monitoring, and therapy. Also included under the scope of a biomedical engineer is the management of current medical equipment within hospitals while adhering to relevant industry standards. This involves equipment recommendations, procurement, routine testing and preventative maintenance, through to decommissioning and disposal. This role is also known as a Biomedical Equipment Technician (BMET) or clinical engineering.

Biomedical engineering has recently emerged as its own study, as compared to many other engineering fields. Such an evolution is common as a new field transition from being an interdisciplinary specialization among already-established fields, to being considered a field in itself. Much of the work in biomedical engineering consists of research and development, spanning a broad array of subfields (see below). Prominent biomedical engineering applications include the development of biocompatible prostheses, various diagnostic and therapeutic medical devices ranging from clinical equipment to micro-implants, common imaging equipment such as MRIs and EKG/ECGs, regenerative tissue growth, pharmaceutical drugs and therapeutic biologicals.

### **Objective:**

The Workshop is intended to cover the basics of Bio-Medical Instrumentation and various equipment's in medical field. During the workshop students will be given hands on training on concepts of medical devices such as patient monitoring system, ECG machine on 13<sup>th</sup> Dec 2019. On 14<sup>th</sup> Dec 2019 students will undergo hands on training on Defibrillator & AED along with drug deliver devices. On 15<sup>th</sup> Dec 2019, hands on training will be provided to students on Electrosurgery unit, ICU ventilator & Medical device testing Unit.

### **Methodology:**

An organizing committee under the following constituted to make the program more successful.

### **Co-ordinators:**

Mrs. Dr.C.S.S.Anupama, Assoc.Prof., EIE Dept.

Mr. M.Srinivas, Asst.Prof., EIE Dept.

**Resource persons:**

The workshop was carried out by the resource persons Mr.Ayyapadas, Director, Mr. Amburasan, Sr. Trainer, Mr. Aditya, Sr. Programmer, Mr. E.Harish Krishna, H.R, from Harvey Biomedical, Bangalore.

**Participants:**

Participants are students and Faculty of EIE Dept. (127 Participants)

**Outcome of the Workshop:** The participants will be able to

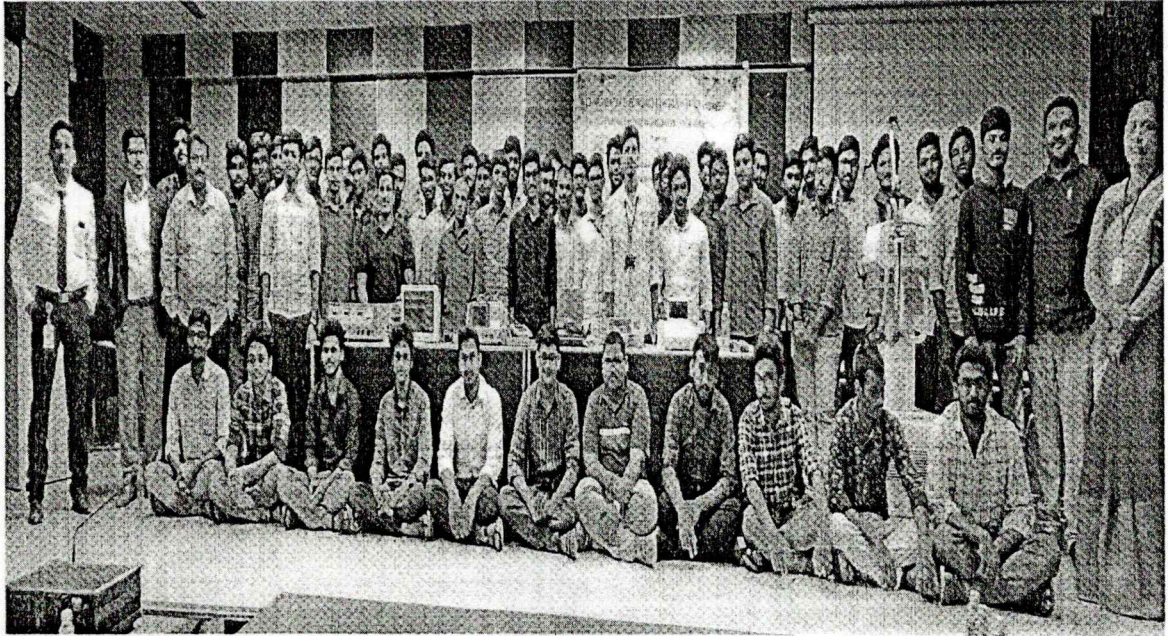
- Understand the basics of Biomedical Instrumentation.
- Understand the working principle of various Biomedical Equipment.
- Trained on Biomedical Equipment like Patient Monitoring System, ECG machine, Defibrillator, Electrosurgery Unit, ICU ventilator.

Dt: 16-12-2019

G N S  
(Dr.G.N.Swamy)  
Professor and Head, EIE

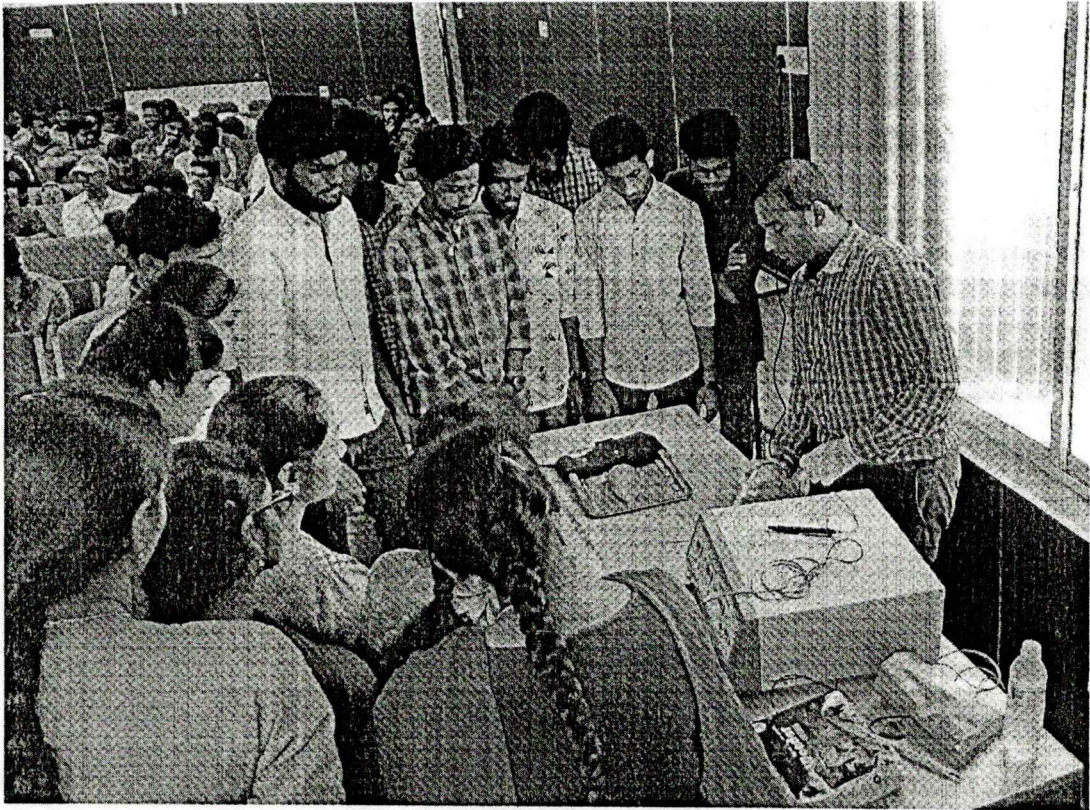
HEAD  
Dept. of Electronics & Instrumentation  
L. S. Swamy Institute of Technology  
Bangalore





G. N. C.  
V.R. Siddhartha Engineering College  
VIJAYAWADA-520 007





GND  
15/12/19

HEAD  
Dept. of Electronics & Instrumentation Engg.  
V.G. Gadgil Engineering College



**V.R.SIDDHARTHA ENGINEERING COLLEGE**  
**(Autonomous)**  
**Department of Electronics & Instrumentation Engineering**

Date:15-06-2020

**Details of Training given for Students for Improving the Placements**


One week Training program on "LabVIEW Core-I and Core-II" from 16-03-2020 to 21-03-2020 at EIE Department, VRSEC.

**The Training Covers**

1. Basic programming techniques of LabVIEW.
2. Training on LabVIEW toolboxes such as data acquisition, signal processing, image processing etc.
3. Training on interfacing of data acquisition hardware with LabVIEW.

**Outcome for last Training**

1. In the Academic year 2019-2020,three of 28 CLAD Qualified students were received internship at National Instruments, Bangalore.
2. Same students were also absorbed in NI allied Industry "Blauplugh" located at Bangalore.

  
(Dr.G.N.Swamy)

Prof. & HOD,Department of EIE

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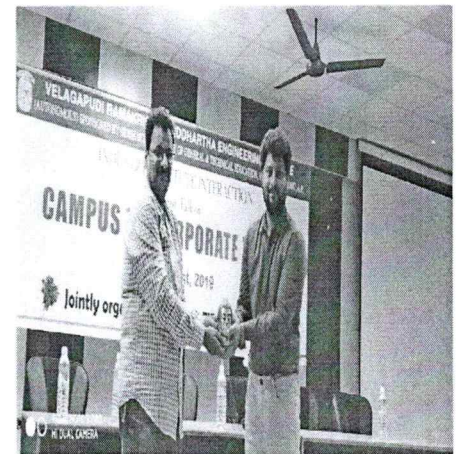
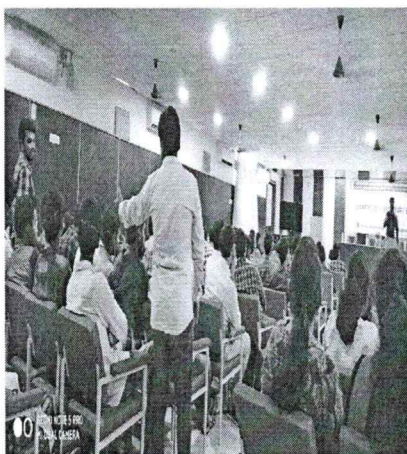


# V.R. Siddhartha Engineering College

## Department of Electronics & Instrumentation Engineering

### Report on Campus to Corporate World

The ISOI student chapter Department of EIE and Department of CSE jointly organized a guest talk on “Campus to Corporate World” on 21<sup>st</sup> Aug. 2019. The objective of this program was to Industry Institute Interaction. Mr. Surya Raichuri, Engineering Manager, Honeywell was the resource person for this event. He mainly addressed about the role of Instrumentation in the industry and as well in the real world. He discussed about how Honeywell takes the real world problems into projects and provides the solutions for the problems. He also discussed about the industry seeking skills from the student coming from campus. He answered to the questions posed by the students such as how they deal towards projects, certain real time problems where students can take up as the project work in order to provide certain solutions.



*G.N.P.*  
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**DEPARTMENT OF ELECTRONICS AND INSTRUMENTATION ENGINEERING  
V.R. SIDDHARTHA ENGINEERING COLLEGE**

**Report on Guest Lecture**

**Dt:04-12-2019**

**Title:** Role of Instrumentation Engineer in Onshore Oil and Gas.

**Description of Guest Lecture:**

The Guest Lecture on “Role of Instrumentation Engineer in Onshore Oil and Gas” was organized by department of EIE on 03-12-2019.

**Objective:**

The Guest Lecture is intended to cover the role of instrumentation engineers in Oil and Gas industries. To familiarize the real time experiences in Oil and Gas industries by the resource person and to provide details on certification programs which are useful for employment in industries.

**Significance of Instrumentation Engineer in Oil and Gas Industries:**

There are excellent opportunities for employment in the oil, chemical, gas and related industries due to the growing shortage of instrumentation/electrical (E&I) technicians, technologists and engineers. This is mainly due to the resumption of growth in these industries, the increasing need for higher technology methods of obtaining and processing oil and gas along with the retirement of the current ‘baby-boomer’ generation of engineers, technologists and technicians. Unfortunately, (or perhaps, fortunately for everyone working in these industries), as it is a finite declining resource, the price of oil is heading upwards steadily, thus making personnel and their associated oil and gas expertise in these industries even more valuable.

The technical challenges of extracting oil and gas are becoming ever more demanding, with increasing emphasis on more marginal fields and previously inaccessible zones such as deep oceans, Polar Regions, Falkland Islands and Greenland. Despite the significantly more sophisticated technology, oil and gas disasters are still happening throughout the world with horrendous environmental impact and there is now enormous governmental pressure on companies to reduce the risk of these major accidents happening. The instrumentation engineering professional has a significant role to play here in minimizing these accidents and improving safety further.

**The List of Certification courses are given below for employment in industries along with B. Tech Electronics and Instrumentation Engineering.**

1. Safety –NEBOSH Certificate.
2. Project Management Course-PMBOK certificate-PMP Certification
3. Construction Manager Course-CMAA
4. Welding Inspection Course-AWS (3.0,3.1,3.2 levels in AWS)



5. CSWIP course- (welding) level1-Technician, level2- Inspector, level3-Approver
6. Coating Inspection Course-NACE
7. Tank inspection Course- API653
8. Pressure Vessel Inspection Courses- API510
9. Pipeline Inspection Course- API570
10. Boiler and Pressure vessel Inspection- BNBI
11. Authorized Inspection and Maintenance Engineering Course-ASME
12. Contract Administration Course- CIARB and RICS
13. ISO 9001 for Quality Management
- 14.ISO 14001- Environment management.
15. ISO 45001
17. ISO27001
18. OHS and Security Management
19. Safety courses-CSP and BCSP

**Co-ordinator:**

Mr.P.Durgaprasadarao, Asst.Prof., EIE Dept.

**Resource person:**

Mr.V.Prabhu Kiran, Trainee Engineer, ADNOC-Onshore Oil and Gas, Abu Dhabi,UAE

**Participants:**

Participants are 3/4, 4/4 B.Tech students and faculty of EIE Dept.

**Outcome of the Guest Lecture:**The participants will be able to

- Understand the role of Instrumentation Engineer in Oil and Gas industries.
- Know the various certification programs for employment in industries.

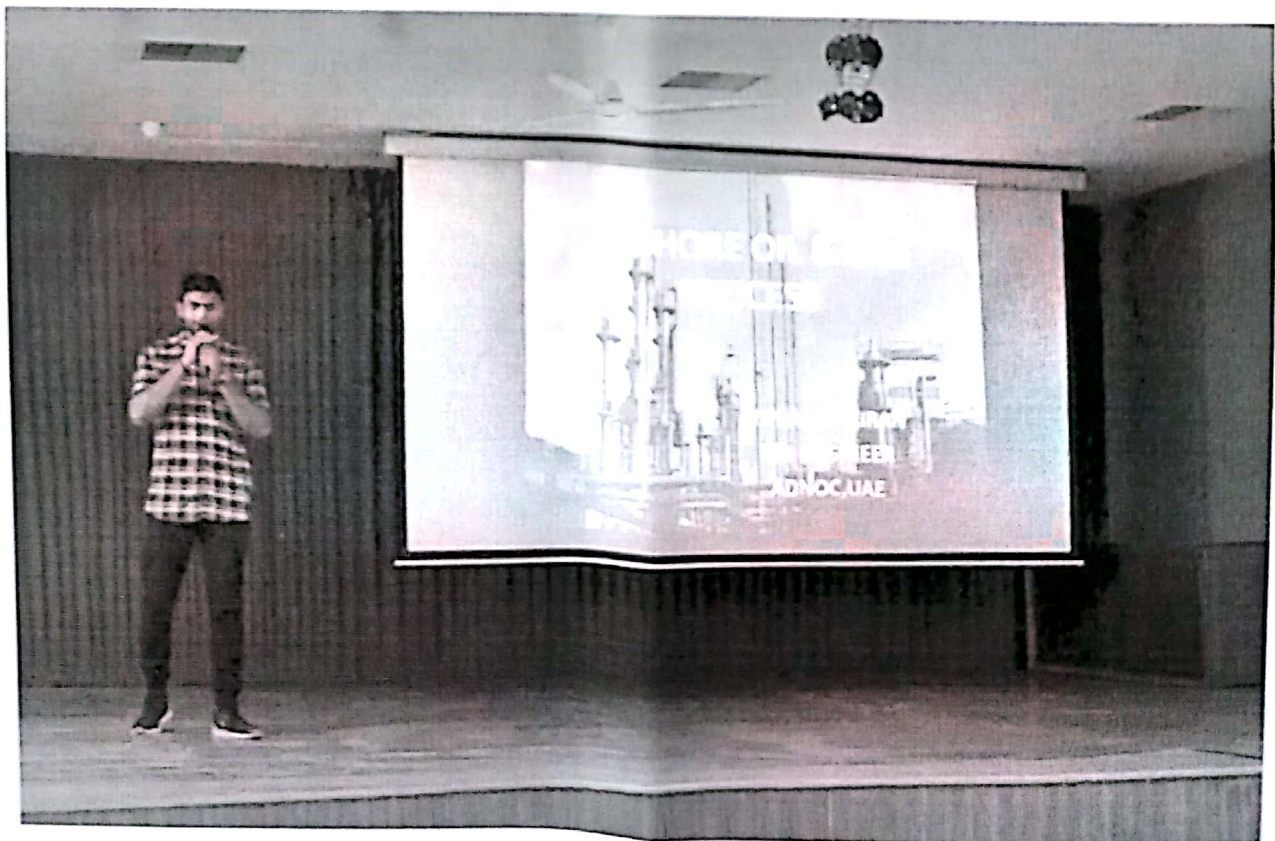
G.N.S  
(Dr.G.N.Swamy)

Professor and Head, EIE

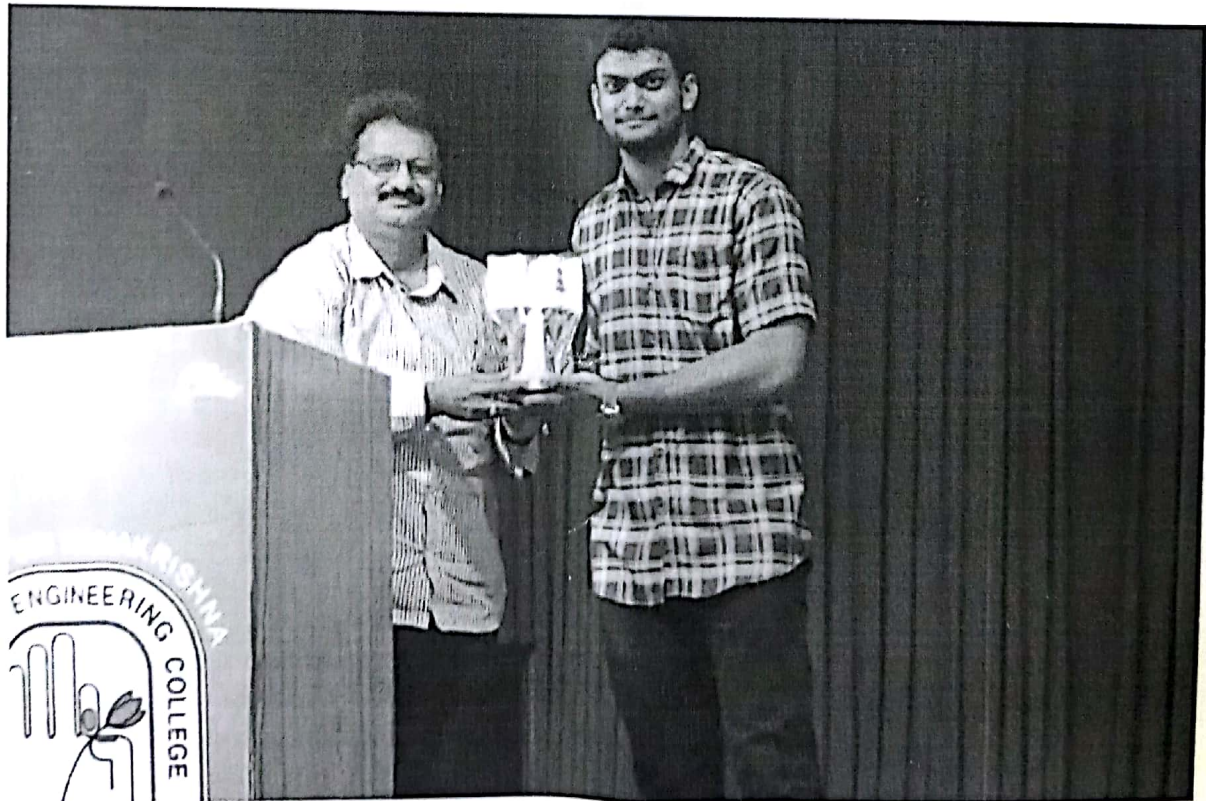
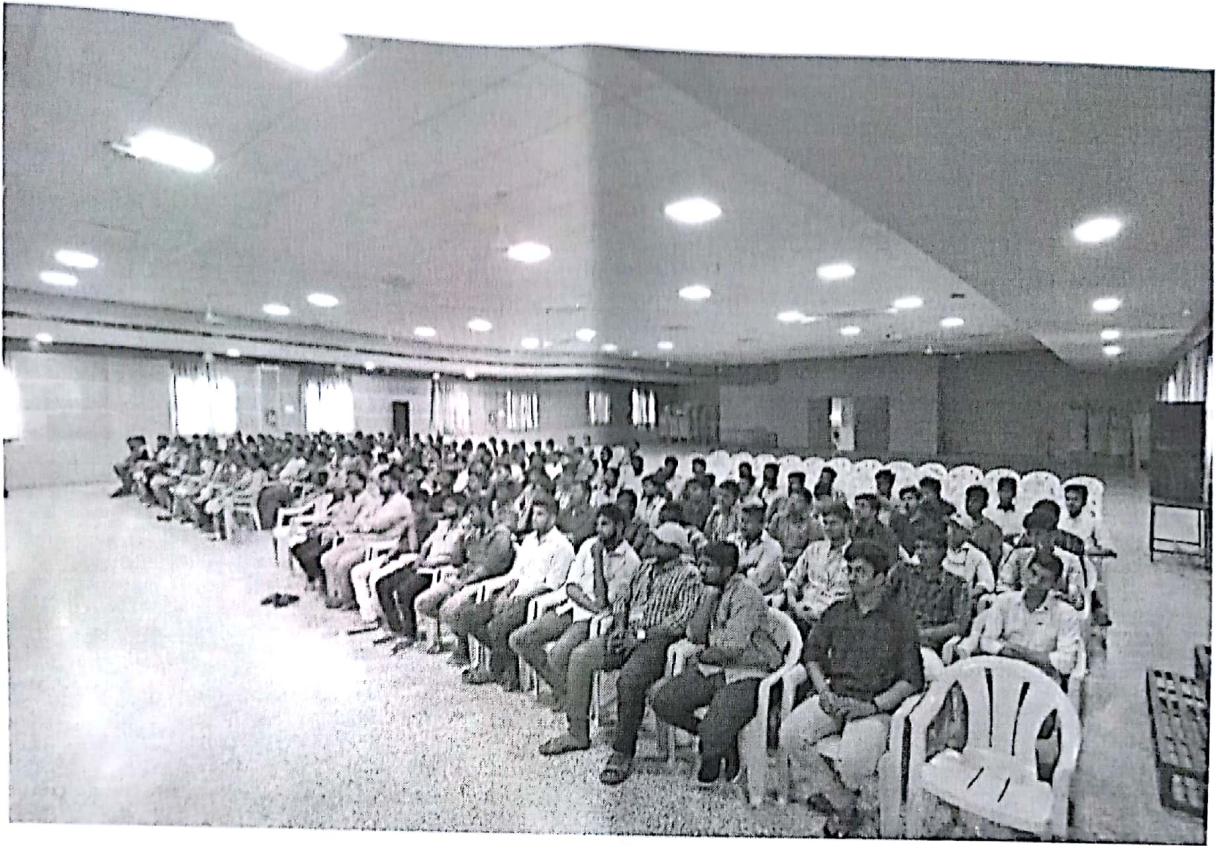
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Photos:







*G.N.S*  
Dr.G.N.Swamy,  
HOD, EIE Dept.

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# V. R. SIDDHARTHA ENGINEERING COLLEGE(Autonomous)

## A report on Guest lecture on “How to be successful”

By  
**Dr Reddy N Urimidi** Ph.D.,

A Guest Lecture by **Dr Reddy N Urimidi** management consultant professor, industry evangelist and Communication Servant.Organized by **I SOI Student Chapter** was delivered on 20th December 2019 for the students of B. Tech (EIE) VIII-sem.

He initiated his lecture session with overview of Need of success in life and career. His emphasis was more on motivation to become a successful personal in life. The session was made interactive by thought provoking questions posed by Dr Reddy N Urimidi to the student audience for example what is basic need for Success.

There are certain proactive measures you can take in your career that can help you streamline your journey toward success. Try these tips to become successful faster:

### **1. Set concrete goals.**

To become successful faster, you first need a road map for your career. After all, you can't take shortcuts if there's no end point in mind.

### **2. Establish a routine, and stick to it.**

Most successful people already know this: There's a big benefit to repetition. Routines keep you moving forward and help you to keep growing.

### **3. Find a mentor.**

Many highly successful people have this in common: They had a mentor. A mentor is someone who is on the same career path as you, but further along.

### **4. Streamline your routine.**

What if I told you that you could simplify your life and remove roadblocks that are keeping you from becoming successful by doing less? Positive routines can help you advance in your career faster.

### **5. Learn how to say no.**

Writer Herbert Bayard Swope mused, “I can't give you a surefire formula for success, but I can give you a formula for failure: Try to please everybody all the time.”

### **6. Be smart about money.**

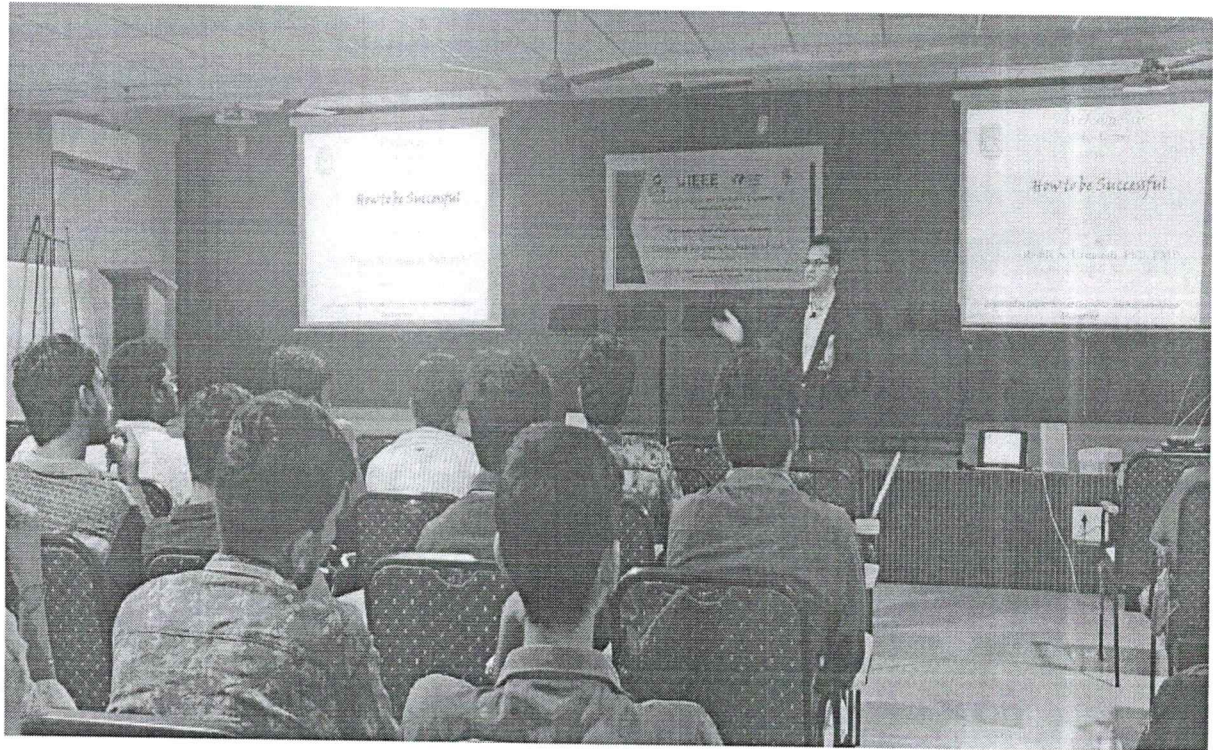
It's hard to get ahead when you're constantly playing catch-up or living paycheck to paycheck.



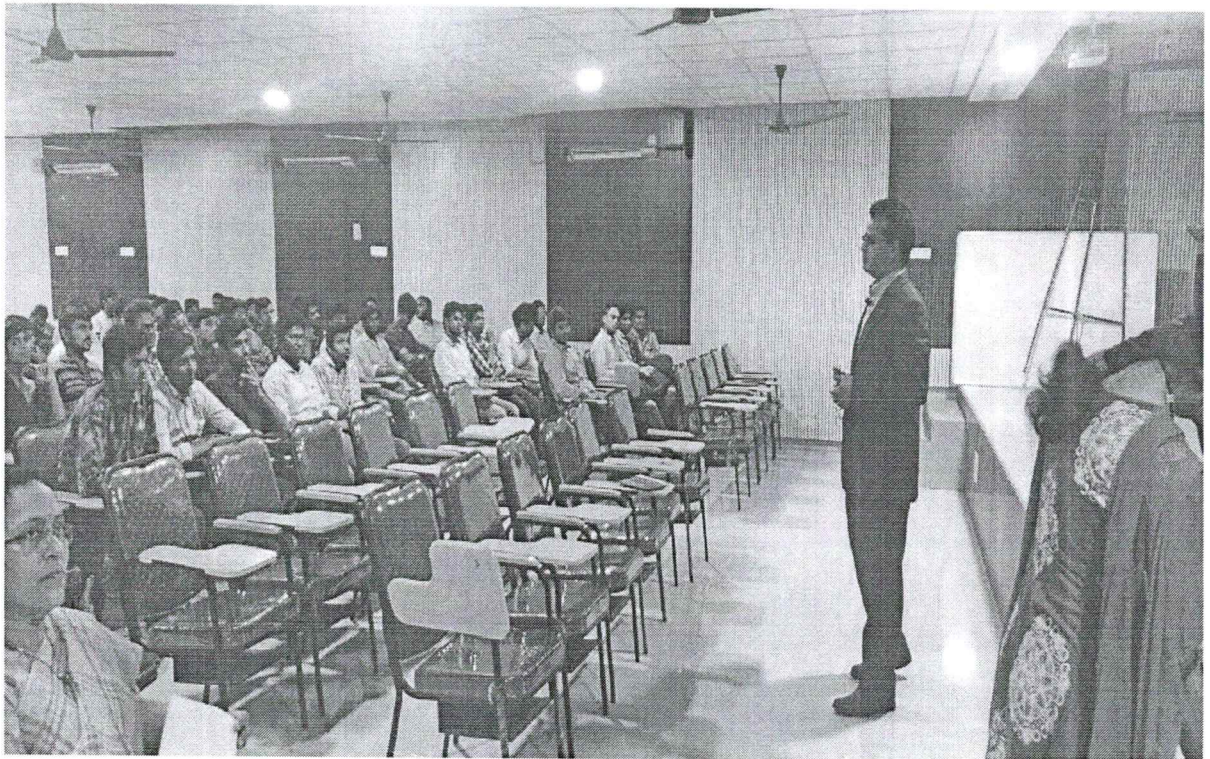
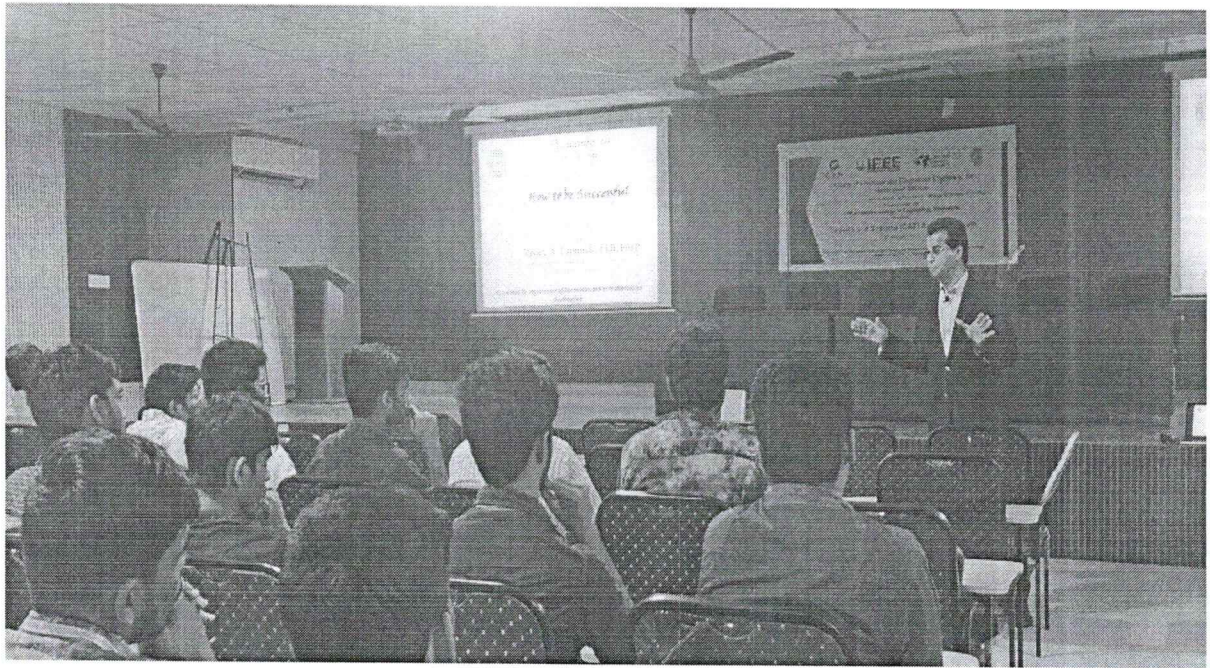
**7. Learn from your mistakes.**


As Truman Capote once wrote, "Failure is the condiment that gives success its flavor."


The lecture has proven to be very inspiring and informative for the students.







  
Organized  
Dr C S S Anupama

  
Dr G. N. Swamy  
HOD



**Report on Industry Institute Interaction Programme**

Dt:09-01-2020

**Title:** Industry 4.0

**Description of Industry Institute Interaction Programme:**

The Industry Institute Interaction Programme on "Industry 4.0" was organized by department of EIE on 09-01-2020.

**Objective:**

The Industry Institute Interaction Programme is intended to cover the role of instrumentation engineers in modern industries. To expose the extremely relevant and increasing importance of Industry 4.0 in manufacturing industries for a multitude of reasons by the resource person which are useful for employment in industries.

**Significance of Industry 4.0 in Industries:**

We're in the midst of a significant transformation regarding the way we produce products thanks to the digitization of manufacturing. This compelling transition is called Industry 4.0 – which is a representation of the fourth revolution that has occurred in manufacturing. Like the three industrial revolutions which preceded it – steam power, mass production/electricity, digital age – Industry 4.0 will transform local and global economies and create a new future for us all.

The evolution of industrial organizations towards Industry 4.0 poses a set of challenges to the management. The CPS (cyber-physical system) interconnection assumes the creation and massive exchange of real-time data originating from the factory floor, gradually flowing to the decision makers. Data management is thus one of the major challenges of Industry 4.0. The data collection implies the existence of a network infrastructure, and adequate data capture from the equipment (through its sensing). Taking into account the massive amount of data produced and exchanged, "Big Data" technologies are of fundamental importance. Nonetheless, generation, communication, and adequate replacement of organizational process data is only a necessary - but not sufficient - condition for value creation in Industry 4.0. In this sense, data should serve not only to create processes for decision-making autonomy throughout the value chain, gradually freeing employees and decision makers from the time-consuming tasks of decision-making that would require a great deal of time for analysis and consideration, but also for making predictions and optimal decisions accordingly, leading to resource savings and increased quality.

The instrumentation engineering professional has a significant role to play here in sensing the data and processing and communicating the same. There are excellent opportunities for employment in the oil, chemical, gas and related industries due to the growing shortage of instrumentation/electrical (E&I) technicians, technologists and engineers.



**Co-Ordinator:**

Mr.G.Jalalu, Asst.Prof., EIE Department

**Resource person:**

Mr.P.Jitendra Kumar, Managing Director, Entellus IoT Labs Pvt., Ltd., Hyderabad

**Participants:**

Participants are 2/4 and 3/4 B.Tech. students and faculty of EIE Dept.

**Outcome of the Guest Lecture:**The participants will be able to

- Understand the role of Instrumentation Engineer in Industry 4.0 related challenges.
- Know the various opportunities for employment in industries.

*G.N.S*  
(Dr.G.N.Swamy)

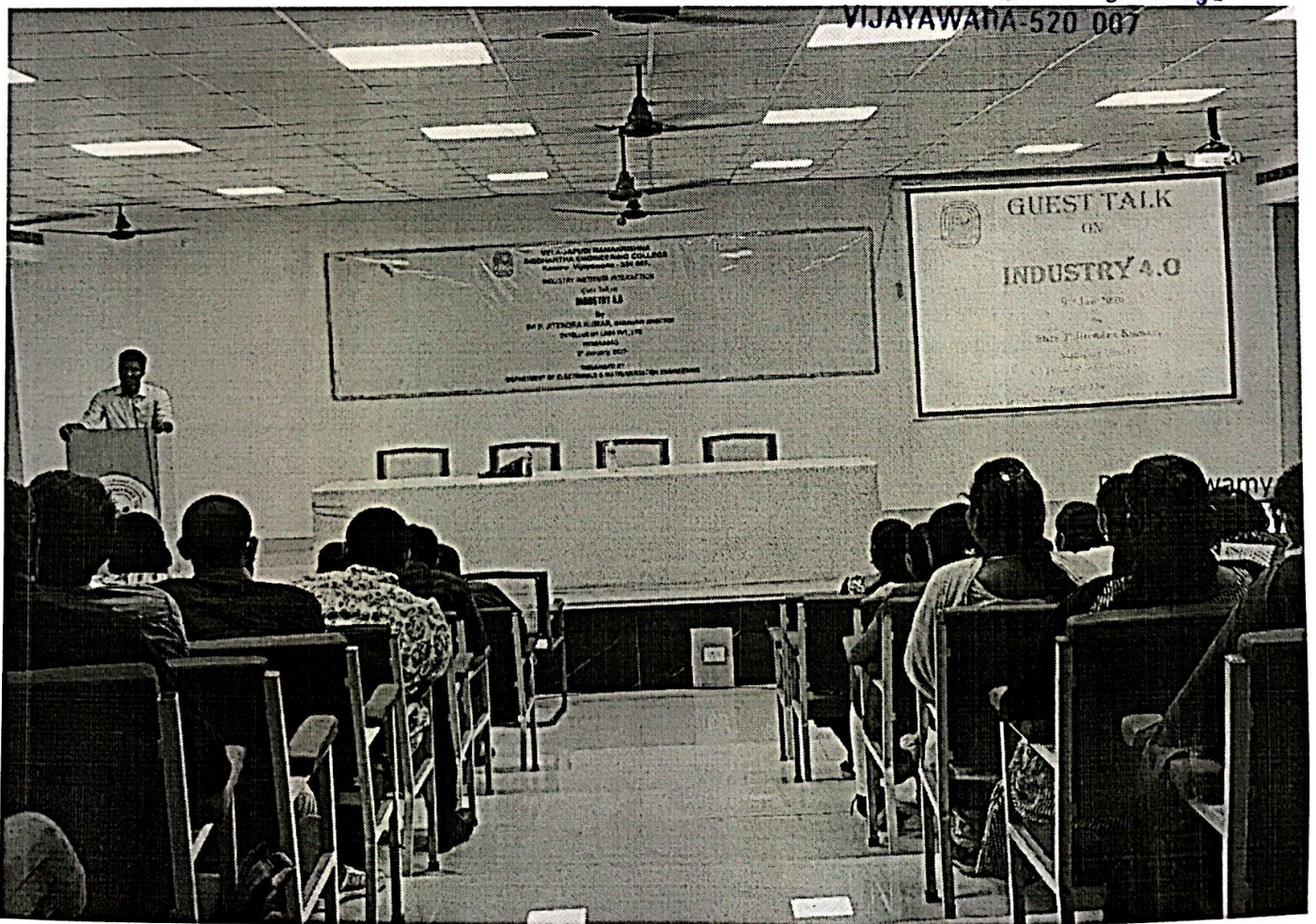
Professor & Head, EIE Dept.

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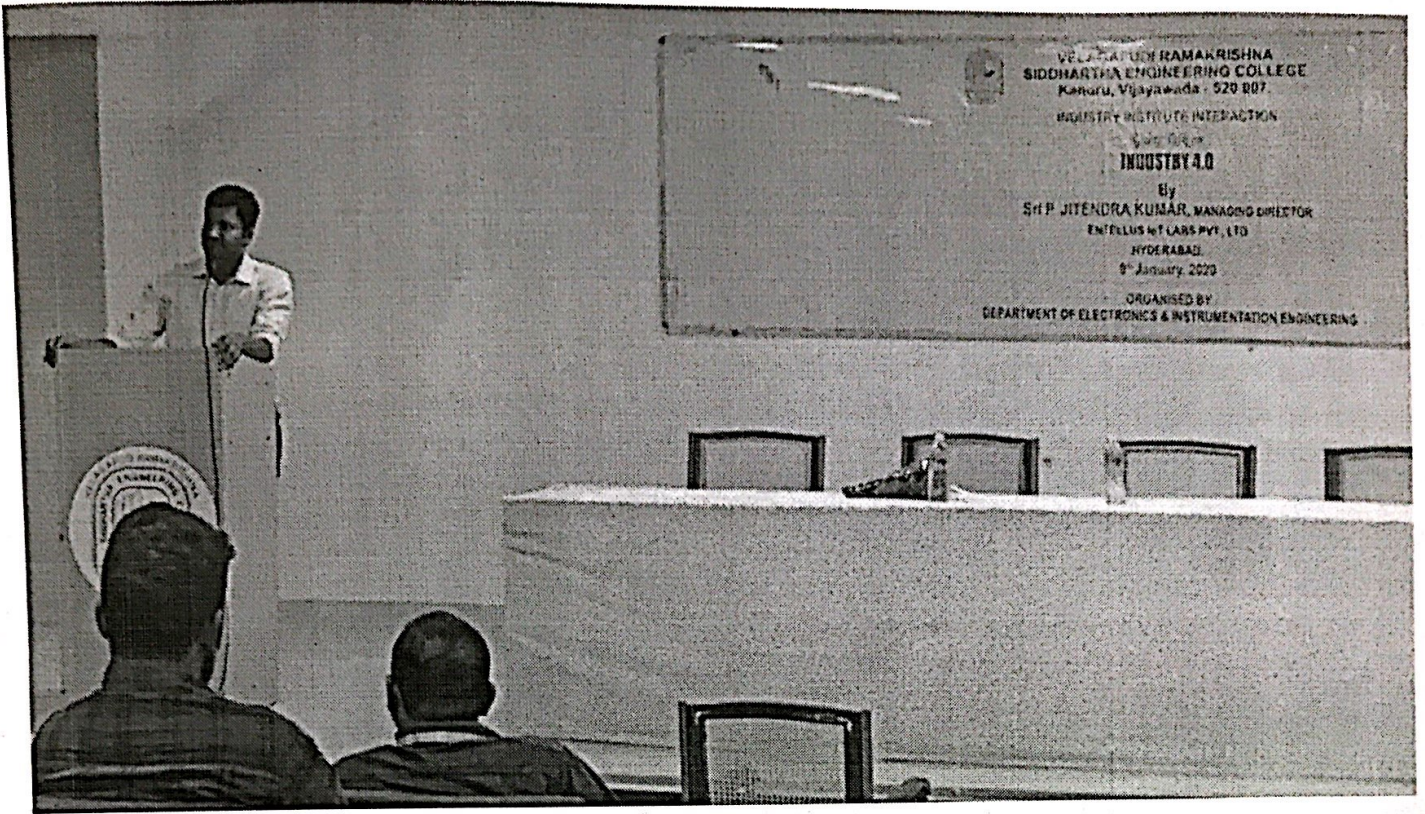
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*G.N.S.*  
(Dr.G.N.Swamy)  
Professor & Head, EIE Dept.

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## Technical report

Title: Webinar on “Is Nano Science the Future”  
 Date: 26-05-2020  
 Time: 9.30am-11.30am  
 Convener: Dr.G.N.Swamy, Prof.& HOD, EIE, VRSEC.  
 Coordinator: Sumalatha .Akunuri, Asst.Prof,EIE, VRSEC.

Department of Electronics and Instrumentation Engineering has organized a webinar on the topic “Is nano science the future” on 26<sup>th</sup> may 2020 in association with Mr.Murali.Duggina Graduate student of NSME, University of New Mexico, Albuquerque, NM, USA. The main objective of the webinar is to provide the students (2/4B.tech, EIE) an interactive session with Mr.Morali Duggina who is the winner of Engineering expo-V (2019) held at NSME,UNM. Around 50 students have participated and actively interacted in this session. The webinar has covered insights of Nano-science and Microsystems (Material Science). The major topics of this webinar are as follows:













- Bio Materials
- Micro electro mechanical systems (MEMS)
- Synthesis
- Physics and chemistry at nano scale
- Fabrication of NEMS
- Characterization tools

Zoom Meeting

SUMALATHA AKUNURI Murali Duggina Swamy Sumalatha Akunuri



### Carbon nanomaterials

▪ Morphology: 0D ,1D, 2D, 3D

0D	1D	2D	3D
 Carbon Dots	 Single Wall Carbon Nanotube	 Graphene	 Pillared Graphene
 Nanoparticles	 Multiwall Nanotube	 Multilayered 2D Compounds	 Nano-Organic Frameworks
 Quantum Dots	 Nanowires	 Nanoflakes	 Aerogels
Advantages			
Small in all dimensions Surfaces on all sides are accessible to electrolytes No bulk solid-state diffusion Can be integrated into multiple systems Can be used in stable inks for printing	Mechanical reliability Possibility to integrate with wearable devices Posses flexible freestanding films	Open 3D channels for ion transport; all surfaces is accessible enabling fast charge storage Compatible with flexible devices Small nanoflakes can be used in inks for printing	Can be used to create FRCC electronics with large areal and volumetric storage properties.
Limitations			
Agglomeration Do not densely and form only low density non-uniform structures Numerous points of contact lead to high resistance Poor chemical stability	Low packing density; cannot exhibit high volumetric performance Low yield and high cost of synthesis Diffusion pathways can be relatively long	Few stacking Low out-of-plane electronic and ionic conductivity High cost of synthesis	Design Stability Manufacturing




<https://science.sciencemag.org/content/366/6468/eaan8285/tab-figures-data>

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Zoom Meeting 40-Minutes You are viewing Murali Duggina's screen View Options

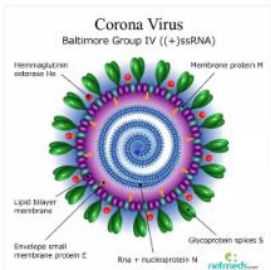




Sumalatha Akunuri ➔

## Science behind washing hands

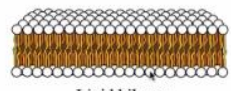
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- Phospholipids
- Hydrophobic head
- Hydrophilic tail

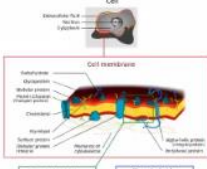


**Corona Virus**  
Baltimore Group IV ((+)ssRNA)

<https://www.netmeds.com/health-library/post/coronavirus-causes-symptoms-and-treatment>



**Lipid bilayer**



**Cell membrane**

D.A. McQuarrie and J.D. Simon, Physical Chemistry

Mute Stop Video

Participants 28 Chat Share Screen Record Reactions

Leave



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SIDDHARTHA ENGINEERING COLLEGE**  
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Approved by AICTE, New Delhi  
Affiliated to JNTUK, Kakinada  
ISO 9001:2015 Certified

**DEPARTMENT OF ELECTRONICS AND INSTRUMENTATION ENGINEERING**

Organizes **WEBINAR** On

# Is Nano Science the Future?

**Date : 26-05-2020**

**Time: 9.30 to 10.30AM**

Join Zoom Meeting  
<https://us04web.zoom.us/j/75177062980?pwd=bFVasGRXalp1SkRUC8rK0ls5kVQUtO9>

Meeting ID: 751 7706 2980  
Password: 9032353926



**Mr. MURALI DUGGINA**  
NSME, University of New Mexico-Engineering Expo V winner (2019).

Convener  
**Dr. G N SWAMY**  
PROF & HOD, EIE

Coordinator  
**A. SUMALATHA**  
Asst. Prof, EIE

Prepared by

*Sumalatha A*

(SUMALATHA AKUNURI)

Asst.Prof.EIE, VRSEC.