



Birla Vishvakarma Mahavidyalaya (BVM)

(An Autonomous Institute)

Department of Production Engineering

Industrial Visit Report

Siemens Centre of Excellence for Industry Automation,
The Maharaja Sayajirao Gaikwad University, Vadodara

Duration

September 1, 2018
(1 Day)

Class

2nd & 4th Level

Faculty Coordinators

Prof. K. D. Bhatt

&

Prof. D. A. Gajjar

AY: 2018-19

Visit to Siemens Centre of Excellence for Industry Automation

About Visit

A visit was organized on the September 1, 2018 for final year and second year students to give practical exposure towards the digitization and use of computer technology in today's industries. The students had visited Automation, Mechatronics, Process Instrumentation, Electrical, Rapid Prototyping, Computer Integrated Manufacturing Simulation, Advanced Manufacturing, CNC Programming and Design Validation Laboratories.

About Siemens Centre of Excellence

With this perception Government of Gujarat under its Public Private Policy (PPP) mode has entered into MOU to establish Five Centre of excellence in important fields of Automobile, Industrial Automation, Industrial Machinery, Aerospace Engineering & Marine Engineering and Ship Building at various places in Gandhinagar, Ahmedabad, Surat & Baroda. Under this CoE with total project cost of **Rs. 102.00 Crores** including cost of **36** globally acceptable software and its training.

SIEMENS CENTRE OF EXCELLENCE ON INDUSTRIAL AUTOMATION at Mechanical Engineering Department, Faculty of Technology & Engineering, The Maharaja Sayajirao University of Baroda has been established in a renovated infrastructure in the premises of historic premises of KALABHAVAN WORKSHOP, for which GoG has provided **Rs. 2.90 crores** to create infrastructure to house the laboratories such as –

1. Automation laboratory
2. Mechatronics laboratory
3. Process Instrumentation laboratory
4. Electrical Laboratory
5. Rapid prototyping laboratory
6. Computer Integrated Manufacturing (CIM) Simulation Laboratory
7. Advanced Manufacturing laboratory
8. CNC Programming laboratory
9. Design Validation laboratory

With total of almost over 9000 sq. ft. of space housing globally acceptable training modules. Students of MSU and other institutions will be enrolled to undertake various modules of programme and will be evaluated by SIEMENS/ DESIGN TECH. and on successful completion will be provided with certification which will enable to make them acceptable globally for employment, in those modules. As such almost over 80 modules are possible depending upon the need and level of training needed in the field of automation.

Location : Faculty of Engineering & Technology,
M. S. University, Baroda

Duration : 1 Day (01/08/2018)

Timing : 11:00 a.m. to 2:30 p.m.

Total Students : 35

Faculty Coordinator : Prof. K. D. Bhatt
Prof. D. A. Gajjar

Contact Person : Mr. Akash Pandey

Glimpse of the Visit:



Fig. Students & faculty coordinators @ CoE, MSU, Vadodara



Fig. Lab coordinators explaining fundamentals of respective labs



Birla Vishvakarma Mahavidyalaya (BVM)

Engineering College

(An Autonomous Institution)

Production Engineering Department

Final Year (7th Semester)

Industrial Visit Report

Faculty Coordinators

Prof. Hardik Beravala

Prof. G V Patel

Prof. D A Gajjar

Academic Year 2018-19

Production Engineering Department

Bhanubhai Memorial Centre of Excellence (Elecon), V. U. Nagar

About Visit

The technical visit to Bhanubhai Memorial Centre of Excellence (Elecon), Vitthal Udyognagar was organized on September 07, 2018 at 08:30 am for final year students as a part of subject area of Flexible Manufacturing Systems. All the students were divided into 2 groups and escorted to the respective units by the Industrial persons. Students visited several areas of advanced workshop in the visit.

About Elecon

Elecon Engineering Company Ltd. was established in the year 1951 as the Pioneers in the manufacturing of Industrial Geared motors and Reducers, Material Handling Equipment, Mining equipment, casting processes etc. Elecon is one of the largest manufacturers of Material Handling Equipments and Industrial Gears in Asia.

Elecon's recent acquisition of Benzlers - Radicon Group belonging to the David Brown Gear Systems adds to the expertise in the manufacturing of custom-made Gearboxes for Steel Mills, High Speed Turbines and Satellites for ISRO and also for the Naval Aircraft carries and many growth sector industries successfully.

Date : September, 07, 2018

Pick up point : BVM Engineering College, V. V. Nagar

Place of Company : Elecon (BMCE), V. V. Nagar

Duration : 08:30 am to 10:30 am

Total Students : 43

Faculty Coordinator : Prof. Hardik Beravala
Prof. G V Patel
Prof. D A Gajjar

Glimpse of the visit:



Fig. Final Year Students with Faculty coordinators



Report Prepared by

**Prof. G V Patel
Assistant Professor**

Production Engineering Department

Birla Vishvakarma Mahavidyalaya (BVM)
(An Autonomous Institution)

*****_***_*****



Birla Vishvakarma Mahavidyalaya (BVM)

(An Autonomous Institute)

Department of Production Engineering

Industrial Visit Report

Vidya Wires Pvt. Ltd., V. U. Nagar

Date of Visit

September 22, 2018

Class

3rd Level

Faculty Coordinators

Prof. H. S. Beravala

&

Prof. G. V. Patel

AY: 2018-19

Visit to Vidya Wires Pvt. Ltd., V. U. Nagar

About Visit

A visit was organized on the September 22, 2018 for third year students to give practical exposure in the subject of Bulk Deformation & Sheet-metal working Processes (PE305). The students had visited different department of Vidya wires including incremental wire-drawing process, enamel-coating, quality control, packaging etc.

About Vidya Wires Pvt. Ltd.

Vidya Wires Pvt. Ltd. promoted by RATHI FAMILY in 1982 is producer of INSULATED COPPER CONDUCTORS like Enameled Copper Winding Wire/Magnet Wires, Paper/Nomex/Mica/Fibre glass covered Rectangular & Round Conductors confirming to various IS & IEC standards. The company is an ISO 9001-2008 certified company by International Standards Certification Ply. Ltd. accredited by the joint accreditation system of Australia & New Zealand and is amongst the very few manufacturers of these products having this quality management system certification. Company mainly supplies to manufacturing Electric Transformers (Power & Distribution), Electric Motors, Telecommunication Equipments, Electronics & Electrical appliances, and wind mill alternators etc. situated all over the country. Strict believers in manufacturing high quality product, which is duly ensured through the various quality control tests being carried out from the raw materials to finished goods stage., tested at company's own testing laboratory equipped with all the required testing instruments.

Location	: V. U. Nagar
Duration	: 1 Day (22/09/2018)
Timing	: 02:00 p.m. to 04:00 p.m.
Total Students	: 38
Faculty Coordinator	: Prof. H. S. Beravala Prof. G. V. Patel
Contact Person	: Mr. Hardik Patel

Glimpse of the Visit:



Fig. Company representative explaining fundamentals of wire drawing process and safety precautions to the students



Fig. Students & Faculty coordinators @ Vidya Wires



Report Prepared by

Prof. G V Patel

Assistant Professor

Production Engineering Department

Birla Vishvakarma Mahavidyalaya (BVM)

(An Autonomous Institution)

*****_***_*****



Birla Vishvakarma Mahavidyalaya (BVM)

(An Autonomous Institute)

Department of Production Engineering

Industrial Visit Report

Amul Dairy, Anand

Date of Visit

February 16, 2019

Class

3rd Level (CE, CP, EC, ET, IT)

Faculty Coordinator

Prof. G. V. Patel

AY: 2018-19

Visit to Amul Dairy, Anand

About Visit

A visit was organized on February 16, 2019 for third year students to give practical exposure of an open elective subject Principles of Supply Chain Management (PE372). The students had visited different department of Amul dairy like milk collection & storage, pasteurisation centre, different production lines containing manufacturing, packaging, boxing, storage for butter and milk powder.

About Amul

Anand Milk Union Limited or Amul is an Indian dairy company, based at Anand in the state of Gujarat. The white revolution was spearheaded by Tribhuvandas Patel under the guidance of Sardar Patel. As a result, Kaira District Milk Union Limited was born in 1946. Tribhuvandas became the founding chairman of the organization and led it until his death. He hired Dr. Verghese Kurien three years after the white revolution. Kurien, founder-chairman of the GCMMF for more than 30 years (1973–2006), is credited with the success of Amul's marketing.

Currently, Amul has become the largest food brand in India managed by a cooperative body, the Gujarat Co-operative Milk Marketing Federation Ltd. (GCMMF), which today is jointly owned by 3.6 million milk producers in Gujarat. Amul spurred India's White Revolution, which made the country the world's largest producer of milk and milk products. Amul also has ventured into markets overseas.

Location	: Anand
Duration	: 1 Day (16/02/2019)
Timing	: 02:00 p.m. to 04:00 p.m.
Total Students	: 32
Faculty Coordinator	: Prof. G. V. Patel
Contact Person	: Mr. S S Sundaran

Glimpse of the Visit:



Fig. Students & Faculty coordinator @ Amul Dairy



Report Prepared by

Prof. G V Patel

Assistant Professor

Production Engineering Department

Birla Vishvakarma Mahavidyalaya (BVM)

(An Autonomous Institution)

*****_***_*****



Birla Vishvakarma Mahavidyalaya (BVM)
(An Autonomous Institute)

Department of Production Engineering

Industrial Visit Report

Hi-Mak Pvt. Ltd., V. U. Nagar

Date of Visit

March 30, 2019

Class

3rd Level

Faculty Coordinators

Prof. K. D. Bhatt

&

Prof. G. V. Patel

AY: 2018-19

Visit to Hi-Mak Pvt. Ltd., Vadodara

About Visit

A visit was organized on March 30, 2019 for third year students to give practical exposure in the subject of Mechatronics (PE353). The students had visited training centre of Hi-Mak and fabrication & assembly unit including incremental assembly of customized PLC panels, testing, quality control, packaging etc.

About Hi-Mak Pvt. Ltd.

Hi-Mak Pvt. Ltd., formerly known as Hi-Mak Process Controls specializes business of automation solution as an authorized system house of Siemens since 1994. Hi-Mak is serving as a leading System-House providing reliable and optimized Automation solutions for various industries.

Hi-Mak is exclusively representing Siemens, effecting sales & marketing, detailed engineering, system designing, software development, supply of hardware & panels, erection, commissioning and service support. In field of automation system integration, Hi-Mak have earned a reputation for total commitment to quality and excellence best regards, which is reflected by more than 1500+ installations and over 250+ satisfied customers.

Location	: Vadodara
Duration	: 1 Day (30/03/2019)
Timing	: 09:30 a.m. to 06:30 p.m.
Total Students	: 30
Faculty Coordinator	: Prof. K. D. Bhatt Prof. G. V. Patel
Contact Person	: Ms. Himali Vyas, CMD, Hi-Mak Pvt. Ltd. Vadodara

Glimpse of the Visit:

Session – 1:

Location : Training Center, Fatehgunj, Vadodara

Timing : 09:30 a.m. to 11:00 p.m.

Conducted by : Mr. Kiran Badwaik



Fig. Mr. Kiran Badwaik explaining fundamentals of mechatronics to the students

Session – 2:

Location : GIDC, Makarpura, Vadodara

Timing : 11:30 a.m. to 01:30 p.m.

Conducted by : Mr. Kiran & Production Team, Hi-Mak



Fig. Students & Faculty coordinators @ Hi-Mak Production Facility,
Makarpura GIDC, Vadodara

Session – 3:

Location : Training Center, Fatehgunj, Vadodara

Timing : 03:00 p.m. to 04:30 p.m.

Conducted by : Mr. Kiran Badwaik

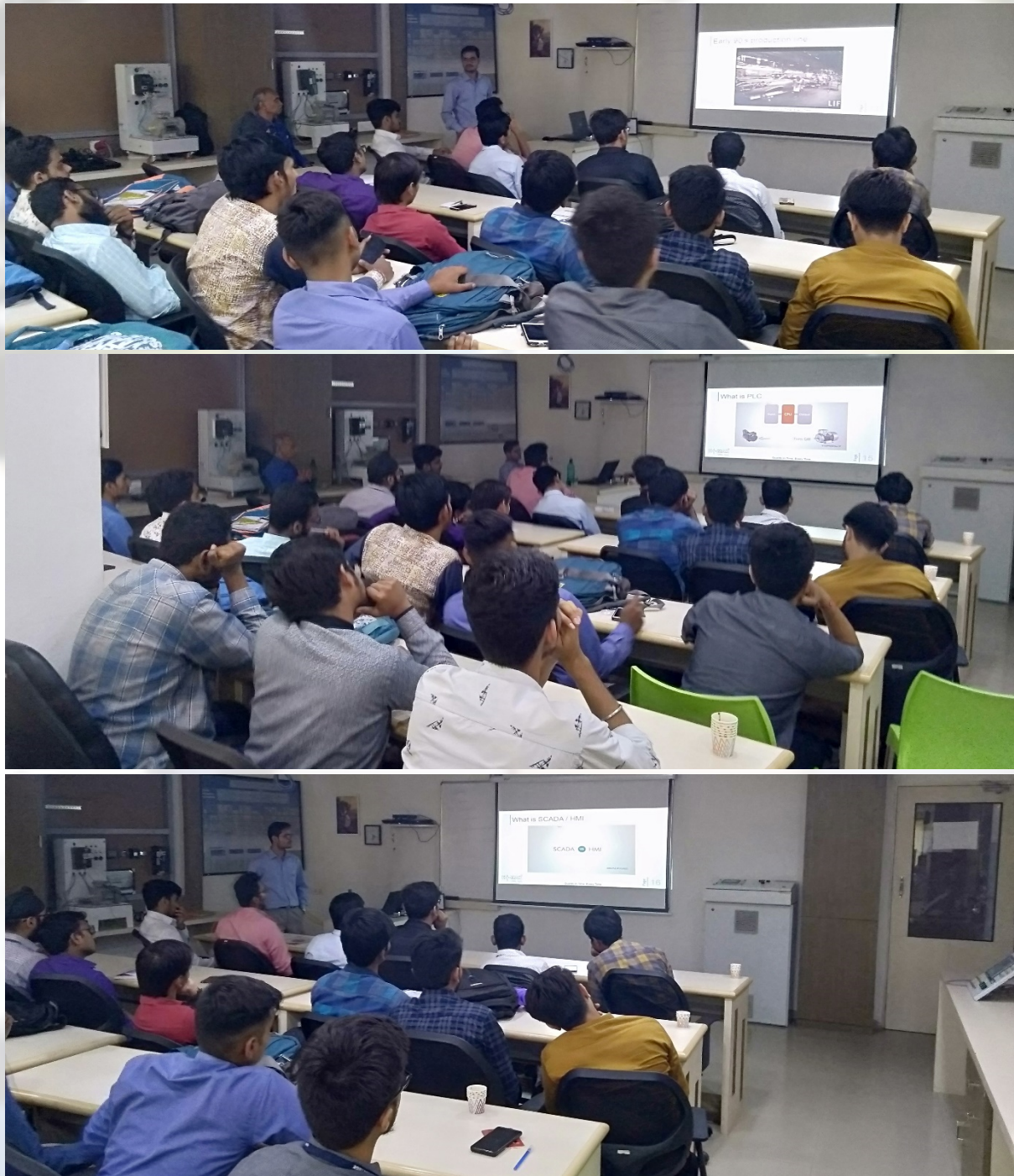


Fig. Mr. Kiran Badwaik explaining fundamentals of Industrial Automation (includes PLC & SCADA/HMI) to the students

Session – 4:

Location : Training Center, Fatehgunj, Vadodara

Timing : 04:30 p.m. to 06:00 p.m.

Conducted by : Mr. Rohan Anerao

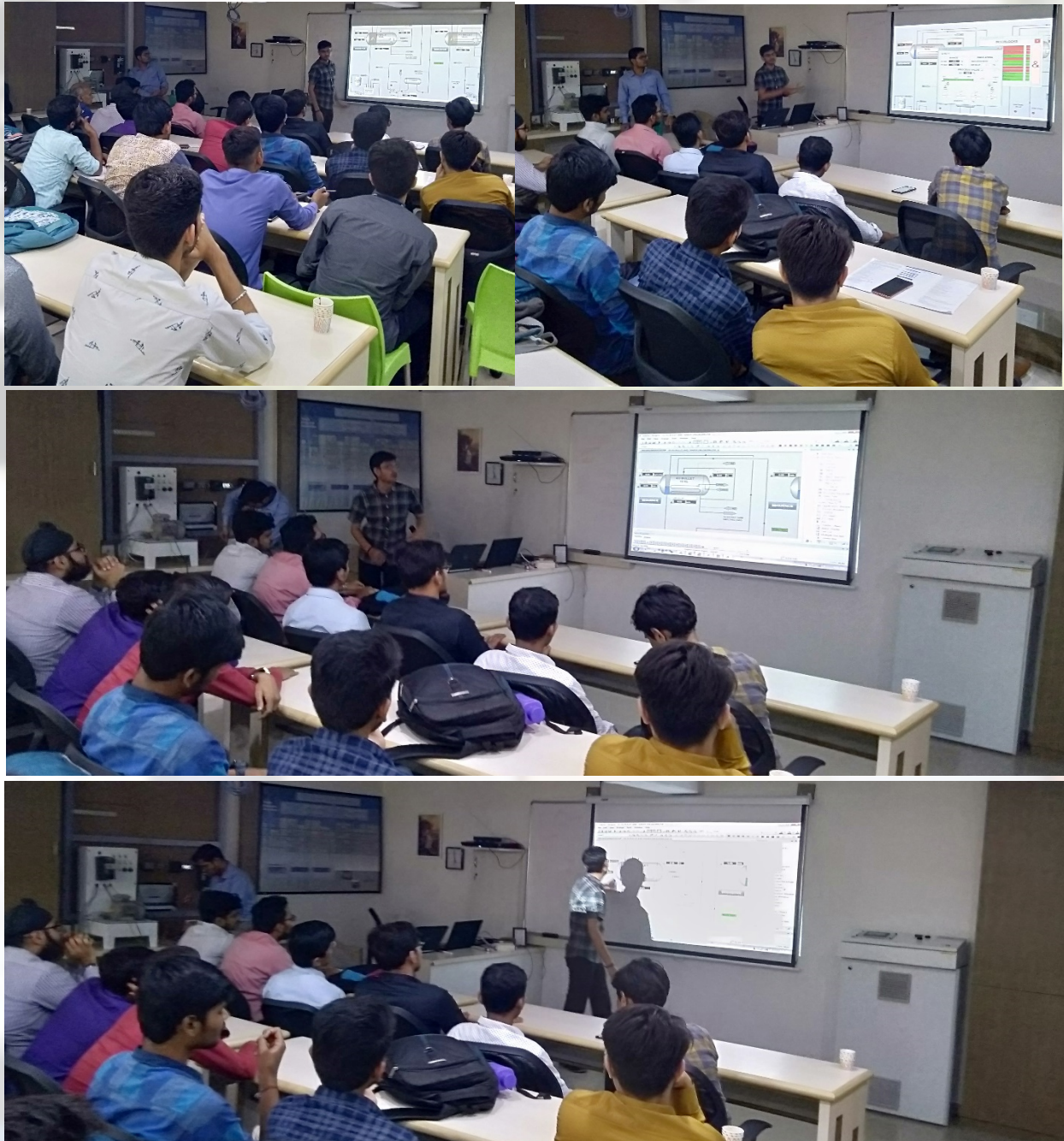


Fig. Mr. Rohan Anerao explaining TIA software for Industrial Automation to the students

Session – 5:

Location : Training Center, Fatehgunj, Vadodara

Timing : 06:00 p.m. to 06:30 p.m.

Conducted by : Ms. Himali Vyas



Fig. Ms. Himali Vyas, CMD, Hi-Mak explaining significance of Industrial Automation in future to the students



Report Prepared by

Prof. G V Patel

Assistant Professor

Production Engineering Department

Birla Vishvakarma Mahavidyalaya (BVM)

(An Autonomous Institution)

***** _ _ _ _ _ *** _ _ _ _ _ *****

Report of Visit to Engimach-2017, Gandhinagar

About Visit

A visit to the technical exhibition – Engimach-2017 was organized by department of Production engineering on 10th December 2017 held at The Exhibition Center, Gandhinagar. A delegation of 4 faculty-members lead by Dr. A. M. Trivedi, head of Production engineering department visited several sections of exhibition covering numerous stalls of international & national manufacturing unit that manufacture/sell wide variety of industrial/domestic products.

About Engimach-2017

Innovation is the key for any business to survive, grow and sustain. ENGIMACH-2017 was dedicated to technology and innovations. It was witness the never seen before products, processes, technology, emerging innovations, active participation of automobile companies, knowledge sharing and exchange with world leaders, investment opportunities and business tie-ups. ENGIMACH has witness participation from over 1000 companies and with reliable participations from more than 25 countries like USA, Germany, Spain, Turkey, Korea, Japan, Taiwan, China and many more. The 13th ENGIMACH has surpass its past record of 1,20,000 visitors in 12th ENGIMACH.

Engimach-2017 was held from 6th to 10th December 2017 at The Exhibition Center, Gandhinagar, Gujarat, India spread over an area of more than 1,00,000 sq. meter. Being the most reputed and trusted technology show in India, with recent edition of ENGIMACH, all set for setting higher benchmarks. ENGIMACH 2017 has continued the legacy of success by incorporating more and more international participation.

Date : December 10, 2017

Pick up point : BVM Engineering College, V. V. Nagar

Place of Visit : The Exhibition Center, Gandhinagar

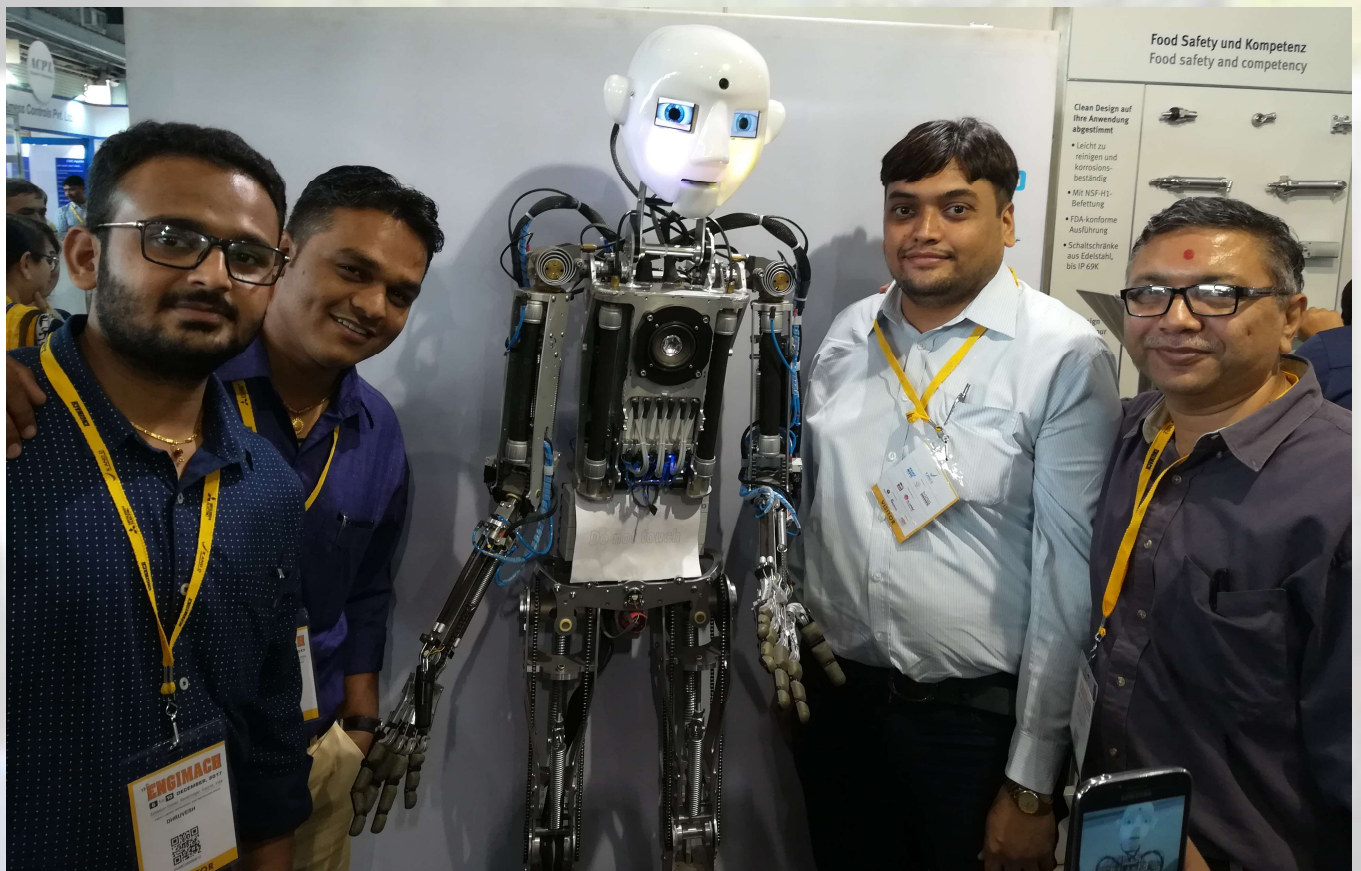
Duration : 8:30 am to 8:30 pm

Total Faculties : 04

Faculty Coordinator : Dr. A. M. Trivedi

Glimpse of the visit:





Production Engineering Department





Production Engineering Department

Industrial Visit to Fine Cast (Gujarat)

About Visit

The technical visit to Fine Cast, Vitthal Udyognagar was organized on February 03, 2018 from 12:30 pm to 01:30 pm for 33 students of third level by Prof. R S Barot. All the students were divided into 2 groups and escorted to the respective labs by the Industrial persons. Students visited several areas like Moulding shop, foundry shop, Fettling shop, metallurgy lab and workshop in the visit.

About Fine Cast

Fine Cast is established in the year 1973 at Anand (Gujarat, India), mainly engaged in manufacturing and supplying an extensive range of Pulley Casting, Nail Making Machine Component Casting, Gear Box Casting, Tractor Part Casting, Blower Casting, Crankcase Casting, Wheel Casting, Sheave Casting and Compressor Casting. These products are widely urged and appreciated all across the market for attributes like robust construction, high strength, corrosion resistance & durability.

Date : February 03, 2018

Place of Company : Fine Cast (Gujarat) Pvt. Ltd., V. U. Nagar

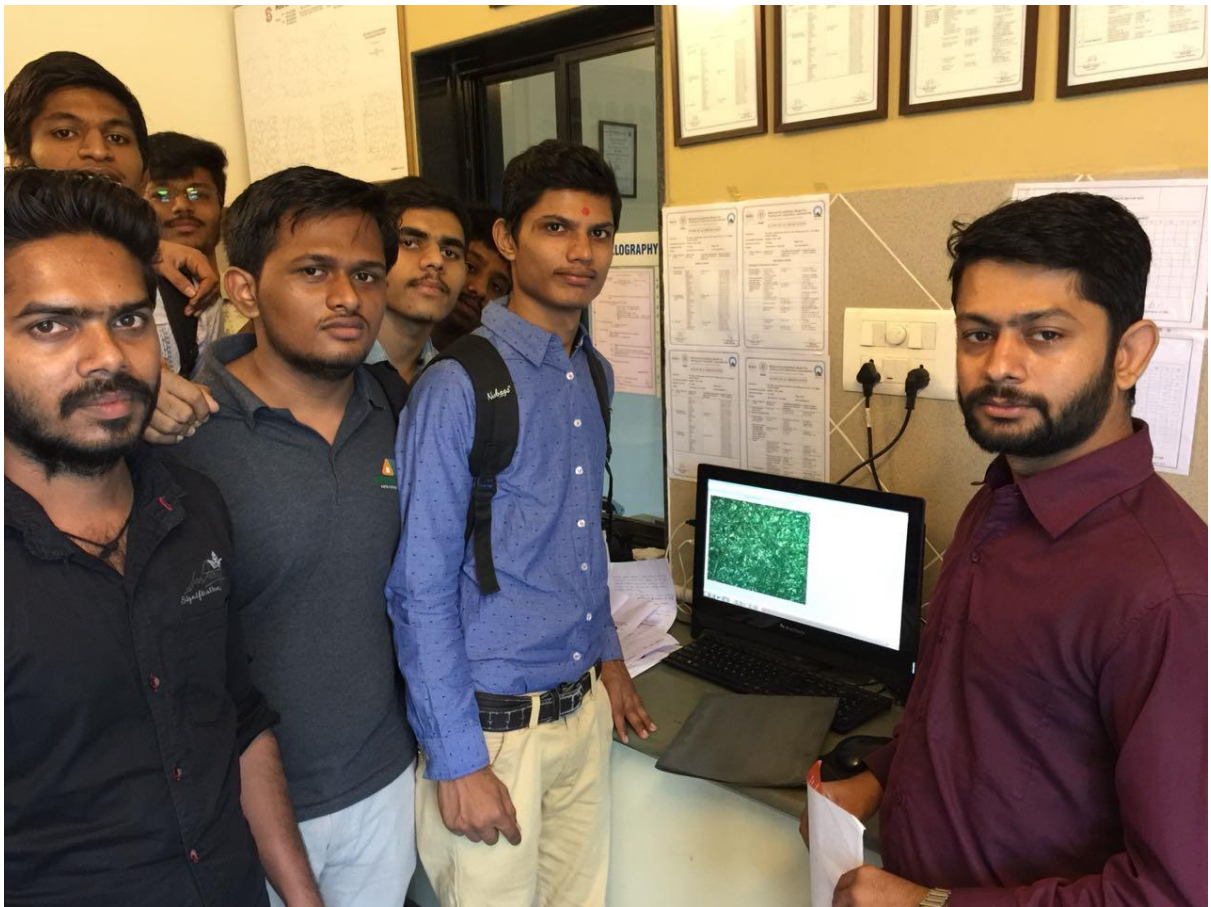
Duration : 1 Day

Total Students : 33

Faculty Members : Prof. R S Barot
Prof. J. R. Makwana

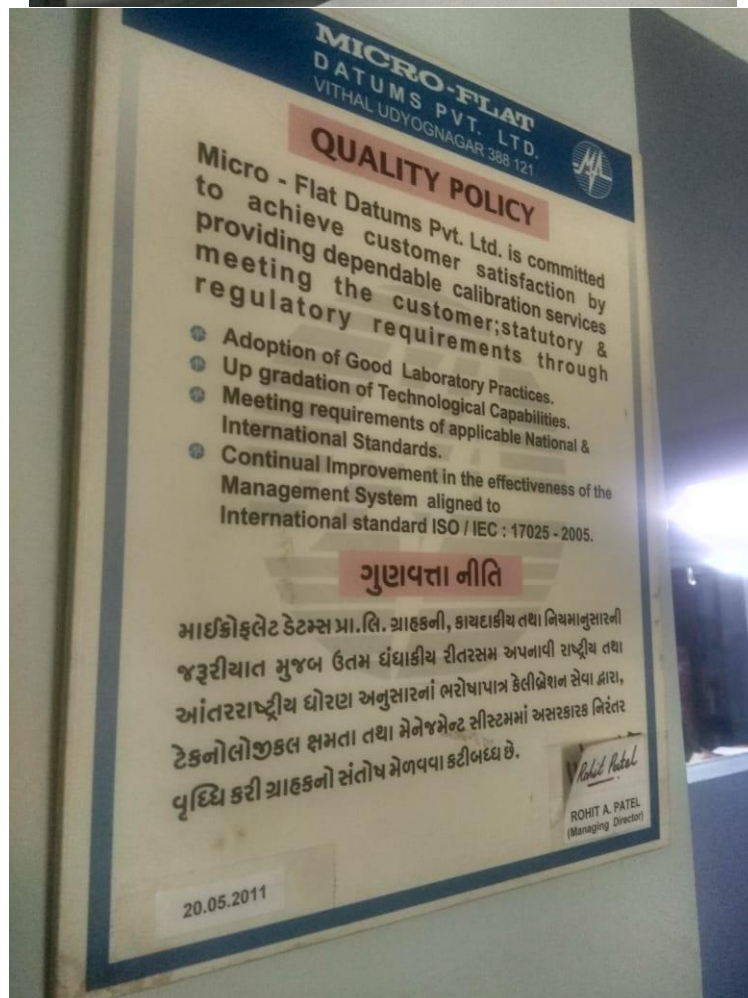
Glimpse of the visit







2018-9-15 12:51







Birla Vishvakarma Mahavidyalaya (BVM)

Engineering College

(An Autonomous Institution)

Production Engineering Department

Final Year (7th Semester)

Industrial Visit Report

Faculty Coordinator

Dr. A M Trivedi

Prof. J R Makwana

Prof. D A Gajjar

Academic Year 2017-18

Production Engineering Department

Prepared by: G V Patel

Report of Industrial Visit for the AY: 2017-18

Sr. No.	Company Name	Date	Duration	Resource Person	No. of Students
1	Bhanubhai Memorial Centre of Excellence (BMCE) (ELECON), V. U. Nagar	07/10/2017	10:30 am to 12:30 pm	MR. J.K UPADHYAY	43
2.	MHE DIVISION (ELECON), V. U. Nagar	07/10/2017	12:30 pm to 2:30 pm	Mr. P I PATEL	43

1) Bhanubhai Memorial Centre of Excellence (Elecon), V. U. Nagar

About Visit

The technical visit to Bhanubhai Memorial Centre of Excellence (Elecon), Vitthal Udyognagar was organized on OCTOBER 07, 2017 at 10:30 am for final year students as a part of subject area of Flexible Manufacturing Systems, Computer Aided Manufacturing & Productivity Improvements Methods. All the students were divided into 2 groups and escorted to the respective units by the Industrial persons. Students are families with more advanced techniques they used like Jidoka, Kanban, kaizen, Lean manufacturing tool & 5S implementation for the manufacturing the products. Students visited several areas of advanced workshop in the visit.

About Elecon

Elecon Engineering Company Ltd. was established in the year 1951 as the Pioneers in the manufacturing of Industrial Geared motors and Reducers, Material Handling Equipment, Mining equipment, casting processes etc. Elecon is one of the largest manufacturers of Material Handling Equipments and Industrial Gears in Asia.

Elecon's recent acquisition of Benzlers - Radicon Group belonging to the David Brown Gear Systems adds to the expertise in the manufacturing of custom made Gearboxes for Steel Mills, High Speed Turbines and Satellites for ISRO and also for the Naval Aircraft carries and many growth sector industries successfully.

Date : October, 07, 2017

Pick up point : BVM Engineering College, V. V. Nagar

Place of Company : Elecon (BMCE), V. V. Nagar

Duration : 10:30 am to 12:30 pm

Total Students : 43

Faculty Coordinator :
1. Dr. A M Trivedi
2. Prof. J R Makwana
3. Prof. D A Gajjar

Glimpse of the visit:



Final Year Students, Faculty & BVM Workshop Staff Member

Production Engineering Department

Prepared by: G V Patel

2) MHE DIVISION (ELECON), V. U. Nagar

About Visit:

Industrial Visit at MHE DIVISION, for the students of final year was organized on October 07, 2017 as a part of subjects like flexible manufacturing systems. The visit started at 12:30 pm where all the students were divided into 2 groups and escorted to the processing units by the experts. Students visited many units like Fabrication shop, Different Welding Machines, Manual Guided Vehicles (MGV), Different Cranes, Automated Storage and Retrieval System (AS/RS) for material handling, different CNC machine, hydraulic & pneumatic equipments training, etc.

Glimpse of the visit:

Date	:	October 07, 2017
Pick up point	:	BVM Engineering College, V. V. Nagar
Place of Company	:	Vitthal Udyognagar
Duration	:	12:30 pm to 2:30 pm
Total Students	:	43
Faculty Coordinator	:	1. Dr. A M Trivedi 2. Prof. J R Makwana 3. Prof. D A Gajjar



Report Prepared by

**Prof. Jatin R Mawkana
Assistant Professor**

Production Engineering Department

Birla Vishvakarma Mahavidyalaya (BVM)
(An Autonomous Institution)

*****_***_*****



BIRLA VISHWAKARMA MAHAVIDHYALAYA

A report on INDUSTRIAL VISIT

To

Ingersoll Rand Ltd. & Indo German Tool Room

A report based on an industrial visit organized by Production Department for 3 level and 2 level students at INGERSOLL RAND LTD and INDO GERMAN TOOL ROOM, Ahmedabad on 8th October 2018.

Department of Production Engineering

Birla VishvakarmaMahavidyalaya

(Engineering College)

VallabhVidyanagar

- Date: 08/10/2018
- Venue & Place of Company: **INGERSOLL RAND Ltd AHMEDABAD & INDOGERMANTOOL ROOM**
- Duration: **1 Day**
- Faculty Members: **Prof. R.S.BAROT & Prof. AKHIL JARIYA**

Company overview

In 1871, **Simon Ingersoll** (1818–1894) founded Ingersoll Rock Drill Company in New York, and in 1888 it combined with Sergeant Drill to form Ingersoll Sergeant Drill Company. Also in 1871, brothers Addison Rand (1841–1900) and Jasper Rand, Jr. (1837–1909) established Rand Drill Company with its main manufacturing plant in **Tarrytown, New York**. Rand drills cleared New York's treacherous **Hell Gate** channel and were used in the construction of water aqueducts for New York City and Washington, D.C., and tunnels in **Haverstraw** and **West Point, New York**, and in **Weehawken, New Jersey**. In 1905 Ingersoll-Sergeant Drill Company merged with the Rand Drill Company to form Ingersoll Rand. Ingersoll Rand has grown largely by acquisition since that time.

Ingersoll-Rand (India) Limited is primarily engaged in the business of manufacturing and sale of industrial air compressors of various capacities and related services, and its complete machines and spare parts. The Company operates through Air solutions segment. The Air Solutions segment includes reciprocating compressors, centrifugal compressors and system components. The Company sells its products primarily to industries in the automotive, metals, pharmaceutical and textile sectors. The Company's brands include Club Car, Ingersoll Rand, Thermo King, ARO and Trane. The Company sells air compressors primarily in India and also exports the products to North American, South American, Asian and European countries. The Company serves its customers in global commercial, industrial and residential markets. The Company has its manufacturing plant located in Naroda, Gujarat.

Main Product of the company

Air Compressor

Reciprocating air compressor

Used for commercial applications, such as auto body shop, small garage or Do-It-Yourself projects.

Oil Free Air compressor

Used for industrial applications, such as electronics, pharmaceutical, textiles & food/beverage production.

Oil flooded air compressor

Used for industrial applications, such as automotive & general industry.

Centrifugal air compressor

Used for industrial & process application, such as air separation, blow molding & textile.

Power tools

Cutting tools.

Grinding machine.

Drilling machine.

Lifting and material handling equipment

Hoists

Support structure.

Mechanical, electrical balancer.

Club car

One of the most respected names in the golf industry, is the world's largest manufacturer of small-wheel, zero-emissions electric vehicles.

Thermo king

Thermo King enhances quality of life through transportation temperature control systems and dealer networks that deliver assurance of freshness, performance and partnership.



(Er. Dinesh Explaining about Ingersoll Rand Company)

At Ingersoll Rand students were given brief introduction of company by Mr. Menon. Students were briefly introduced to their products, their work culture and their standards towards their organization leading them towards excellence. After introduction students were taken to visit the factory assembly line where it is observed how they manage to finish all the task with accuracy and on time and deliver the perfect goods to customers. Ingersoll Rand uses lean manufacturing principles, assembly line balancing, time study and motion study for improvement of Productivity with quality. On time delivery ensures the customer satisfaction learnt by students through this visit.

Then Students left for IGTR which is one of the most advanced tool room present in our country at IGTR Students learned about many machine tools and various sorts of machining process and how to achieve quality with necessary steps. Indo German Tool Room Ahmedabad is a tool room and training Centre engaged in production of tools of precision plastic & metal component and also engaged in area of Training in tool and die making, CAD/CAM & CNC Technology. The time has now come to evolve and implement new strategies, to exploit the hidden potential in human resource and future entrepreneurs in making for the development of the society, in this context INDO GERMAN TOOL ROOM offers a wide range of services especially to small scale industries. "Indo German Tool Room, Ahmedabad India, A government Of India Non profit autonomous society, is an institute in Tool and Die making and modern production technology.

It has established as most reliable source for SME's for their tooling requirements. Besides tool room activities, society permits use of its resources to industries like precision machining, quality control and CAD-CAM-CAE-RPT services. The tool room is also a source for day one Productive and trained manpower at entry level in tool and die making and CAD-CAM-CAE and CNC technology. Since liberalization of the economy established in 1994, India faces strong international competition. Thus, growth and diversification of its industry are increasingly characterized by a shift from simple to technically complex products.

Many enterprises aim at high value-addition. Modernization and automation of production processes increase productivity and reduce unit cost. This is particularly true for the engineering industries (metal and plastics processing ventures) as well as small and medium-scale enterprises (SME). They manufacture tools and molds or use them for producing parts, components, systems, and final products, often as sub-contractors of large enterprises. In recent years the quality of their products and the efficiency of their production processes augmented considerably. Nevertheless, many SME still face constraints. They are related to rapid changes of the market and accelerated technological progress



(At Indo German Tool Room Ahmedabad)

After reaching IGTR students were given brief introduction regarding various manufacturing processes and recent trends in production engineering. Students were able to see conversion of customer demand into real time product and its methodology. Students were able to see and learn operation of CNC Milling, turning Centers, EDM, Wire EDM, Injection molding, Die making and reconditioning.

After this visit students were able to understand assembly line principles, lean manufacturing principle and how to achieve desired quality with some measures. This visit has briefly introduced us to manufacturing processes that intend to shape our country's most contributing GDP sector.



Birla Vishvakarma Mahavidyalaya (BVM)

Engineering College

(An Autonomous Institution)

Production Engineering Department

T.Y. (B.TECH) - Industrial Visit Report

Faculty Coordinator: Prof. J R MAKWANA

Academic Year 2017-18

Report of Industrial Visit for T Y B.TECH for the AY: 2017-18

Sr. No.	Company Name	Date	Duration	Resource Person	No. of Students
1.	Parkage Industry	17/03/2018	01:00 pm to 02:00 pm	Mr. Jagdish Patel	25
2.	Vidya wires Pvt. Ltd	17/03/2018	02:00 pm to 03:30 pm	Mr. Bhusan	25

1) Parkage Industries

About Visit

The technical visit to **Parkage Industries**

Visit was organized on March 17, 2018 from 1:00 pm to 02:00 pm as a part of third year students as a part of subjects Bulk deformation & sheet metal working processes (PE 305) & Machining Processes (PE 303). The students into 2 groups visited several sections of manufacturing & forming of metal & sheet unit. Students show practical concept of MIG & TIG welding. They show various operations on sheet metal like forming, shearing, blanking, piecing, drawing, pipe bending etc. In this visit students are more familiar with the concept of sheet metal forming.

Date	:	March 17, 2018
Name of Company	:	Parkage Industries. , Vitthal Udyognagar
Duration	:	01:00 am to 2:00 am
Total Students	:	25
Faculty Coordinator	:	Prof. J R MAKWANA PROF. R S BAROT

Glimpse of the visit:



T Y B.TECH Students & Faculty Coordinators

2) Vidya Wires Pvt. Ltd, V. U. Nagar

About Visit

The technical visit to Vidya wires pvt.ltd Vitthal Udyognagar was organized on March 17, 2018 at 2:00 pm for Third year students as a part of Subject Bulk deformation & sheet metal working processes & (PE 305) Machining Processes (PE 303) . All the students were divided into 2 groups and escorted to the respective units by the Industrial persons. Students visited several areas of vidya wire plant & shows different processes how wires are making & wire drawing operation & its machines. The student shows how they make its final products from raw material to finish products and shows how they find defects & do packaging for dispatching the final products with automation etc in the visit.

About: VIDYA WIRES PVT. LTD

The company Established in the year 1982, VIDYA WIRES PVT LTD leading manufacturers and exports of Super Enameled Copper wire. The ranges include INSULATED COPPER CONDUCTORS Like Enameled Copper Wires / Magnet Wires, Enameled Copper Strips, Paper Covered Copper Strips & Wires (Kraft / Crepe / Nomex / Mica / Fiberglass / Douglass) Bare annealed Copper Wires & Strips, Copper Tapes etc. under the brand name of "VIDYA".

Date : March 17, 2018

Place of Company : VIDYA WIRES PVT. LTD

Duration : 2:00 pm to 3:30 pm

Total Students : 25

Faculty Coordinator : **Prof. J R MAKWANA**
PROF. R S BAROT

Glimpse of the visit:



T Y B.TECH Students & Faculty Coordinators



Report Prepared by

**Prof. J R MAKWANA
Assistant Professor**

Production Engineering Department

Birla Vishvakarma Mahavidyalaya (BVM)

(An Autonomous Institution)

*****_***_*****



Birla Vishvakarma Mahavidyalaya (BVM)

(An Autonomous Institution)

Department of Production Engineering

Industrial Visit Report

Morbi & Rajkot Industrial Estate

Duration

18/04/2018 to 21/04/2018

(4 Days)

Class

S. Y. B. Tech.

Faculty Coordinators:

Prof. G. V. Patel

&

Prof. D. A. Gajjar

AY: 2017-18

Contents

Sr. No.	Company Name	Date	Duration	Resource Person
1.	Varmora Granito Pvt. Ltd., Morbi	18/04/2018	12:00 noon to 02:00 pm	Mr. Bhavesh Varmora
2.	Samay Polypack Pvt. Ltd., Morbi	18/04/2018	02:00 pm to 03:30 pm	Mr. Durlbhajibhai Dethariya
3.	Maharshi Textile LLP, Morbi	18/04/2018	03:30 pm to 05:00 pm	Mr. Ravi Patel
4.	Atul Auto, Shapar, Rajkot	19/04/2018	10:00 am to 01:30 pm	Mr. Pranav Adhia
5.	Millennium Forging, Shapar, Rajkot	19/04/2018	02:30 noon to 04:00 pm	Mr. Dinesh Ribadia
6.	Amazon Technocast, Shapar, Rajkot	19/04/2018	04:30 pm to 06:00 pm	Mr. Rajesh Senjaliya
7.	Balaji Wafers, Vajdi, Rajkot	20/04/2018	09:30 am to 01:00 pm	Mr. Kanubhai Virani
8.	Echjay Industries, Aji Industrial Estate, Rajkot	20/04/2018	03:00 pm to 06:00 pm	Mr. J. R. Kikani
9.	Jyoti CNC Automation Ltd. (Unit I), Metoda, Rajkot	21/04/2018	09:00 am to 10:30 am	Mr. Nawaz Ghodi
10.	Jyoti CNC Automation Ltd. (Unit III), Metoda, Rajkot	21/04/2018	11:00 am to 12:30 pm	Mr. Vijay Shah
11.	Mater Rings, Metoda, Rajkot	21/04/2018	01:00 pm to 02:30 pm	Mr. Manmohan Mendapara
12.	Panchnath Auto Pvt. Ltd (Fieldmarshal), Shapar, Rajkot	21/04/2018	03:30 pm to 05:00 pm	Mr. Manish Koyani

Visit to Morbi & Rajkot Industrial Estates

About Visit

An Industrial Visit was organized from April 18, 2018 to April 21, 2018 for second year students to give practical exposure of different manufacturing processes. The students had visited 12 different large & small manufacturing units. They had real-time practical exposure of various traditional & advanced manufacturing processes like casting, welding, forming, machining & automation etc.

Location of Companies	:	Morbi & Rajkot Industrial Estate
Duration	:	4 days (18/04/18 – 21/04/18)
Total Students	:	42
Faculty Coordinator	:	Prof. G. V. Patel Prof. D. A. Gajjar

Glimpse of the visit:



S Y B. TECH Students, Faculty Coordinators & HOD at departure

1) Varmora Granito Pvt. Ltd, Morbi

About Company

Varmora Granito Pvt. Ltd. had started as a small plant in 1994 is now capable of sustained production of ceramics products with quality and strength. Presently spearheaded by visionaries Mr. Bhavesh Varmora, Chairman, Varmora group has a multi-million business network of more than 5000 retail outlets and over 700 dealers, including 20 branches offices with more than 1200 professionals across the country.

About visit

The visit started with their showroom which had display of range of tiles. The storage area of Varmora had many imported raw materials. This raw materials are then converted to slurry and that is heated in furnace. This dried slurry is then converted into powder then rammed to give the shape of a tile. The tiles then passes through the cooling area / design area where the printing takes place under the controlled atmosphere. The tiles are baked then after for giving strength. On further cooling procedure the process of giving glaze is done on tiles after which inspection is done that is ended by packaging and dispatching.

Date	:	April 18, 2018
Duration	:	12:00 noon to 02:00 pm
Contact Person	:	Mr. Bhavesh Varmora

Glimpse of the visit:



Students & Faculty Coordinators at Varmora

2) Samay Polypack, Morbi

About Company

Samay Polypack is small automated production unit of packaging material owned by Mr. Devrshibhai Dethairya. Samay Polypack manufactures a comprehensive range of Polyethylene & Polypropylene Packaging Bags that conforms to the international quality standards.

About Visit

Samay Polypack is an industry well equipped with modern machineries. The production starts by weaving polyethylene small balls into threads which were rolled on. Then these rolled threads were inserted in a different weaving machine which makes polyethylene bags. Printing on these bags is then carried out at the end.

Date : April 18, 2018
Duration : 02:00 pm to 03:30 pm
Contact Person : Mr. Durlbhajibhai Dethariya

Glimpse of the visit:



Students & Faculty Coordinators at Samay Polypack

3) Maharshi Textile LLP, Morbi

About Company

Maharshi Textile LLP is the only denim production unit in Saurashtra own by Mr. Ravi Patel. Maharshi Textile LLP provides high quality denim which meets customer satisfaction.

About Visit

The Japanese machines used by Maharshi Textiles has a great automation level. The production is carried out in a controlled atmosphere with a high degree of the automation level. The denim cotton produced, passes through the strict inspection under trained workers.

Date : April 18, 2018
Duration : 03:30 pm to 05:00 pm
Contact Person : Mr. Ravi Patel

4) Atul Auto Ltd, Shapar, Rajkot

About Company

Atul Auto Ltd. is a leading three wheeler manufacturing company in Rajkot, Gujarat, India. The company's origins lie in the 1970s, when Jagjivanbhai Chandra sought to modify motorcycles to make transport to meet the needs of rural areas of Saurashtra and adapted the engines from golf carts scrapped by the Maharaja of Jamnagar, resulting in first chhakada vehicles. Atul Auto is blazing towards a new tomorrow of innovation and continuing in the footsteps of the founder and developing more innovative, environment-friendly and practical automobile vehicles – establishing market trends along the way.

About Visit

The manufacturing starts first by sheet metal work by making chassis. The Manufacturing goes in certain steps like BIW (Body at white shop, CED (Cathode Electrode Deposit) that is a modern technique for corrosion resistant done before painting. The automatic line conveyor is used for assembly of engine with body. The Quality assurance involves speed test, braking test etc.

Date : April 19, 2018

Duration : 10:00 am to 01:30 pm

Contact Person : Mr. Pranav Adhia

Glimpse of the visit:



Students & Faculty Coordinators at Atul Auto Ltd.

5) Millennium Forging Pvt. Ltd, Shapar

About Company

Millennium Forging Pvt. Ltd is an ISO 9001: 2008 certified engineering company established in 1997 specialized in close die forgings. It manufactures & exports custom parts to USA, Germany, Italy, Austria, Morocco, UAE, Africa, & Australasia as per client's specification and drawings out of carbon steels, alloy steels, stainless steels, brass and aluminum which can be supplied in as forged condition followed by heat treatment & Machining. It makes forged and machined products of 7200 MT per annum for a variety of customers in industries like automotive, oil, gas, construction, valves, pumps, pipe fittings, mining, earthmovers, power sector, marine, railways, defense, aviation, agriculture etc.

About visit

The visit taught student about the forging process in detail in which oil fired furnace was used. There was a die making machine tool for forging. The storage of Millennium had billets with different color coding. The production was carried out with two types of hammer mainly belt hammer and pneumatic hammer.

Date : April 19, 2018
Duration : 02:30 pm to 4:00 pm
Contact Person : Mr. Dinesh Ribadiya

Glimpse of the visit:



Students & Faculty Coordinators at Millennium Forging Pvt. Ltd.

6) Amazon Technocast Pvt. Ltd, Shapar

About Company

Amazon Technocast Pvt. Ltd. is an Investment Casting unit which is taken up by well-known group of industry – ‘Millennium Group’. The ‘Millennium Group’ is a leading in Investment Casting, technologically advance facility with highly experienced team. A strong quality assurance ensures series of inspection activities with modern testing equipments is to have consistent quality of casting.

About Visit

All the process studied for Investment Casting were observed thoroughly. The processes like fettling, machining and inspection were observed. The preparation of wax pattern is carried out by highly trained workers who carried out the process with great precision. Amazon Technocast bridged the theoretical and practical knowledge of Investment Casting.

Date : April 19, 2018

Duration : 04:30 pm to 06:00 pm

Contact Person : Mr. Rajesh Senjaliya

Glimpse of the visit:



Students & Faculty Coordinators at Amazon Technocast

Production Engineering Department

7) Balaji Wafers Pvt. Ltd., Vajdi, Rajkot

About Company

Balaji Wafers began as a micro-retail enterprise in 1974, managed by the Virani brothers of Astron Cinema, Rajkot. The company employs more than 1800 personnel in Rajkot and Valsad manufacturing facilities. Balaji has the capacity to manufacture 1,00,000 kg of potato wafers along with 5,00,000 kg of savouries per day. It has evolved into a Rs 4000 crore company of quality products with an indigenous taste.

About Visit

Balaji Wafers has a considerable level of automation & students got a first-hand feel of automation and the way automation works. The starting stage of manufacturing of potato wafers was initiated by sorting the potatoes which were then peeled and passed under the hot water container. After this slicer cuts the potatoes that are then deep fried in the oil. This oil keeps on changing after few cycles frying. According to the flavor of potato wafers different process are then carried out like making of masala potato wafer, etc. The deep fried potato wafers pass under the bath of powdered masala, etc. After flavor is given to potato wafers these are inspected by the workers and then passed to the packaging line. Apriori to packaging a last inspection for checking presence of any metallic element is done. At the end Mr. Kanubhai Virani (the founder of factory) shared the journey of Balaji Wafers Pvt. Ltd. to the students.

Date	:	April 20, 2018
Duration	:	09:30 am to 01:00 pm
Contact Person	:	Mr. Kanubhai Virani

Glimpse of the visit:



Students & Faculty Coordinators with Mr. Kanubhai Virani (MD, Balaji Wafers)



Students having interactive session with Mr. Kanubhai Virani (MD, Balaji Wafers)

8) Echjay Industries Pvt. Ltd., Rajkot

About Company

Echjay Industries Pvt. Ltd. is a global leader in manufacturing a variety of quality forgings meeting to the requirement of International Standards and specifications. It carries out a complete range of Hot, Cold and Ring Rolling forging technologies along with machining capabilities. Echjay's products also cater to the need of various other industries such as Oil and Natural Gas, Petrochemical, Heavy and General Engineering, Earth Moving, Railways and defence. Echjay has been exporting its products for more than three decades to various countries including USA, Canada and Europe. Echjay has a built-in capacity to produce 70,000 tonnes of forgings per annum.

About Visit

The visit started by observing the forging process which was done using a hydraulic hammer. Various sizes of forged products were being manufactured during the visit. After this, the forged material was taken towards the machining area and inspection area where shot blasting was carried out. After this, the storage area of the industry was shown, which was very huge and had a bulk of tonnage of raw material. The forging machines were observed that were hydraulically operated. The industry had CNC machines for various machining processes and also there was a unit of gear manufacturing. In the unit of gear manufacturing, there were different inspection methods and posters were available for detecting defects in gear. During the whole visit, many posters of qualities were seen on the wall which kept the workers motivated. At the end, there was a short interactive session with Mr. J.R. Kikani (Personnel Head of Echjay).

Date : April 20, 2018
Duration : 03:00 pm to 06:00 pm
Contact Person : Mr. J. R. Kikani

Glimpse of the visit:



Students & Faculty Coordinators at Echjay Industries

9) Jyoti CNC Automation Ltd. (Unit I), Metoda, Rajkot

About Company

Jyoti was established in 1989 and today is one of the largest multinational. Jyoti was the first company to manufacture CNC machines in Gujarat. Jyoti has acquired a 150 years old French Machine Tool giant in 2007- Huron Graffenstaden SAS. Jyoti has won 4 Gold Awards at Quality Circles state level competition held at Baroda by Quality Circle Forum of India in Sept'17. Jyoti is upgraded with ISO 9001:2008. Jyoti is accredited for ISO 14001 & OHSAS 18001 by Tuv Sud South Asia.

About Visit

Unit I of Jyoti Automation Ltd. had a display of its products and an administrative block. There are 5 Machine Shops and 2 Grinding Shops. The various machining operations were observed. The different types of CNC machines were studied in which each CNC & had different level of automation.

Date	:	April 21, 2018
Duration	:	09:00 am to 10:30 am
Contact Person	:	Mr. Nawaz Ghodi

Glimpse of the visit:



Students & Faculty Coordinators at Jyoti CNC Automation Ltd. (Unit I)

10) Jyoti CNC Automation Ltd. (Unit III), Metoda, Rajkot

About Visit

Unit III of Jyoti has a huge foundry where basic processes like pattern making, core making mould making, clamping, poring, cooling, removal of casting, primary finishing and inspection is carried out. Unit I has a big assembly line where different types of CNC machines are being assembled and final inspection is carried out. In Unit III of Jyoti students got a detailed information on sand casting.

Date : April 21, 2018

Duration : 11:00 am to 12:30 pm

Contact Person : Mr. Vijay Shah

Glimpse of the visit:



Students at Jyoti CNC Automation Ltd. (Unit III)

11) Mater Rings, Metoda, Rajkot

About Company

Master rings is an ISO 9001:2008 QMS certified by TUV SUD. It manufactures Bearing Races, Ring Joint Gasket and Auto & Gear Rings. It has an installed capacity of 300 MT Forging and Annealing. The company have an installed capacity of Die Shop, Tool Room, Band saw cutting, Induction Heating, Hot Shearing, Forging & Heat Treatment.

About Visit

Master rings manufactures different rings. The visit started with the storage area of raw materials where billets were kept. The billets were cut into small pieces which were then heated into the furnace till it become red hot. These pieces were then forged into three steps for forging of rings. The rings were than stored in the storage area and prepared for dispatch. There were many different sorts of machines for forging. The visit to Master rings gave a good knowledge to students about the forging process.

Date	:	April 21, 2018
Duration	:	01:00 pm to 2:30 pm
Contact Person	:	Mr. Manmohan Mendapara

Glimpse of the visit:



Students & Faculty Coordinators with Mr. Manmohan Mendapara (Director, Master Rings)

12) Panchnath Auto Pvt. Ltd. (Fieldmarshal), Rajkot

About Company

PAL (Panchnath Auto Pvt. Ltd.) is with Fieldmarshal to develop PAL 3-wheelers. PAL manufactures good carriers, passenger carriers and special purpose vehicles. The company spends over 2% of its annual turnover on new product development.

About Visit

PAL assembles and make tractors for Mahindra & Mahindra. Two tractors were being assembled which were Jivo and Yuvraj. A complete practical working of assembly line was seen. Initially sheet metal body was inspected and then painting was done and on the other side assembly of engine and other machine was carried out. Finally, whole tractor was assembled and then various test like acceleration test and braking test were carried out.

Date : April 21, 2018
Duration : 03:30 pm to 05:00 pm
Contact Person : Mr. Manish Koyani

Glimpse of the visit:



Students & Faculty Coordinators at Panchnath Auto (Fieldmarshal)

Production Engineering Department



Prepared by

**Prof. Gaurav Patel & Team
Production Engineering Department**

**Birla Vishvakarma Mahavidyalaya (BVM)
(An Autonomous Institution)**

*****_***_*****

Industrial Visit to Shree Vallabh Alloy Steel Castings

About Visit

The technical visit to Shree Vallabh Alloy Steel Castings, Vitthal Udyognagar was organized on 27th January, 2018 from 1:00 pm to 3:00 pm for 44 students of third level by Prof. R S Barot. All the students were divided into 2 groups and escorted to the respective labs by the Industrial persons. Students visited several areas like foundry shop, metallurgy lab and workshop in the visit.

About Shree Vallabh Alloy Steel Castings

Shree Vallabh Alloy Steel Castings; an ISO 9001-2000 certified company established in the year 1993 at Vithal Udyognagar. The company is primarily engaged in the manufacturing and exporting of durable metal castings of all grades alloy steel, & plain carbon steel with high technology production machines. Shree Vallabh Alloy Steel Castings is one of the reputed Import substitutes & the innovators in the domain of conversion of Fabricated / wrought products into castings that improve the product life and quality.

Date : 27th January 2018

Place of Company : Shree Vallabh Alloy Steel Castings, V. U. Nagar

Duration : 1 Day

Total Students : 44

Faculty Members : Prof. R S Barot

Prof. J. R. Makwana

Glimpse of the visit



Industrial Visit to Warm Stream

About Visit

The technical visit to Fine Cast, Vitthal Udyognagar was organized on February 03, 2018 from 02:00 pm to 03:00 pm for 32 students of third level by Prof. R S Barot. All the students were divided into 2 groups and escorted to the respective shops by the Industrial persons.

About Warm Stream

Warm Stream was established by Mr. J. A. Patel in June 1974 and is India's largest manufacturer and exporter of Water Heating Products, Heat Transfer Equipment, Water Heating Equipment and Solar Dryer. Warm Stream also manufactures Gas and Oil fired water heaters, Instant Gas Geysers and Bio-Medical incinerators. Further, Warm Stream is also offering excellent distributor/dealer program that can be further customized to individual company requirements.

Date : February 03, 2018

Place of Company : Warm Stream, V. U. Nagar

Duration : 1 Day

Total Students : 32

Faculty Members : Prof. R S Barot
Prof. J. R. Makwana

Glimpse of the visit



“Virtual Visit Of Forging Plant”

Date:-2nd October, 2020

- Team IE (I) Mechanical & Production Birla Vishvakarma Mahavidyalaya organized a Virtual visit of Forging Plant under the guidance of Prof. Bharat Patel sir, Prof. Jigisha Thakkar maam and Prof. Purvi Chauhan maam.
- This Industrial Visit was organized for engineering students of Birla Vishvakarma Mahavidyalaya, and more than 110 Students Participated in this Virtual Visit.



The Institution Of Engineers(INDIA)
Mechanical & Production Students' chapter
Birla Vishvakarma Mahavidyalaya

“VIRTUAL VISIT OF FORGING PLANT”

 **Yash Mendapara**
Quality control & Inspection Engineer

Industry :
Master Rings Forging

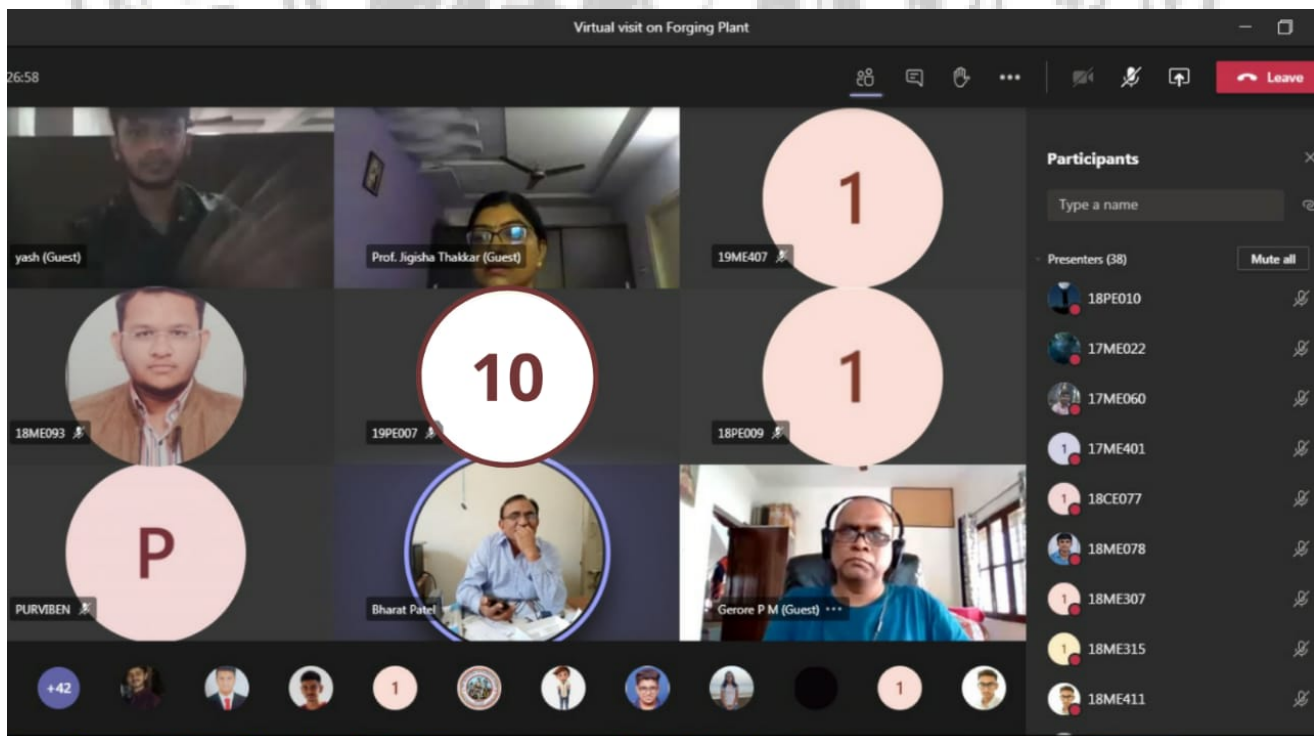
Date : 2nd October, 2020
Time : 3:00-4:30 PM
Platform : Microsoft Teams

Faculty Advisor : Prof. Bharat Patel
Prof. Jigisha Thakkar
Prof. Purvi Chauhan

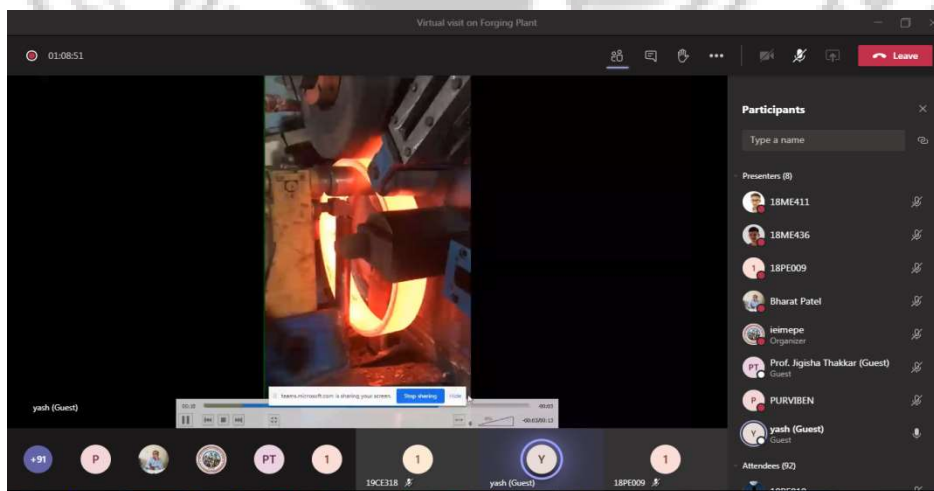
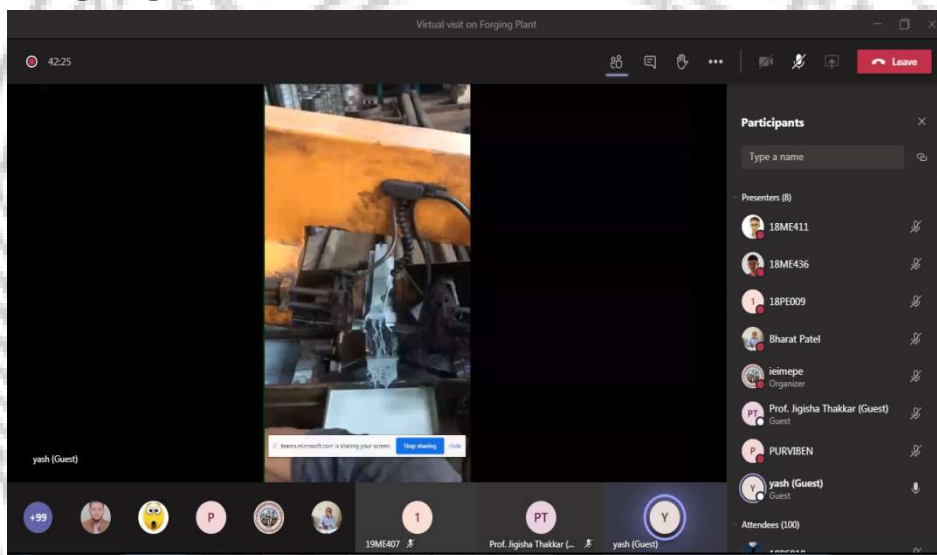
E-Certificate will be provided.

✉ ieimepr@bvmengineering.ac.in
📷 ieiteambvm

- This Virtual Visit was organized on the platform of MS- Teams scheduled from 3:00 PM to 4:30 PM.
- Our host Hetvee Talati commenced the virtual visit, and Prof. Bharat Patel Sir chanted a shloka of God Saraswati and welcomed the faculty members & the audience. Then Prof. Jigisha Thakkar maam introduced our speaker, and Prof. P.M.George Sir gave the importance of forging Processes.
- Mr. Yash Mendapara who works as a Quality Control & Inspection Manager in “Master Ring Forging” is an Alumni of our college.



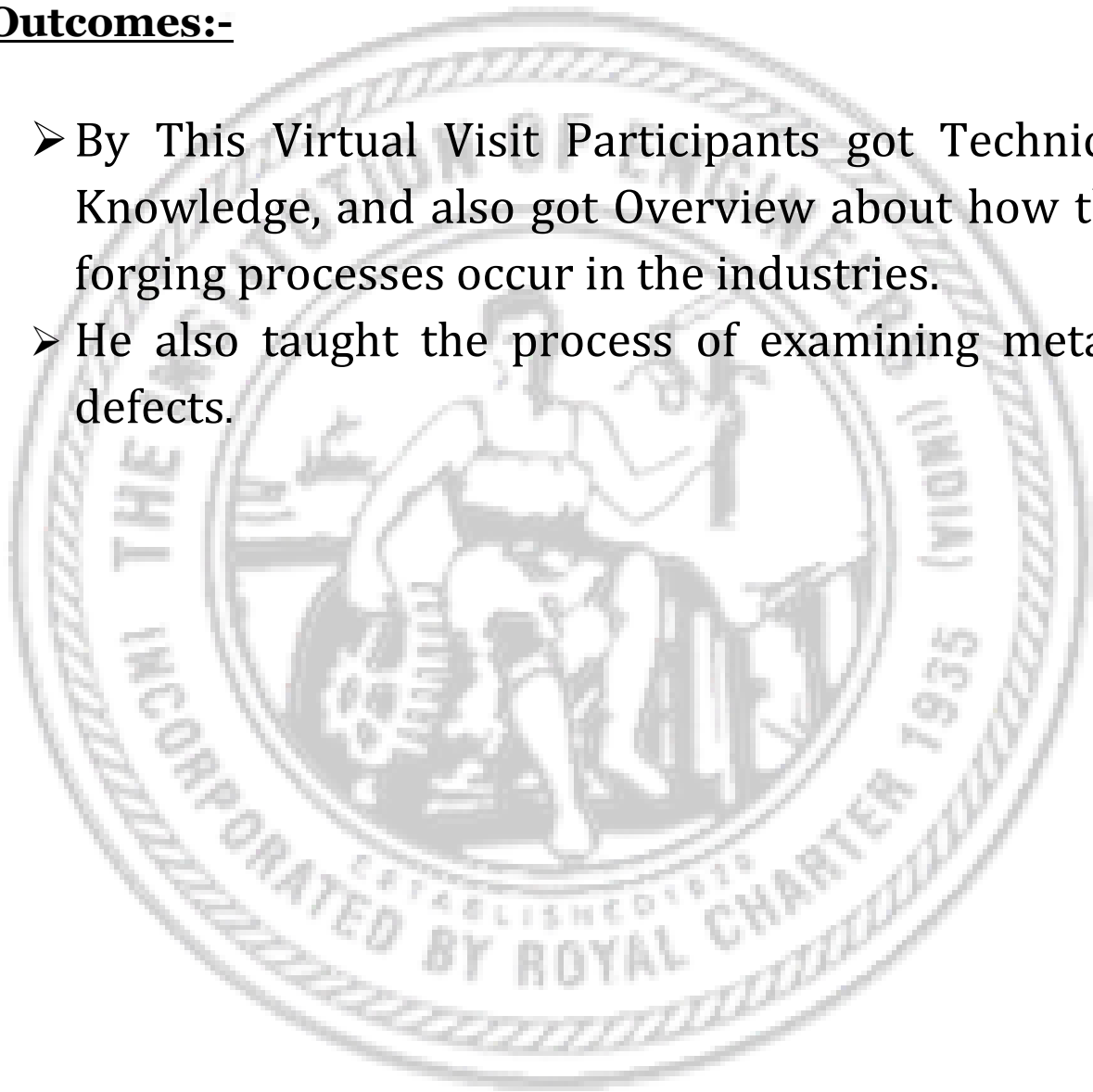
- Mr. Yash Mendapara briefly described about basic concept of forging Processes and it's related Things Like Band shaw cutting machine, Induction Heating, Hot Shearing Forging, CNC Machine, Die Shop (Tool Room), Annealing etc. by a virtual visit, and gave us an idea about which safety measures should be taken into consideration while doing forging processes.



- Mr. Yash Mendapara also answered the Doubts raised by the participants , and in the end Prof. Purvi Chauhan maam gave Vote of Thanks and Concluding speech.

Outcomes:-

- By This Virtual Visit Participants got Technical Knowledge, and also got Overview about how the forging processes occur in the industries.
- He also taught the process of examining metals defects.





**A Report
On
Technical Visit at**



“Aimtron Electronics Pvt. Ltd.-Vadodara”

On

17/03/2018

By

1st Year EC Department

Students of

BVM Engineering College

(Affiliated to Gujarat Technological University)

(An Autonomous CVM Institution)

• **Summary Table**

Name of Industry/Organization Visited:	Aimtron Electronics Pvt. Ltd.		
Address of Industry/Organization Visited:	1A GIDC Estate, District: Vadodara, Waghodia: 391760 (Gujarat), India		
Information of Industry Person:	Name:	Mrs. Ekta Mehul	
	Designation:	Director	
	Department:	Aimtron Foundation	
Contact Information of Industry Person:	Contact No:	(02668) 262653	
	Email Id:	ekta.mehul@aimtronfoundation.org	
Name of Principal of the Institute:	Dr. I.N.Patel		
Department Name of the Institute:	E.C. Department		
Name of Head of the Department:	Dr. B.C.Gradiya		
Year/Semester of the Students	1 st year		
Specific Subject under which visit organized:	PCB Design		
Date and Time of Departure:	9:00 A.M. , 17 th March.2018		
Date and Time of Arrival:	4:00 P.M. , 17 th March.2018		
No of Days for Visit:	01		
Accompanying Staff Name:	1	Prof. Ronak R. Vashi	
	2	Prof. Kaushal R. Patel	
	3		
Contact information of Staff:	No	Contact No:	Email Id:
	1		Ronak.vashi@bvmengineering.ac.in
	2		kaushal.patel@bvmengineering.ac.in
	3		
Mode of Travel:	BUS ,(GCET college)G23Y9588		
No of Boys Students:	29		
No of Girls Students:	17		
Total No. of Students:	46		
Accommodation Venue name and Address:	NA		



ABOUT COMPANY

Aimtron began in 2009, despite the great economic hardships at the time. The early Aimtron team built the foundation for a great company. After focusing on perfecting our processes domestically, Aimtron mirrors that process at our offshore facility so that our Asia production has the same Aimtron Quality. Aimtron strongly believes in a family culture. They foster excellent inter-employee relationships in order to support customer's expectations.

Vision

Become the preferred partner of both our customers and suppliers in electronics manufacturing and in any other business we choose to pursue, globally.

Mission

- Empower all employees by providing training to enhance their ability.
- Maintain profitable growth where feasible.
- Preserve a culture of continuous improvement.
- Provide customers and suppliers with fair, mutually profitable and creative solutions.
- Use state-of-the-art and user-friendly infrastructure.

Thru Hole Processing



The image shows a collage related to Thru Hole Processing. On the left, a close-up of a wave soldering machine with a circuit board being processed. In the center, a green circuit board with various components. On the right, a woman in a blue lab coat working at a station. A banner at the top right states 'Lead Free RoHS & REACH COMPLIANT' with a green checkmark icon. A list of services is on the left, and a share icon is on the right.

Lead Free
RoHS & REACH
COMPLIANT

- ☐ Wave Soldering
- ☒ Automated Selective Soldering
- ☐ Manual Soldering

Services: Surface Mount Technology



The image shows a wide view of a factory floor for Surface Mount Technology. Several workers in blue lab coats are operating large industrial machines. The machines are white and grey, with some having green accents. The floor is light grey, and there are windows in the background.

- ★ Screen Printing With Automated Paste Inspection
- ★ High Speed, Dual Gantry Part Placement
- ★ Intelligent Multi-Zone Reflow
- ★ Automated Optical Inspection
- ★ Two Lines plus Dedicated NPI/Proto 3rd Line

- Permission letter copy of Institute



Ronak Vashi <ronak.vashi@bvmengineering.ac.in>

RE: INDUSTRY VISIT

Ekata.Mehul@aimtron.org <Ekata.Mehul@aimtron.org>
To: Ronak Vashi <ronak.vashi@bvmengineering.ac.in>
Cc: Prashant@aimtron.org

Fri, Feb 9, 2018 at 10:30 AM

Hello Prof. Ronak,

We will have then the schedule as below for 17th March:

1. 10.00 am – Introduction to Aimtron company and Activities
2. 10.30 am – Details for PCB Manufacturing process
3. 11.00 am – Visit to Manufacturing Plant
4. 12.30 pm – how and where Digital Electronics and Basic Electronics used for Embedded Systems.
5. 1.30 pm – Travel back to Anand

Let us know if you need any changes in this schedule.

Regards

Ekata Mehul

Director Operations

Aimtron Foundation,
1/A GIDC Estate, 2nd Floor
District: Vadodara,
Vaghodia: 391760 (Gujarat), India
Main: (02668) 262653

Direct: 87806 05575 | 98243 47721

ekata.mehul@aimtron.org

www.aimtronfoundation.org



Name of Student coordinator:

- (1) RUDRAX DAVE
- (2) AASHI UPADHYAYA

Attendance List:

Sr.No	Enrollment No	Name	Signature
1.	170080111055	Neel Macwan	
2.	170080111051	Vatsal shah	
3.	170080111052	Sakhsi Mehta	
4.	170080111056	Harsh Modi	
5.	170080111058	Deep sakhiya	
6.	170080111059	Vaibhav goel	
7.	170080111054	Akhil Rabadiya	
8.	170080111053	Harsh saraiya	
9.	170080111049	Yagnik Mehta	
10.	170080111061	Harsh Navadia	
11.	170080111060	Dhawani trivedi	
12.	170080111057	Kruti kamdar	
13.	170080111007	Ronak karmur	
14.	17EC414	Fouzio zuma	
15.	170080111018	Dhruv patel	
16.	170080111037	Nisarg patel	

Sr.No	Enrollment No	Name	Signature
1.	170080111003	BarotSameerkumarJigneshkumar	
2.	170080111013	KandoriyaPiyushNagabhai	
3.	170080111041	Shukla Ragnishailinbhai	
4.	170080111008	Desai Kamyabhavesh	
5.	170080111016	KhichiUditKrishan	
6.	170080111047	VoraDhwaniDhaval	
7.	170080111030	Patel KrutarthGhanshyambhai	
8.	170080111001	Amin NisargKirankumar	
9.	170080111011	HiraniRoshniAshokbhai	
10.	170080111002	BapatDurgaShamkalyan	
11.	170080111032	Patel PreranaAnilbhai	
12.	170080111020	ManekKrutiJaysukhlal	
13.	170080111005	DarjeeDishaAshokbhai	
14.	170080111040	Shukla NamanBeerendra	

Sr.No	Enrollment No	Name	Signature
1.	170080111055	Rutvik Manishkumar Patel	
2.	170080111051	Jay Ashwinkumar Ghiya	
3.	170080111052	Deepansh Deepak Jaiswal	
4.	170080111056	Shreyans Shitalkumar Patel	
5.	170080111058	Drashti Sunilkumar Shah	
6.	170080111059	Neshwari Jitendra Sharma	
7.	170080111054	Shreya Mehta	
8.	170080111053	Abhijeet Karmakar	
9.	170080111049	Arshit Patel	
10.	170080111061	Raveena Vala	
11.	170080111060	Aashi Upadhyay	
12.	170080111057	Ritvik Singh Chouhan	
13.	170080111007	Vatsa Dave	
14.	170080111044	Aziz Suterwala	
15.	170080111018	Poonam Lalwani	
16.	170080111037	Rohit Shah	
17.			

UNDERTAKING LETTER - FACULTY

We here-by undertake that the Industrial Visit/Cultural Visit/ Field Trip/Study Tour/Out bound Training is purely academic related and at any case .

We shall undertake full responsibility of the student's actions and behavior at all times during the course of Industrial Visit/Cultural Visit/ Field Trip/Study Tour/Out bound Training. We further undertake not to breach the safety guidelines of the BVM Engineering College at any cost.

Sr.No	Name	Department Name	Signature
1.	Prof. Ronak R. Vashi	EC	
2.	Prof. Kaushal R. Patel	EC	

Thanks letter copy given to the Company/Organization



Plot No. 1/A, G.I.D.C. Estate, Dist.: Vadodara
Waghodia - 391 760 (Gujarat) INDIA
Ph. No. +91 2668 262653
Email: info@aimtron.in | www.aimtron.in
CIN - U31900GJ2011PTC065011

Ref.:

Dated: March 17, 2018

To,
BVM College,
Vidhya Nagar

Dear Sir,

It is our Pleasure to Acknowledge that 51 students of BVM Engineering college V.V. Nagar is under gone industrial Visit at Aimtron Electronics Pvt. Ltd. On 17.03.2018. It has been our endeavor to highlight this silent feature of the system to the students as far as possible with in this finite time. So that they can have opportunity to choose their future profession.

I also thanks prof. Ronak R. Vashi. And Prof. Kaushal R. Patel for their valuable support and guidance during the industrial visit. I hope students will find it interesting and opt for future training program of their choice in our primacies

Yours faithfully,
For, AIMTRON ELECTRONICS PVT. LTD.



Thanks letter submitted to Industry/Organization.



ELECTRONICS & COMMUNICATION
DEPARTMENT
BIRLA VISHVAKARMA MAHAVIDYALAYA
(Engineering College)
Managed by – Charutar Vidya Mandal
Vallabh Vidyanagar – 388080
Gujarat, India

17/03/2018

To,
The Director,
Aimtron Foundation,
1/A GIDC Estate, 2nd Floor
District: Vadodara,
Waghodia: 391760 (Gujarat), India

Subject: Thanks for providing Industrial Visit for E.C. students at your premises.


Respected Sir,

Thank you for giving your precious time to our students for industrial visit at Aimtron Electronics Pvt. Ltd. on 17th March, 2018. Visit will help the students how electronics PCB manufactured in industry and how the overall product will come in to the market.

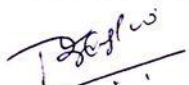
Thank you once again for making this industry visit successful.

Thanking You.

Head of Department,


Dr. Bhargav Goradiya
Electronics & Communication Dept.,
B.V.M. Engineering College.

Visit Coordinator,


Prof. Ronak Vashi

- **Students Feedback**

Visit experience for this industry was very enchanting and we got a lot of opportunities to learn new things and understand the actual working and processes taking place in the actual industrial world. Students learnt about the machines used and their significance along with the ways, tweak them to make them even better in future by innovation. Faculties were all the time in our support and also solved all the queries of the students after listening to their doubt carefully, understanding, calculating and then explaining it in a simple way that would help the student to clarify his/her doubt. The industries visit was energetic and all students seemed to have fun. Thanks to BVM College to engage in such activities. Students got a change to enhance our knowledge and get a rough idea of the work that is to be done in industries.

*******The End*******



Birla Vishwakarma Mahavidyalaya Engineering College, Anand



AMTECH Industrial Visit Report

6TH SEPTEMBER 2016

ELECTRONICS ZONE, GANDHINAGAR, GUJARAT.

Industry Profile:

Company Name: AMTECH Electronics India Limited

Address: E-6, GIDC, Electronics Zone,

Gandhinagar - 382 028,

Gujarat, India

Contact No.: +91-79-23289101, 23289102, 23289103

Fax: +91-79-23289111

Email: info@amtechelectronics.com

Work profile: They are dedicated to provide quality product and services that enhance their customer's success.

About Amtech

Amtech has established a farsighted corporate identity. The company wants to meet future expectations of customers in the field of Motion Control, Automation, Power Quality and Industrial Electronics with further advancement offering leading technologies on a global platform.

Today Amtech, a leading manufacturer offers various motion control products like AC Drives (also known as variable frequency drives or vfd), High Frequency Drives, Medium Voltage Drives (MVD), Soft Starters, Power quality products like Active Harmonic Filter (AHF) and Active Front-end Converter (AFC), Industrial Control Panels and Power Electronics products like AC Power Controller, Heater controller, Wind Power Converters, Solar Inverter and Customized Power Supplies.

Company Origin

Amtech is acronym for AMERICAN TECHnology. The company was incorporated in 1987 with a factory located in Electronics Zone, Gandhinagar. The commercial production came into force from 1991.

About Visit

The Industrial visit to Amtech company started at 6th September 7:30 AM from BVM Engg. College. There was one CVM bus containing 44 students (2nd year) and 2 faculties (Mr. G.K.Sharma and Mr. Y.R.Prajapati).



The CVM bus reached Gandhinagar around 9:30 am. The students did breakfast and then the bus was taken to Electronics Zone. The bus reached Amtech around 10:15 am. Students were taken to the Training Centre Room for a presentation to give information about Amtech.

Amtech

Amtech team includes professionals with rich experience in the field of Industrial Electronics, Manufacturing, Quality Assurance, Marketing and Research & Development.

One of the total strength of about 300 professionals, about 250 are in Head Office, at Gandhinagar, which includes, R & D, Manufacturing and related disciplines. The remaining team established across the country in the form of Branch Offices, Resident, Marketing, Sales and Service engineers. Amtech also has a well-knit network of dealers and system houses which are extended arms of the Marketing team.



Products

Amtech product categories include Motion Control System, Automation System, Power Quality & Energy Conservation Drivers and Industrial Electronics.

After the presentation, students were divided into two batches and were taken to get glance on the production of products one after other. Students were given safety instruction by the employee in charge. First, students were taken to assembly area where the machines were assembled. Employee

in charge gave detailed description about the assembly process. Then students were taken to the testing area where the Machines are tested to limits and for faults. Students were explained about the various controller used for controlling the machines.

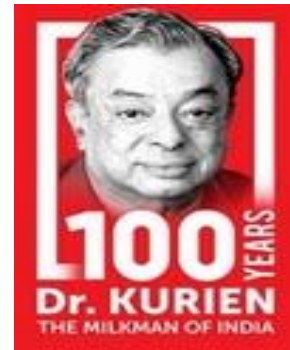


We departed around 12:45 pm and reached our college around 3:15 pm. So the day was quite knowledgeable. The staff and students were thankful to the Amtech and BVM college management for granting the permission for the visit. All the students enjoyed it and we are looking forward to more such visits.



Birla Vishvakarma Mahavidyalaya

INDUSTRIAL VISIT TO



AMUL CHOCOLATE FACTORY

18th December 2021

MOGAR , ANAND , GUJARAT

HISTORY OF AMUL DAIRY :

- AMUL's unique invention and rapid expansion across Gujarat inspired political leaders to replicate the successful business model in other parts of India.
- Amul Dairy became instrumental in bringing about the White Revolution in India, also called the Operation Flood.
- Amul business model also played a key role to transform India from a milk deficient country to one of the largest producers of milk in the world.
- Apart from a state of the art factory, Amul headquarters in Anand houses a dairy museum and some Amul parlors.
- Amul is an Indian dairy cooperative, based at Anand in the state of Gujarat, India. Formed in 1946, it is a brand managed by a cooperative body, the Gujarat Co-operative Milk Marketing Federation Ltd. (GCMMF), which today is jointly owned by 3.6 million milk producers in Gujarat.
- The white revolution was spearheaded by Tribhuvandas Patel under the guidance of Sardar Patel. As a result, Kaira District Milk Union Limited was born in 1946.
- Tribhuvandas became the founding chairman of the organization which he led till his last day of his life. He hired Dr. Kurien three years after the white revolution. He convinced Dr. Kurien to stay and help with the mission rest was history in the dairying industry.
- Amul spurred India's White Revolution, which made the country the world's largest producer of milk and milk products.

- In the process Amul became the largest food brand in India and has ventured into markets overseas.
- Dr. Vergese Kurien founder-chairman of the GCMMF for more than 30 years (1973–2006), is credited with the success of Amul

INDUSTRY PROFILE :

- **Ultra-modern Amul chocolate plant :**

Prime Minister Narendra Modi inaugurated a new chocolate plant of the Gujarat Cooperative Milk Marketing Federation (GCMMF), owner of dairy giant Amul, at Mogar at Anand in Gujarat

- **Production :**

The chocolate plant, built with an investment of Rs 190 crore, will produce 1,000 tones of chocolates every month against the capacity of 600 tones of the existing plant.

- **Type : Cooperative :**

Headquarter: Anand, Gujarat, India.

Industry: Dairy Products

Employees: 3.18 Million milk suppliers farmers

- **Website : AmulDairy.com**

Objectives :

- To aware students about milk processing units and automation plants of different dairy products
- To bring awareness of dairy organization functions
- To know working role of a person in industry

SUMMARY TABLE :

Title of the workshop :	Industrial Visit to Amul Chocolate Plant , Mogar , Anand		
Name and Designation of Experts:	Name		Designation
	Mr. Abhishek Bhatt		Senior Admin Officer
	Mr. Iftiyar		Technical Official
Organization and Department of Experts:	Sr. No	Organization Name	Department
	1	Amul Chocolate Factory	Dairy and Food Products
Contact Information of Experts:	Sr. No	Contact No	Email Id
	1	02692-225443	pro@amuldairy.com
Name of Principal of the Institute:	Dr. Indrajit N Patel		
Department Name of the Institute:	Electronics & Communication Engineering		
Name of Head of the Department:	Dr. Bhargav C. Goradiya		
Year/Semester of the Students	1 st Year Students of EC		
Date and Time of Visit :	Date: 18/12/2021 , Time: 1 :00 PM to 5 : 00 PM		
Venue Name:	Amul Chocolate Factory , Mogar , Anand		
Staff Coordinator's	1	Prof. K R Patel	

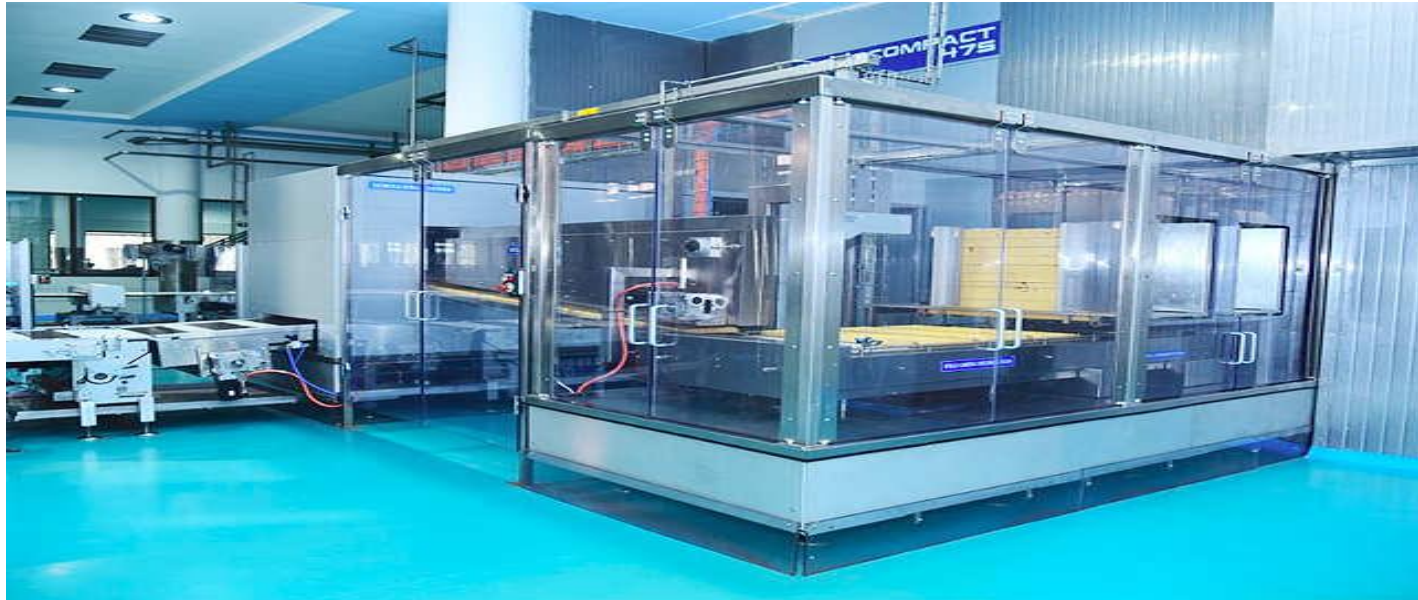
Name:	2	Prof. M M Sevak	
Contact Information of Staff:	No	Contact No :	Email Id :
	1	7990687399	mayur.sevak@bvmengineering.ac.in
	2	8980943264	kaushal.patel@bvmengineering.ac.in
Total No of Students :	38		

SUMMARY OF VISIT :

- We arrived AMUL Chocalate Plant,Mogar at 2:00 PM.
- After that we gathered at the front gate of organization and visited various sections of amul plant.
- The students visited different sections of dairy plant under guidance of Mr. Iftiyar and Mr. Abhishek Bhatt .
- Manufacturing Section [Equipped with Milk Tanks, Moulding line , Mixer , Drop Line , Cooling Tunnel]
- Packaging Section [Equipped with Pantavac Machines , Conveyer belts , Product Lifter and Packager]
- We have also visited Dispatching Sections for various dairy products.
- Pasteurized Milk Storage Tank- 10 Nos each have capacity of 35729 lits.
- Pasteurizer – 3 Units each have capacity of 1700 litres

- In Amul, this refrigeration plant work on base of Vapour compression refrigeration system (VCRS) and refrigerant used for chilled the milk in required temperature.
- In Amul 40% electricity consumed by refrigeration plant this plant work on base of Vapour compression refrigeration system (VCRS) and refrigerant used for chilled the milk in required temperature.
- The entire cold storage area has been equipped with Ammonia detection system as a measure of safety and integrated with Centralized Control and Monitoring system.
- Oxygen sensors have also been installed and integrated with automatic fire extinguishing system, indicating location of fire on the Central Monitoring System.
- The Vapour Absorption machine (VAM), mainly working equipment is used screw compressor for refrigerant and circulate hole plat and also installed recently for variable load pattern in Amul Dairy, is the first major successful waste heat-run cooling technology in the dairy sector, according to a release here.
- After completion of visit we came back to BVM at 5:30 PM.

PICTURES OF VISIT :



AUTOMATION MACHINERY



DEMOUDLING OF CHOCOLATES



Mogar, Gujarat, India
NH-48, Mogar, Gujarat 388370, India
18/12/21 02:45 PM
Note : Captured by GPS Map Camera

AT AMUL CHOCOLATE FACTORY, MOGAR, ANAND (FRONT LAWN)



AT BVM FRONT GATE BEFORE DEPARTURE

STUDENT'S FEEDBACK AND CONCLUSION :

Educational Industrial visit to Amul, Anand, Gujarat. Both the site staff as well as guiding staff was very supportive to all the students.

We know that this visit will help us in our future practical and corporate life and brought a positive change in our thinking and practical behaviour regarding education and specially Engineering. We were not allowed pictures inside plant for security reasons.

In Overall observed Amul factory where one can see machineries at work and how Amul products are processed and packed. On the way to the factory, you are captivated by the sight of huge milk silo units which quickly become the best feature of our entire visit. We, the Students of BVM Electronics and Communication Engineering are extremely thankful to all coordinators.

Honorable Principal of BVM : Dr. I. N. Patel

HOD , EC Department : Dr. B C Goradiya

Staff Coordinators: (i) Prof. K R Patel (ii) Prof. M M Sevak

STUDENTS ATTENDANCE SHEET :

NAME	ID
Fafolawala Meet Rajendrakumar	21EC401
Vraj N. Patel	21EC403
Priya Nimeshkumar Bhavsar	21EC405
Aryan Darshankumar Shah	21EC406
Vatsal Mehulkumar Gandhi	21EC407
Veer Baxi	21EC410
Sheta Avi Rajeshbhai	21EC415
DHRUV MARATHE	21EC416
Bhavesh Lekhram Yadav	21EC419
Kankshit Bhatt	21EC420
Pranav Changela	21EC422
Vishwa Arya	21EC423
Dhruv Lalpurwala	21EC424
Yash Mehta	21EC425
Avinash pal	21EC427
Anusha Kar	21EC429
Vandan parekh	21EC430
Khokhar Nauman Husen	21EC431
Abizer Asif Popat	21EC432
Anghan Pal	21EC434
Anant Bhatia	21EC435
Vrushank j soni	21EC436
Rushita Bagthaliya	21EC440
Dihora dhruvit umeshbhai	21EC442
Parth Mehta	21EC443
Dhruv Dave	21EC444
Mishra Deepanshi RajeshKumar	21EC448
MISHRA AKANKSHA RAJESHKUMAR	21EC449
Dhwani Bambhaniya	21EC450
Tanishka	21EC451
Khushi Rangoonwala	21IT480
Prachi Mistry	21IT481
Khandewal Harsh	21EC446
Bhogesara Mayur	21EC437
Shalini Kotecha	20EC413
Amisha Sakhare	20EC402
Dhan Prajapati	20EC455

VISIT PERMISSION :



KAUSHAL PATEL <kaushal.patel@bvmengineering.ac.in>

Regarding confirmation of dairy visit at amul chocolate plant

PRO <pro@amuldairy.com>

Thu, Dec 9, 2021 at 11:29 AM

To: KAUSHAL PATEL <kaushal.patel@bvmengineering.ac.in>

Cc: ghanshyam.rathod@bvmengineering.ac.in, Mayur Sevak <mayur.sevak@bvmengineering.ac.in>, AA bhatt <aabhatt@amuldairy.com>, Maaz Vohara <maazvohara@amuldairy.com>

Dear Mr. Kaushal Patel,

No issues...You may visit our Chocolate plant, Mogar as per your booking on 18.12.2021

Thanks & Regards,

Public Relations Office
Amul Dairy, Anand - India
Pin Code-388001
Tel - +912692 225443
www.amuldairy.com



BIRLA VISWAKARMA MAHAVIDYALAYA
AN AUTONOMOUS ENGINEERING INSTITUTE

A REPORT ON
INDUSTRIAL VISIT TO
BSNL RTTC

AHMEDABAD

14th February, 2018

Organized by

Electronics & Communication Engineering Dept.

BVM Engineering College

An Autonomous Institution (managed by Charutar Vidya Mandal)

Vallabh Vidyanagar-388120

Sponsored by TEQIP-III

Summery Table:

Name of Industry/Organization Visited:	RTTC BSNL & ISRO		
Address of Industry/Organization Visited:	RTTC BSNL:Gota, Ahmedabad, ISRO : Jodhpur Tekra, AmbawadiVistar, Ahmedabad		
Information of Industry Person:	Name:	H. B. Sharma	
	Designation:	Engineer	
Contact Information of Industry Person:	Contact No:	Tel: 02717-241400	
	Email Id:	rttc Ahmedabad@bsnl.co.in	
Name of Principal of the Institute:	Dr.I.N.Patel		
Department Name of the Institute:	E.C. Department		
Name of Head of the Department:	Dr. B.C.Goradia		
Year/Semester of the Students	2 nd year		
Specific Subject under which visit organized:	Communication		
Professional body under which visit organized:	IE(I) electronics student branch (Gujarat Section)		
Date and Time of Departure:	07:00 A.M. , 14 th February.2018		
Date and Time of Arrival:	08:00 P.M. , 14 th February.2018		
No of Days for Visit:	01		
Accompanying Staff Name:	1	Prof. Parul Panchal	
	2	Prof. Mohan Khambhalkar	
	3	Prof. Ronak R. Vashi	
Contact information of Staff:	No	Contact No:	Email Id:
	1		
	2		
	3		
Mode of Travel:	Bus (ADIT, CVM)		
Total No of Students:	13 + 38(GIA)		
Accommodation Venue name and Address:	NA		

ACKNOWLEDGMENT

We would like to express our sincere thanks of gratitude to our **Head of Department Dr. B. C. Goradiya** for lending us the permission to visit **BSNL RTTC CENTER, AHMEDABAD.**

Also a great thanks to our guide **Prof. Ronak Vashi, Prof. Parul H.Panchal & Prof. Mohan M. Khambalkar** for exemplary guidance and monitoring of us and encouraging throughout the program.

We are also obliged to the staff members of RTTC for valuable information provided by them in respective field.





BSNL RTTC (REGIONAL TELECOM TRAINING CENTRE

Regional Telecom Training Centre (RTTC), Ahmedabad is one of the most valued training centers of BSNL. Providing quality training in the field of telecommunications, to its people as well as to the engineering students, professionals from other Government and private organizations.

We have a well-established infrastructure with highly equipped labs, classrooms and advanced teaching aids ably supported by expert trainers having a blend of extensive field as well as teaching experience.

The Institute is constantly making endeavors to provide customized as well as tailor made quality training to the outside agencies in the field of: Mobile Communication, Optical Fiber Communication, Computer Networking and IP Addressing, Broadband, Wi-Fi , WiMax etc. The Infrastructure, the dedicated faculty members makes education at RTTC Ahmedabad a pleasant and valuable experience.

AGENDA:

- ❖ **Starting Date & Time:** 14-02-2018 (8:30 AM)
- ❖ **Pick up point:** BVM Engineering College, Vallabh Vidyanagar
- ❖ **Venue& Place of Company:** RTTC Centre (BSNL), Gota, Ahmedabad
- ❖ **Duration:** 1Day
- ❖ **Faculty Members:** Prof. P.H.Panchal,
:Prof.M.M.Kambalkar
- ❖ **Total Number of Students:** 38
- ❖ **Organized By:** Dept. of Electronics Engineering
- ❖ **Department Places to visit:** BSNL RTTC , A'BAD

Important 6 laboratories that were visited by the students are listed below:

- FTTH(Fibber to the Home)
- Network Lab
- Broadband Lab
- OFC Lab (Optical Fiber Communication Lab)
- C-DOT Lab
- Telecom Museum

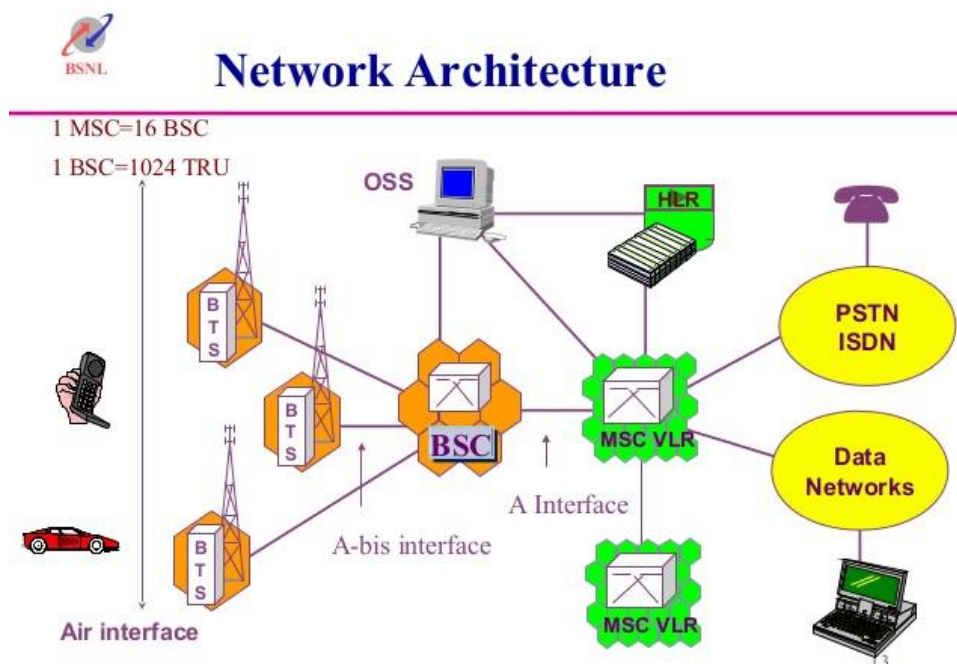
As per the planning of the institute the students were first served with the breakfast and after the refreshments they were divided into two groups, each group having a leader.

GSM BTS LABORATORY

We first entered network lab where we were introduced with a lecture on networks, there are two types of call data call & phone call. When we make any such of call we are connected with BTS(Base Transceiver-Station) where an antenna is connected it will receive our call and it can also transmit signals but here it will be received and on BTS there is an connectivity with BSC, MSC where our call is placed to outside world either phone or data.

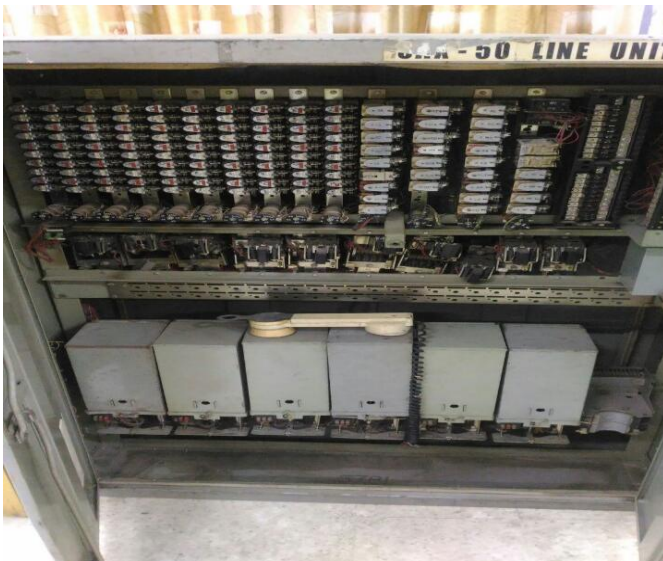
Professor further explained practically about BTS, BSC, MSC modules and its connectivity.

Here we also saw different types connections, the tower which we see in around us is basically a BTS which basically contains a base where it contains power supply and part of some network which is very costly and needs protection from atmosphere.



CDOT LABORATORY

After completing GSM BTS laboratory we entered to CDOT laboratory where we learned about the calls proceeding, the call data saved on a system all users are connected at one system where they are monitored with a CPU system and administrator afterwards the saved data per hour is transmitted to the data storage place for BSNL. Below we see photo of lab here we see that the rack has capacity of 1k users but in general up to 50k users can be used at the station. A CPU is also connected with the users to continuously monitor the users and data, it was processing on Intel Pentium where it works on Linux OS



NETWORK & BROADBAND LABORATORY

After completing CDOT lab we entered to network where we learned about NETWORKS like LAN, WAN etc.

Here we were explained how different banks are interconnected with each other by a leased line connection. Here professor gave an example of SBI bank how AHMEDABAD AND SURAT are interconnected with each other by a single leased line (hot line) no any interruption no distortion.

Here sir explained that at branch of AHMEDABAD a router is connected where WAN port of it is connected to router of SURAT branch with OFC (Optical Fiber Communication).

Here there was lab where each PC were interconnected by LAN. In WAN network for interconnection of two bank branches a module is used after router.



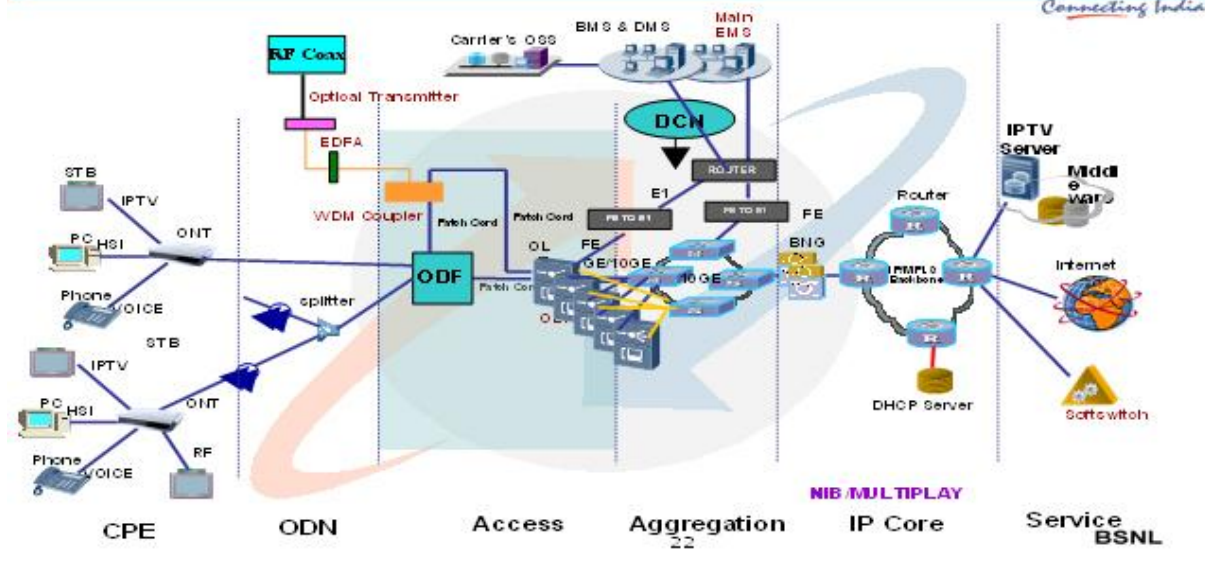
FTTH & OFC LABORATORY

Fiber to the Home (FTTH) is a unique technology being deployed by BSNL for the first time in India. The fiber connectivity having unlimited bandwidth and state of the art technology provides fix access platform to deliver the high speed broadband from 256 Kbps to 100 Mbps.

IPTV having different type of contents like HDTV and future coming 3D TV and range of voice telephony services. It provides a comprehensive solution for the IP leased line, internet, Closed User Group (CUG), MPLS-VPN, VoIP, video conferencing, video calls etc. whatever the services available on the internet platform, bandwidth on demand can be delivered by this connectivity to the without changing the access fiber and home device.

Customer will get a CPE called Home Optical Network Termination (HONT) consist of 4X100 Mbps Ethernet ports and 2 normal telephone ports. Each 100 Mbps ports will provide broadband, IPTVs, IP Video call and leased line etc. as required by the customers.

BSNL FTTH Architecture



BSNL MUSEUM

RTTC centre is having a museum where students can observe the transition in telephone history. In fact the transition can be seen from the antique telephones to mobile technology. Our guide at RTTC explained the transition of technology very well. We have seen the switching telephones used several years before also seen the telephones of now days. Some picture of Museum





CONCLUSION

The one day industrial tour to BSNL RTTC CENTRE was really a good and worthy experience. It had many advantages in developing our knowledge in the communication sector.

The main highlights of the visit were

- FTTH technology
- Fiber optics basics and communication procedure with fiber optics
- Broadband fundamentals and speed of communication depends on data packets
- Basic idea about router and other switching devices.
- Observed the transition in communication technology.

Program Co-ordinators

Prof. R. R. Vashi

Prof. P. H. Panchal

Prof. M. M. Khambalkar



BIRLA VISWAKARMA MAHAVIDYALAYA
AN AUTONOMOUS ENGINEERING INSTITUTE

A REPORT ON
INDUSTRIAL VISIT TO
BSNL RTTC

AHMEDABAD

14th February, 2018

Organized by

Electronics & Communication Engineering Dept.

BVM Engineering College

An Autonomous Institution (managed by Charutar Vidya Mandal)

Vallabh Vidyanagar-388120

Sponsored by TEQIP-III

Summery Table:

Name of Industry/Organization Visited:	RTTC BSNL & ISRO		
Address of Industry/Organization Visited:	RTTC BSNL:Gota, Ahmedabad, ISRO : Jodhpur Tekra, AmbawadiVistar, Ahmedabad		
Information of Industry Person:	Name:	H. B. Sharma	
	Designation:	Engineer	
Contact Information of Industry Person:	Contact No:	Tel: 02717-241400	
	Email Id:	rttc Ahmedabad@bsnl.co.in	
Name of Principal of the Institute:	Dr.I.N.Patel		
Department Name of the Institute:	E.C. Department		
Name of Head of the Department:	Dr. B.C.Goradia		
Year/Semester of the Students	2 nd year		
Specific Subject under which visit organized:	Communication		
Professional body under which visit organized:	IE(I) electronics student branch (Gujarat Section)		
Date and Time of Departure:	07:00 A.M. , 14 th February.2018		
Date and Time of Arrival:	08:00 P.M. , 14 th February.2018		
No of Days for Visit:	01		
Accompanying Staff Name:	1	Prof. Parul Panchal	
	2	Prof. Mohan Khambhalkar	
	3	Prof. Ronak R. Vashi	
Contact information of Staff:	No	Contact No:	Email Id:
	1		
	2		
	3		
Mode of Travel:	Bus (ADIT, CVM)		
Total No of Students:	13 + 38(GIA)		
Accommodation Venue name and Address:	NA		

ACKNOWLEDGMENT

We would like to express our sincere thanks of gratitude to our **Head of Department Dr. B. C. Goradiya** for lending us the permission to visit **BSNL RTTC CENTER, AHMEDABAD.**

Also a great thanks to our guide **Prof. Ronak Vashi, Prof. Parul H.Panchal & Prof. Mohan M. Khambalkar** for exemplary guidance and monitoring of us and encouraging throughout the program.

We are also obliged to the staff members of RTTC for valuable information provided by them in respective field.





BSNL RTTC (REGIONAL TELECOM TRAINING CENTRE

Regional Telecom Training Centre (RTTC), Ahmedabad is one of the most valued training centers of BSNL. Providing quality training in the field of telecommunications, to its people as well as to the engineering students, professionals from other Government and private organizations.

We have a well-established infrastructure with highly equipped labs, classrooms and advanced teaching aids ably supported by expert trainers having a blend of extensive field as well as teaching experience.

The Institute is constantly making endeavors to provide customized as well as tailor made quality training to the outside agencies in the field of: Mobile Communication, Optical Fiber Communication, Computer Networking and IP Addressing, Broadband, Wi-Fi , WiMax etc. The Infrastructure, the dedicated faculty members makes education at RTTC Ahmedabad a pleasant and valuable experience.

AGENDA:

- ❖ **Starting Date & Time:** 14-02-2018 (8:30 AM)
- ❖ **Pick up point:** BVM Engineering College, Vallabh Vidyanagar
- ❖ **Venue& Place of Company:** RTTC Centre (BSNL), Gota, Ahmedabad
- ❖ **Duration:** 1Day
- ❖ **Faculty Members:** Prof. P.H.Panchal,
:Prof.M.M.Kambalkar
- ❖ **Total Number of Students:** 38
- ❖ **Organized By:** Dept. of Electronics Engineering
- ❖ **Department Places to visit:** BSNL RTTC , A'BAD

Important 6 laboratories that were visited by the students are listed below:

- FTTH(Fibber to the Home)
- Network Lab
- Broadband Lab
- OFC Lab (Optical Fiber Communication Lab)
- C-DOT Lab
- Telecom Museum

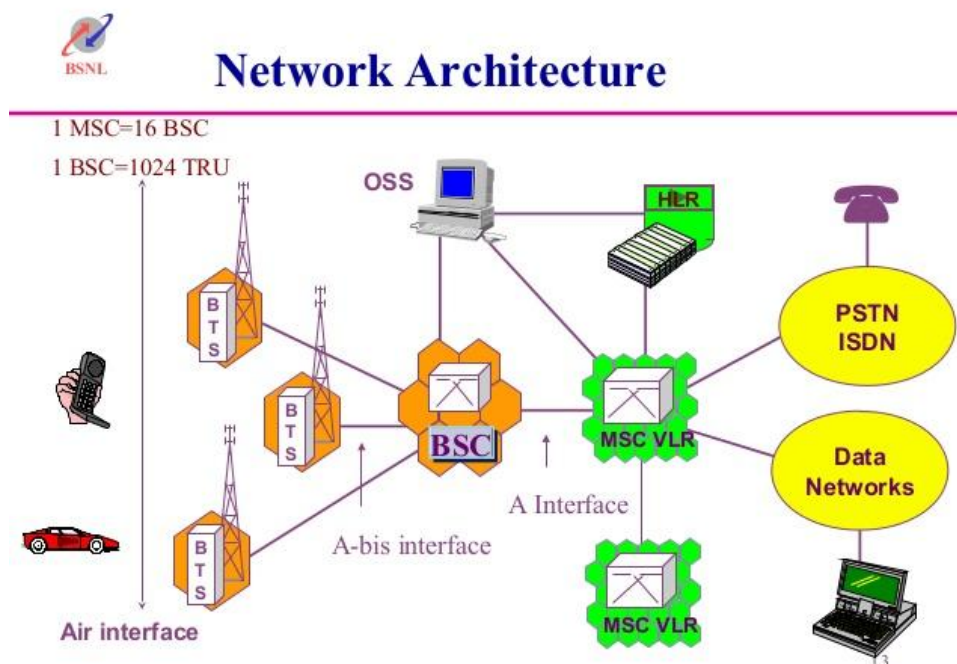
As per the planning of the institute the students were first served with the breakfast and after the refreshments they were divided into two groups, each group having a leader.

GSM BTS LABORATORY

We first entered network lab where we were introduced with a lecture on networks, there are two types of call data call & phone call. When we make any such of call we are connected with BTS(Base Transceiver-Station) where an antenna is connected it will receive our call and it can also transmit signals but here it will be received and on BTS there is an connectivity with BSC, MSC where our call is placed to outside world either phone or data.

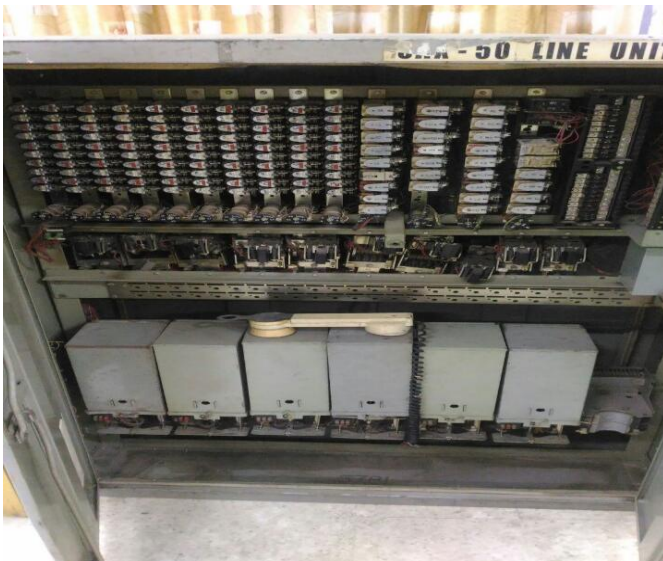
Professor further explained practically about BTS, BSC, MSC modules and its connectivity.

Here we also saw different types connections, the tower which we see in around us is basically a BTS which basically contains a base where it contains power supply and part of some network which is very costly and needs protection from atmosphere.



CDOT LABORATORY

After completing GSM BTS laboratory we entered to CDOT laboratory where we learned about the calls proceeding, the call data saved on a system all users are connected at one system where they are monitored with a CPU system and administrator afterwards the saved data per hour is transmitted to the data storage place for BSNL. Below we see photo of lab here we see that the rack has capacity of 1k users but in general up to 50k users can be used at the station. A CPU is also connected with the users to continuously monitor the users and data, it was processing on Intel Pentium where it works on Linux OS



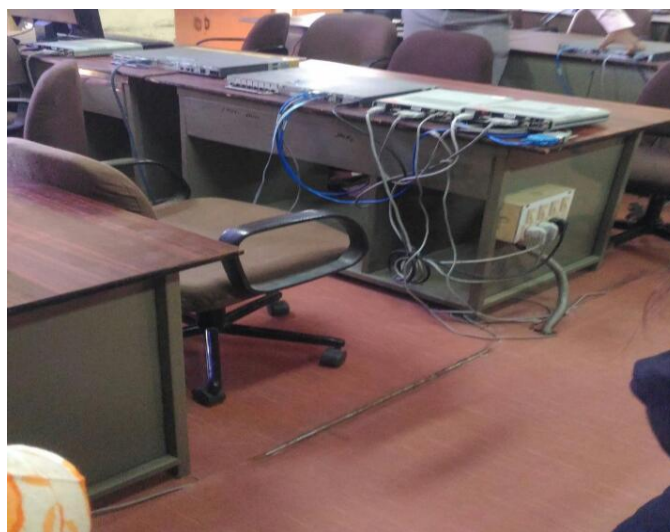
NETWORK & BROADBAND LABORATORY

After completing CDOT lab we entered to network where we learned about NETWORKS like LAN, WAN etc.

Here we were explained how different banks are interconnected with each other by a leased line connection. Here professor gave an example of SBI bank how AHMEDABAD AND SURAT are interconnected with each other by a single leased line (hot line) no any interruption no distortion.

Here sir explained that at branch of AHMEDABAD a router is connected where WAN port of it is connected to router of SURAT branch with OFC (Optical Fiber Communication).

Here there was lab where each PC were interconnected by LAN. In WAN network for interconnection of two bank branches a module is used after router.



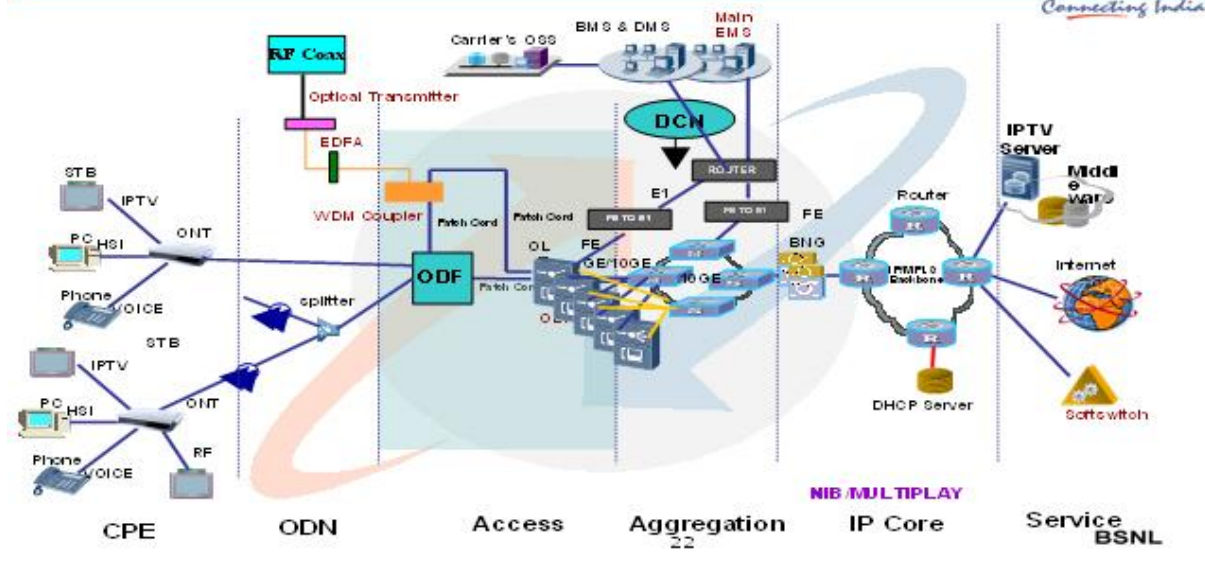
FTTH & OFC LABORATORY

Fiber to the Home (FTTH) is a unique technology being deployed by BSNL for the first time in India. The fiber connectivity having unlimited bandwidth and state of the art technology provides fix access platform to deliver the high speed broadband from 256 Kbps to 100 Mbps.

IPTV having different type of contents like HDTV and future coming 3D TV and range of voice telephony services. It provides a comprehensive solution for the IP leased line, internet, Closed User Group (CUG), MPLS-VPN, VoIP, video conferencing, video calls etc. whatever the services available on the internet platform, bandwidth on demand can be delivered by this connectivity to the without changing the access fiber and home device.

Customer will get a CPE called Home Optical Network Termination (HONT) consist of 4X100 Mbps Ethernet ports and 2 normal telephone ports. Each 100 Mbps ports will provide broadband, IPTVs, IP Video call and leased line etc. as required by the customers.

BSNL FTTH Architecture



BSNL MUSEUM

RTTC centre is having a museum where students can observe the transition in telephone history. In fact the transition can be seen from the antique telephones to mobile technology. Our guide at RTTC explained the transition of technology very well. We have seen the switching telephones used several years before also seen the telephones of now days. Some picture of Museum





CONCLUSION

The one day industrial tour to BSNL RTTC CENTRE was really a good and worthy experience. It had many advantages in developing our knowledge in the communication sector.

The main highlights of the visit were

- FTTH technology
- Fiber optics basics and communication procedure with fiber optics
- Broadband fundamentals and speed of communication depends on data packets
- Basic idea about router and other switching devices.
- Observed the transition in communication technology.

Program Co-ordinators

Prof. R. R. Vashi

Prof. P. H. Panchal

Prof. M. M. Khambalkar



Birla Vishvakarma Mahavidyalaya

Engineering College , Anand

(IEEE Student Branch)

INDUSTRIAL VISIT TO



BSNL Telecomm Exchange

29th February 2020

V.U.NAGAR, ANAND, GUJARAT

INDUSTRY PROFILE :

Company Name : BSNL

Type : Public

Specializations : Telecommunication Exchanges and Services

Founded : 2000

Headquarters : New Delhi

Website : www.bsnl.co.in

SUMMARY TABLE :

Title of the workshop :	Industrial Visit to BSNL, V.U.Nagar, Anand		
Name and Designation of Experts:	Name		Designation
	R K Paghdar		DE (RURAL)
	D B Shah		Junior Telecomm Officer, BSNL
Organization and Department of Experts:	Sr. No	Organization Name	Department
	1	BSNL Telecomm Exchange	Telecomm and Exchange
Contact Information of Experts:	Sr. No	Contact No	Email Id
	1	09400026832	
Name of Principal of the Institute:	Dr. Indrajit Patel		

Department Name of the Institute:	Electronics & Communication		
Name of Head of the Department:	Dr. Bhargav C. Goradiya		
Year/Semester of the Students	3 rd year students of EC		
Specific Subject under which Seminar organized:	Telecomm and Switching , Analog and Digital Communication		
Professional body under which seminar organized:	Dr. Darshan Dalwadi, IEEE Student Chapter, Gujarat Section & Electronics and Communication Engg Dept		
Date and Time of Seminar:	Date: 29/02/2020 Time: 10:00 AM to 11:30 AM		
Venue Name:	BSNL, V.U.Nagar, Anand		
No of Days for Seminar/workshop:	01		
Staff Coordinator's Name:	1	Prof. Arjun Bambhaniya	
	2	Prof. K R Patel	
Contact Information of Staff:	No	Contact No :	Email Id :
	1	9824627160	arjun.bambhaniya@bvmengineering.ac.in
	2	8980943264	kaushal.patel@bvmengineering.ac.in
Total No of Students:	13		
No. of Girls:	9		
No. of Boys:	4		

ABOUT BSNL:

Bharat Sanchar Nigam Limited (abbreviated **BSNL**) is an Indian state-owned telecommunications company headquartered in New Delhi. It was incorporated on 15 September 2000 and assumed the business of providing telecom services and network management from the erstwhile Central Government Departments of Telecom Services (DTS) and Telecom Operations (DTO) as of 1 October 2000 on a going-concern basis. It is the largest provider of fixed telephony and broadband services with more than 60% market share, and is the fourth largest mobile telephony provider in India. BSNL is India's oldest communication service provider and its history can be traced back to the **British era**. During the British era, the first telegraph line, was established between Calcutta and Diamond Harbour. The British East India Company started using the telegraph in 1851 and till 1854 telegraph lines were laid across the country. In 1854, the telegraph service was opened to the public and the first telegram was sent from Mumbai to Pune. In 1885, The Indian Telegraph Act was passed by the British Imperial Legislative Counsel. After the bifurcation of post and Telegraph department in 1980s, and with the creation of Department of Telecom by 1990s, eventually led to the emergence of the State owned telegraph and telephone company **BSNL**. BSNL then continued the telegraph services in India until it shut down telegraph services completely in July 15, 2013.



ABOUT INDUSTRIAL VISIT UNDER IEEE CHAPTER :

The industrial visit to BSNL was conducted on 29th February 2020. We departed at 9:45 am from the BVM College. There were 13 students (3rd Year) along with faculty members Prof. Kaushal Patel (EC Dept.) and Prof. Arjun Bambhaniya (EC Dept.) who has supported this industrial visit .

At around 10:30 Am the first session of General Introduction and the Briefing about the companies work was given by two of their engineers DB Shah and RK Paghdar.

They made us aware about Telecomm Exchange Techniques such as NGN system of exchange they work on and provide the necessary steps to design and verify the same functionality. The overall design flow about NGN and services were demonstrated by 11:00 Am.



At 11:05 am, a tour to their room of works was held where they had a setup of some sample models regarding their work with some equipment like their mainframes of NGN networks, FIBCOM Nokia equipment, BTS, etc.

The last session of the tour the question and answer session took place at 11:20 Am where students wonderfully asked many questions and cleared all their queries about the industry platform.





STUDENT'S FEEDBACK AND CONCLUSION:

Educational Industrial visit to BSNL, V.U.Nagar, Anand, Gujarat.

Both the site staff as well as guiding staff was very supportive to all the students.

We know that this visit will help us in our future practical and corporate life and brought a positive change in our thinking and practical behaviour regarding education and specially Engineering.

We, the Students of BVM Electronics and Communication Engineering are extremely thankful to

- **Honorable Principal of BVM :** Dr. I. N. Patel
- **HOD :** Dr. B. C. Goradiya

- **Staff Coordinators :** Prof. Kaushal Patel
Prof.A B Bambhaniya

- **IEEE Coordinator :** Dr. Darshan Dalwadi

- **IEEE Student Coordinator :** Yagnik Mehta

Event Coordinators : Arshit patel , Udit khichi

EC Engineering Department : We hope that this type of knowledge and experience enhancing industrial visits are organized in the future again and we are thankful for it.

STUDENT'S ATTENDANCE LIST:

Serial No.	NAME	ID NO.	Gender
1.	Aziz Suterwala	17EC439	M
2.	Udit khichi	17EC447	M
3.	Samir Barot	17EC442	M
4.	Ritvik singh chouhan	17EC435	M
5.	Sankalp kumar	17EC448	M
6.	Kushagra yadav	17EC423	M
7.	Deepansh jaiswal	17EC434	M
8.	Shreya mehta	17EC430	F
9.	Komal harsoda	17EC416	F
10.	Dhwani vora	17EC452	F
11.	Kruti manek	17EC460	F
12.	Harsh saraiya	17EC408	M
13.	Arshit patel	17EC432	M



BHARAT SANCHAR NIGAM LIMITED
(A Government of India Enterprise)
O/o THE DIVISIONAL ENGINEER (RURAL) V V NAGAR

To,

Date:- 02/03/2020

The Principal,

B.V.M Engineering College,

Vallabh Vidyanagar – 388120.

Respected Sir ,

This is to certify that we have provided one day Industrial Visit to your 13 students from Electronics & Communication Branch.

They have visited exchange on 29th February 2020, under supervision of your faculties Prof. Kaushal Patel & Prof A. B. Bhambhaniya.

We look forward to more visit from your end.

DIVISIONAL ENGINEER (RURAL)

D.E. (RURAL)
BSNL, V.V. NAGAR.

Place : BSNL , V U Nagar



Birla Vishvakarma Mahavidyalaya Engineering College ,Anand (IEEE Student Branch)

INDUSTRIAL VISIT TO



BSNL Telecomm Exchange

23rd February 2019

V.U.NAGAR, ANAND, GUJARAT

INDUSTRY PROFILE:

Company Name : BSNL

Type : Public

Specializations : Telecommunication Exchanges and Services

Founded : 2000

Headquarters : New Delhi

Key People : Shri Anupam Shrivastava (CEO)

Website : www.bsnl.co.in

SUMMARY TABLE:

Title of the workshop:	Industrial Visit to BSNL, V.U.Nagar, Anand		
Name and Designation of Experts:	Name	Designation	
	R K Paghdar	SDE Engineer, BSNL	
	D B Shah	Junior Telecomm Officer, BSNL	
Organization and Department of Experts:	Sr.No	Organization Name	Department
	1	BSNL Telecomm Exchange	Telecomm and Exchange
Contact Information of Experts:	Sr.No	Contact No	Email Id
	1	09400026832	=
Name of Principal of the Institute:	Dr. Indrajit Patel		
Department Name of the Institute:	Electronics & Communication		
Name of Head of the Department:	Dr. Bhargav C. Goradiya		
Year/Semester of the Students	3 rd year students of EC		
Specific Subject under which Seminar organized:	Telecomm and Switching, Analog and Digital Communication		
Professional body under which seminar organized:	Dr. Darshan Dalwadi, IEEE Student Chapter, Gujarat Section & Electronics and Communication Engg Dept		
Date and Time of Seminar:	Date: 23/02/2011 Time: 11:30AM to 2:00 PM		
Venue Name:	BSNL, V.U.Nagar, Anand		
No of Days for Seminar/workshop:	01		
Staff Coordinator's Name:	1	Dr. Darshan C Dalwadi	
	2	Prof. Kaushal Patel	
Contact Information of Staff:	No	Contact No:	Email Id:
	1	8160833427	darshan.dalwadi@bvmengineering.ac.in
	2	8980943264	kaushal.patel@bvmengineering.ac.in
Total No of Students:	20		
No. of Girls:	10		
No. of Boys:	10		

ABOUT BSNL:

Bharat Sanchar Nigam Limited (abbreviated **BSNL**) is an Indian state-owned telecommunications company headquartered in New Delhi. It was incorporated on 15 September 2000 and assumed the business of providing telecom services and network management from the erstwhile Central Government Departments of Telecom Services (DTS) and Telecom Operations (DTO) as of 1 October 2000 on a going-concern basis. It is the largest provider of fixed telephony and broadband services with more than 60% market share, and is the fourth largest mobile telephony provider in India. BSNL is India's oldest communication service provider and its history can be traced back to the **British era**. During the British era, the first telegraph line, was established between Calcutta and Diamond Harbour. The British East India Company started using the telegraph in 1851 and till 1854 telegraph lines were laid across the country. In 1854, the telegraph service was opened to the public and the first telegram was sent from Mumbai to Pune. In 1885, The Indian Telegraph Act was passed by the British Imperial Legislative Counsel. After the bifurcation of post and Telegraph department in 1980s, and with the creation of Department of Telecom by 1990s, eventually led to the emergence of the State owned telegraph and telephone company **BSNL**. BSNL then continued the telegraph services in India until it shut down telegraph services completely in July 15, 2013.



ABOUT INDUSTRIAL VISIT UNDER IEEE BRANCH CHAPTER :

The industrial visit to BSNL was conducted on 23rd February 2018. We departed at 11:30 am from the BVM College. There were 20 students (3rd Year) along with faculty members Prof. Kaushal Patel (EC Dept) who has supported this industrial visit .

At around 12:00 pm the first session of General Introduction and the Briefing about the companies work was given by two of their engineers DB Shah and RK Paghdar.

They made us aware about Telecomm Exchange Techniques such as NGN system of exchange they work on and provide the necessary steps to design and verify the same functionality. The overall design flow about NGN and services were demonstrated by 12:45 pm.

Around 1 pm a tour to their room of works was held where they had a setup of some sample models regarding their work with some equipments like their mainframes of NGN networks, FIBCOM Nokia equipments, BTS, etc

The last session of the tour the question and answer session took place at 1:15 pm where students wonderfully asked many questions and cleared all their queries about the industry platform.



STUDENT'S FEEDBACK AND CONCLUSION:

Educational Industrial visit to BSNL, V.U.Nagar, Anand, Gujarat.

Both the site staff as well as guiding staff was very supportive to all the students.

We know that this visit will help us in our future practical and corporate life and brought a positive change in our thinking and practical behaviour regarding education and specially Engineering.

We, the Students of BVM Electronics and Communication Engineering are extremely thankful to

- **Honorable Principal of BVM:** Dr. IN Patel
- **HOD (EC Dept) :** Dr.Bhargav Goradiya
- **Staff Coordinators :** Prof. Kaushal Patel
Dr. Darshan Dalwadi
- **IEEE Coordinator :** Dr. Darshan Dalwadi
- **IEEE Student Coordinators :** Ricardo Macwan
- **EC Engineering Department**

We hope that this type of knowledge and experience enhancing industrial visits are organized in the future again and we are thankful for it.

STUDENT'S ATTENDANCE LIST:

Sr No	Name	ID No.	Gender	Contact Number	Parents Contact Number	Email Id
1	Adit Vaidya	16ET404	Male	8866209975	9825594927	aditvaidya80@gmail.com
2	Simran Malhotra	16ET406	Female	9408053047	9429124445	simranmalhotra207@yahoo.com
3	Sakshi Jain	16ET410	Female	9904200967	9904203112	sjain.sakshi545@gmail.com
4	Parth Sheth	16ET412	Male	7359239365	9714038661	parthdsheth9199@gmail.com
5	Shreya jarsania	16ET414	Female	9662011073	7600790396	shreyajarsania8@gmail.com
6	Meet Patel	16ET419	Male	9904784911	9835987803	meet88623@gmail.com
7	Aayush patel	16ET426	Male	9737008311	9537370418	aayush9619@gmail.com
8	Dhruvin Parsana	16ET429	Male	9427515142	9624966971	dhruvinparsana8306@gmail.com
9	Devesh Bhadauria	16ET431	Male	9408621713	9426074156	bhadauriadevesh3@gmail.com
10	Upasana Chatterjee	16ET433	Female	9512520052	9328374106	upasana1498@gmail.com
11	Jain Dharmik	16ET436	Male	9104645348	7984122146	dharmikshah1999@gmail.com
12	Shivangi Chadotariya	16ET441	Female	9409603807	9409603807	shivangichadotariya@gamil.com
13	Atchaya D. Nadar	16ET444	Female	7819001199	8000068488	akshaya.nadar111@gmail.com
14	Sweta Gondaliya	16ET452	Female	8155804643	9978881213	swetagondaliya1368@gmail.com
15	Dhwani Agrawal	16ET457	Female	9104330026	9427664979	dhwanira123@gmail.com
16	Ricardo Macwan	16ET458	Male	7359878949	9924385989	ricardomacwan@gmail.com
17	Odedra Prakash	16ET460	Male	9737600682	9724715009	odedraprakash723@gmail.com
18	Khistareeya vanaraj lakhaman	16ET462	Male	9638418254	9726114697	khistariyavanraj99@gmail.com
19	Herry Makawana	16ET466	Male	9099327757	9825099986	herrymakawana@gmail.com
20	Banthia Punita	17EC601	Female	9726062544	9327983184	jainpunita9@gmail.com



BHARAT SANCHAR NIGAM LIMITED
(A GOVT. OF INDIA ENTERPRISE)

O/o SDE (SESS), V.V.NAGAR

Date : 23/02/2019

To,
The Principal,
BVM Engineering College,
V. V. Nagar -388120.

Respected Sir,

This is to certify that we have provided one day industrial Visit to your 20 students from Electronics and Communication branch.

They have visited our Exchange on 23rd February , 2019 under the Co-operation of your faculty member Prof. Kaushal Patel and Prof. Darshan Dalwadi.

Place : BSNL,
V U Nagar ,ANAND.

SDE(5ESS) 23/2/19,
V V Nagar.

BIRLA VISHVAKARMA MAHAVIDYALAYA [AN AUTONOMOUS INSTITUTION]
TECHNICAL VISIT DETAILS - ACADEMIC YEAR APRIL 2016 TO MARCH 2022
BRANCH : ELECTRONICS AND COMMUNICATION ENGINEERING

Sr. No	TECHNICAL VISIT PLACE	VISIT DATE	Number of Students	Sponsored Agency	VISIT Coordinator
1	Amul Chocolate Factory , Mogar , Anand	18/12/2021	38 (1 st Level)	-	Prof. K R Patel , Prof. M M Sevak
2	Smart City - Command and Control Centre ,Vadodara	01/10/2021	49 (2 nd Level)	SSIP	Prof. Ronak R. Vashi , Prof. Neha R. Patel
3	Zydus Hospital , Anand	26/03/2020	24 (4 th Level)	IEEE	Dr. Bhargav Goradiya, Dr.Darshan Dalwadi , Prof Ghansyam B Rathod
4	BSNL Telecomm Exchange , Anand	23/02/2020	13 (3 rd Level)	IEEE	Prof. Arjun Bambhaniya, Prof. K R Patel
5	BSNL Exchange , Anand	23/02/2019	20 (3 rd Level)	IEEE	Dr. Darshan C. Dalwadi, Prof. Kaushal R. Patel
7	e-Infochips Ltd , Ahmedabad	18/02/2019	48 (2 nd Level)	IEEE	Prof. Amit H. Choksi , Prof. Robinson P. Paul
8	Campus Radio Station ,Vallabh Vidyanagar	15/02/2019	15 (All branch –3 rd Level)	IEEE	Dr. Darshan C. Dalwadi, Prof. Mayur M. Sevak
9	Technical Visit to IIT Bombay	13/12/2018 to 17/12/2018	86 (1 st Level to 3 rd Level)	IEEE , TEQIP III & CVM	Dr. Darshan C. Dalwadi
10	Electronica and Productonica , Banglore	27/09/2018 to 29/09/2018	13 (4 th Level)	-	Prof. Anish A. Vahora Prof. Ronak R. Vashi
11	Aimtron Electronics Pvt. Ltd. ,Vadodara	17/03/2018	20 (3 rd Level)	-	Prof. Ronak R. Vashi , Prof. K. R. Patel

12	e-Infochips Ltd , Ahmedabad	09/03/2018	43 (2 nd Level)	IEEE	Prof. Amit H. Choksi Prof. Ronak R. Vashi
13	RTTC BSNL and ISRO , Ahmedabad	14/02/2018	51 (2 nd Level)	TEQIP-III	Prof. Parul Panchal ,Prof. Mohan Khambhalkar , Prof. Ronak R. Vashi
14	Vibrant Gujarat Global Summit, ghandhinagar	12/01/2017	36 (4 th Level)	TEQIP	Dr. Bhargav Goradiya, Prof. Robinson P. Paul
15	eInfochips and ISRO, Ahmedabad	05/10/2016	45 (3rd Level)	IEEE	Dr. Darshan Dalwadi Prof. Mayur Sevak Prof. Kaushal Patel
16	ZYDUS Hospital , ANAND	17/09/2016	43 (4 th Level)	-	Prof Ghansyam B Rathod , Prof. Robinson P. Paul
17	AMTECH Electronics India Limited, Ghandhinagar	06/09/2016	44 (2 nd Level)	IEEE	Mr. G. K. Sharma , Mr. Y. R. Prajapati

BIRLA VISHVAKARMA MAHAVIDYALAYA [AN AUTONOMOUS INSTITUTION]
TECHNICAL VISIT DETAILS - ACADEMIC YEAR APRIL 2016 TO MARCH 2022
BRANCH : ELECTRONICS AND COMMUNICATION ENGINEERING

Sr. No	TECHNICAL VISIT PLACE	VISIT DATE	Number of Students	Sponsored Agency	VISIT Coordinator
1	Amul Chocolate Factory , Mogar , Anand	18/12/2021	38 (1 st Level)	-	Prof. K R Patel , Prof. M M Sevak
2	Smart City - Command and Control Centre ,Vadodara	01/10/2021	49 (2 nd Level)	SSIP	Prof. Ronak R. Vashi , Prof. Neha R. Patel
3	Zydus Hospital , Anand	26/03/2020	24 (4 th Level)	IEEE	Dr. Bhargav Goradiya, Dr.Darshan Dalwadi , Prof Ghansyam B Rathod
4	BSNL Telecomm Exchange , Anand	23/02/2020	13 (3 rd Level)	IEEE	Prof. Arjun Bambhaniya, Prof. K R Patel
5	BSNL Exchange , Anand	23/02/2019	20 (3 rd Level)	IEEE	Dr. Darshan C. Dalwadi, Prof. Kaushal R. Patel
7	e-Infochips Ltd , Ahmedabad	18/02/2019	48 (2 nd Level)	IEEE	Prof. Amit H. Choksi , Prof. Robinson P. Paul
8	Campus Radio Station ,Vallabh Vidyanagar	15/02/2019	15 (All branch –3 rd Level)	IEEE	Dr. Darshan C. Dalwadi, Prof. Mayur M. Sevak
9	Technical Visit to IIT Bombay	13/12/2018 to 17/12/2018	86 (1 st Level to 3 rd Level)	IEEE , TEQIP III & CVM	Dr. Darshan C. Dalwadi
10	Electronica and Productonica , Bangalore	27/09/2018 to 29/09/2018	13 (4 th Level)	-	Prof. Anish A. Vahora Prof. Ronak R. Vashi
11	Aimtron Electronics Pvt. Ltd. ,Vadodara	17/03/2018	20 (3 rd Level)	-	Prof. Ronak R. Vashi , Prof. K. R. Patel

12	e-Infochips Ltd , Ahmedabad	09/03/2018	43 (2 nd Level)	IEEE	Prof. Amit H. Choksi Prof. Ronak R. Vashi
13	RTTC BSNL and ISRO , Ahmedabad	14/02/2018	51 (2 nd Level)	TEQIP-III	Prof. Parul Panchal ,Prof. Mohan Khambhalkar , Prof. Ronak R. Vashi
14	Vibrant Gujarat Global Summit, ghandhinagar	12/01/2017	36 (4 th Level)	TEQIP	Dr. Bhargav Goradiya, Prof. Robinson P. Paul
15	eInfochips and ISRO, Ahmedabad	05/10/2016	45 (3rd Level)	IEEE	Dr. Darshan Dalwadi Prof. Mayur Sevak Prof. Kaushal Patel
16	ZYDUS Hospital , ANAND	17/09/2016	43 (4 th Level)	-	Prof Ghansyam B Rathod , Prof. Robinson P. Paul
17	AMTECH Electronics India Limited, Ghandhinagar	06/09/2016	44 (2 nd Level)	IEEE	Mr. G. K. Sharma , Mr. Y. R. Prajapati



**A Report on
INDUSTRIAL VISIT
Sponsored by TEQIP-II
Organized By
Computer Engineering Department,
B.V.M. Engineering College**

Name of Company: Regional Telecom Training Center, Ahmedabad and ISRO, Ahmedabad.

Duration: 1 Day

Date of event: 25th October, 2018

Faculty Coordinator: Prof. K. J. Sharma, Dr. U. K. Jaliya

Lady Faculty: Ms. Arpita Sanghani and Ms. Dipa Soni

Student: Total 35 students of 3rd Year Computer Engineering Department

Regional Telecom Training Centre, Ahmedabad is one of the prime training centers of BSNL in the western region. The Centre is an ISO 9001:2008 Certified Institute. It was established in 1973 catering to the training needs in telecom sector. Telecommunication has emerged as one of the most rapidly advancing and expanding sector.





During this visit following labs conducted at RTTC.

(1) FTTH (Fiber to the Home)



(2) Network Lab



(3) Broadband Lab



(4) OFC Lab (Optical Fiber Communication Lab)



(6) Telecom Museum



(7) MSC (Mobile Switching Center)

(8) BSC (Base Station Controller), BTS (Base Transceiver Station)



(9) ISRO

The Indian Space Research Organization is the space agency of the Government of India headquartered in Bangalore and one branch is in Ahmedabad and we had visited it. Its vision is to "harness space technology for national development while pursuing space science research and planetary exploration. We visited ISRO exhibition, Ahmedabad. Attended a presentation and short film on Parallel instruction for spacecraft and missile.





Visit Outcome:

- Student got the practical knowledge of various technologies Like Broadband, IPBX, Wireless LAN, PSTN, Optical Fiber and Network, GSM Network.
- This practical knowledge is helpful in Computer Network subject.
- Students also visited ISRO which helped them visualize the working and mechanism of space and spacecraft and all.

Prof. K. J. Sharma

Dr. U. K. Jaliya

Dr. Dharshak Thakore
Professor and Head
Computer Engineering Department

REPORT

On

One Day Industrial Visit

To

**eINFOCHIPS,
TOPS Info-solutions Pvt. Ltd,
&
TOPS TECHNOLOGIES**

Organized by:

Computer Department, BVM Engineering College

Vallabh Vidhynagar

On 27th Feb 2019



**Birla Vishwakarma Mahavidyalaya College of
Engineering-V.V.Nagar**

Sponsored by:

TEQIP-III

NPIU

A Technical study tour to visit Einfochips and Tops Technologies, Ahmedabad has been organized on 27/02/2019 for the 3rd year students of the Computer Engineering Department of BVM Engineering College. The tour was organized after taking permission from Charutar Vidya Mandal and continuous guidance from Dr. Indrajit Patel, Principal and Dr. Darshak Thakore, Head, Computer Engineering Department. Total 41 students of 3rd year Computer Engineering discipline are benefited under care and guidance of Three Faculty members Prof. Kirtikumar J. Sharma, Prof. Pranay S. Patel, Ms. Arpita S. Sanghani and Network Administrator Mr. Ronak Patel.

Name of Company:

- 1) eInfochips, Address: 2, Aryan Park Complex Nr, Railway Crossing, Thaltej - Shilaj Rd, Thaltej, Ahmedabad, Gujarat 380054
- 2) TOPS Infosolutions Pvt. Ltd. 2nd Floor, Gujarat Bhavan, Opp MJ Library, Ellisbridge, Ashram Road, Ahmedabad, Gujarat 380006
- 3) TOPS Technologies, 905 Samedh Complex CG Road Near Panchwati Char Rasta Btwn Associated Petrol Pump and Maradia Plaza Nr GLS Ahmedabad, Gujarat 380006

Duration: 1 Day, 07 A.M to 08.30 PM

Date of event: 27th February, 2019

Faculty Coordinator: Prof. K. J. Sharma, Prof. Pranay S Patel

Lady Faculty: Ms. Arpita Sanghani

Students: Total 41 students of 3rd Year Computer Engineering Department

The visit details is as follows:

Sr. No.	Time	Details
1	07:45 am	All students and Faculty members reported at College main gate.
2	08:00 am	Departure from College by Bus provided by CVM via National Highway
3	10:00 am	Reached Einfochip, Shilaj, Ahmedabad
4	10:00 am - 10:30 am	Snacks at nearby hotel
5	10:30 - 11:15 am	Company Introduction by Einfochip employee Ms Isha Dave
6	11:15 am - 01:00 pm	Visit to Einfochip Experience Center, where different products of the company are showcased.

7	01:00 pm - 02:00 pm	Lunch hosted by Einfochip at Cafeteria
8	02:00 pm - 02:30 pm	Post-lunch session for Q&A with students
9	02:30 pm	Departed from Einfochip to visit Tops Infosolutions
10	03:30 pm	Reached Tops Infosolutions, Near M J Library, Ellis Bridge
11	03:30 - pm 05:00 pm	Company Introduction, In-detail talk about SDLC, different posts in IT company, functioning of IT company, development centre visit by Head of Marketing Department
12	05:00 pm	Headed towards Tops Technologies
13	05:30 - pm 06:15 pm	Refreshments along with Seminar on Game Development using Unity
14	06:15 pm	Departed from Tops Technologies to visit Swaminarayan Temple, Vadtal
15	07:30 pm	Reached Vadtal
16	07:30 - pm 08:30 pm	Temple Darshan and Dinner
17	08:30 pm	Departure from Vadtal
18	09:00 pm	Reached college

eINFOCHIPS, Ahmedabad

eInfochips, an Arrow company, is a leading global provider of product engineering and semiconductor design services. With over 500+ products developed and 40M deployments in 140 countries, eInfochips continues to fuel technological innovations in multiple verticals. The company's service offerings include digital transformation and connected IoT solutions across various cloud platforms, including AWS and Azure.

Along with Arrow's \$27B in revenues, 19,000 employees, and 345 locations serving over 80 countries, eInfochips is primed to accelerate connected products innovation for 150,000+ global clients. eInfochips acts as a catalyst to Arrow's Sensor-to-Sunset initiative and offers complete edge-to-cloud capabilities for its clients through Arrow Connect.

At eInfochips, the students were initially given a brief presentation about the company and its work in various technological fields. It was followed by a project expo showing various projects that the company had worked on during the past years. Some of the projects are listed below:

- ☐ Medical Vendor Machine
- ☐ AR glasses for bikers
- ☐ An android-based entertainment system for airplanes
- ☐ Home security

- Holographic display
- Semiconductor chips

The expo was followed by a lunch and then students were given information regarding how projects were executed by the company and were asked about the future projects that they would like to work upon.



Image 1: E-INFOCHIPS, AHMEDABAD



Image 2: E-INFOCHIPS Seminar Hall, AHMEDABAD

TOPS Technologies & TOPS Infosolutions Pvt. Ltd.

TOPS where

T stands for Training

O stands for Outsourcing

P stands for Placement

S stands for Study Abroad

TOPS Technologies is one of the largest IT Training, Outsourcing and Placement Service provider. TOPS offer a wide array of solutions customized for a range of key verticals and horizontals in the IT industry, through our **multiple offices located in Ahmedabad, Vadodara, Rajkot, Surat, Navsari, Mehsana, Junagadh, Indore, Bhopal, Jabalpur, Noida, Kota, Jaipur, Nagpur, Dehradun in India and sales offices in Chicago, IL and Mountain View, CA in USA.**

The students were shown the real-life application of SDLC and were made aware of the different teams that are engaged in developing software. Information about the different fields available as a career option after completing their studies was given. It was followed by a visit to their company where description about one of their project, GINGER was given and with respect to that different teams and their work during the project phase was illustrated. Then the students were taken to one of their offices where a presentation on **Game Development using UNITY** was given. It was followed by a brief intro of the company and some highlights of its work and the various courses offered at the institute were given.



Image 3: TOPS Technologies, AHMEDABAD



Image 4: TOPS Technologies, AHMEDABAD



Image 5: Faculties at einfochip

- **Outcome of Visit**

- ☐ Overall, the visit gave insights into how corporate companies work, the types of projects that are worked upon and the types of people involved with them.
- ☐ It also provided the students clarity about the requirements of different designations in a company.
- ☐ The visit proved to be very resourceful for the students and also helped them in understanding the real-life application of Software Engineering.

Prof. K. J. Sharma, Prof. Pranay S Patel Ms. Arpita Sanghani
Faculty Coordinators

Dr. D. G. Thakore
**Head and Professor
 Computer Engineering
 Department**



**A Report on
INDUSTRIAL VISIT
Sponsored by TEQIP-II
Organized By
Computer Engineering Department,
B.V.M. Engineering College**

Name of Company: Regional Telecom Training Center, Ahmedabad and Parallel Processing Laboratory of P.R.L., Ahmedabad.

Duration: 1 Day

Date of event: 21st March, 2016

Faculty Coordinator: Prof. P. B. Swadas, Dr. N.M. Patel

Lady Faculty: Ms. Nirali Patel

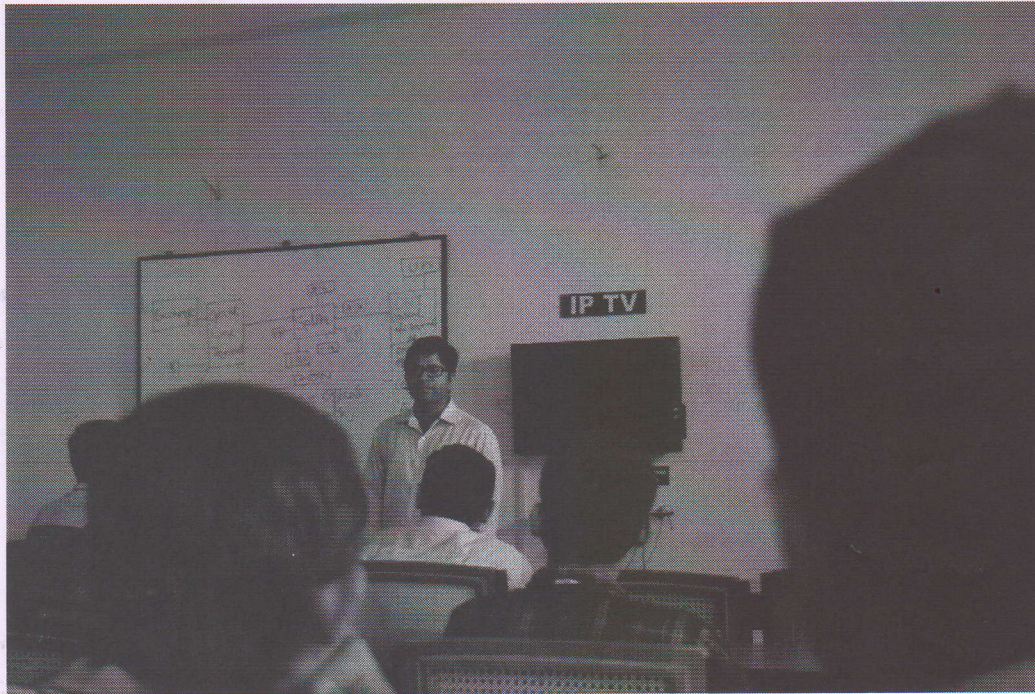
Student: Total 38 students of 2nd Year Computer Engineering Department

Regional Telecom Training Centre, Ahmedabad is one of the prime training centers of BSNL in the western region. The Centre is an ISO 9001:2008 Certified Institute. It was established in 1973 catering to the training needs in telecom sector. Telecommunication has emerged as one of the most rapidly advancing and expanding sector.



During this visit following labs conducted at RTTC.

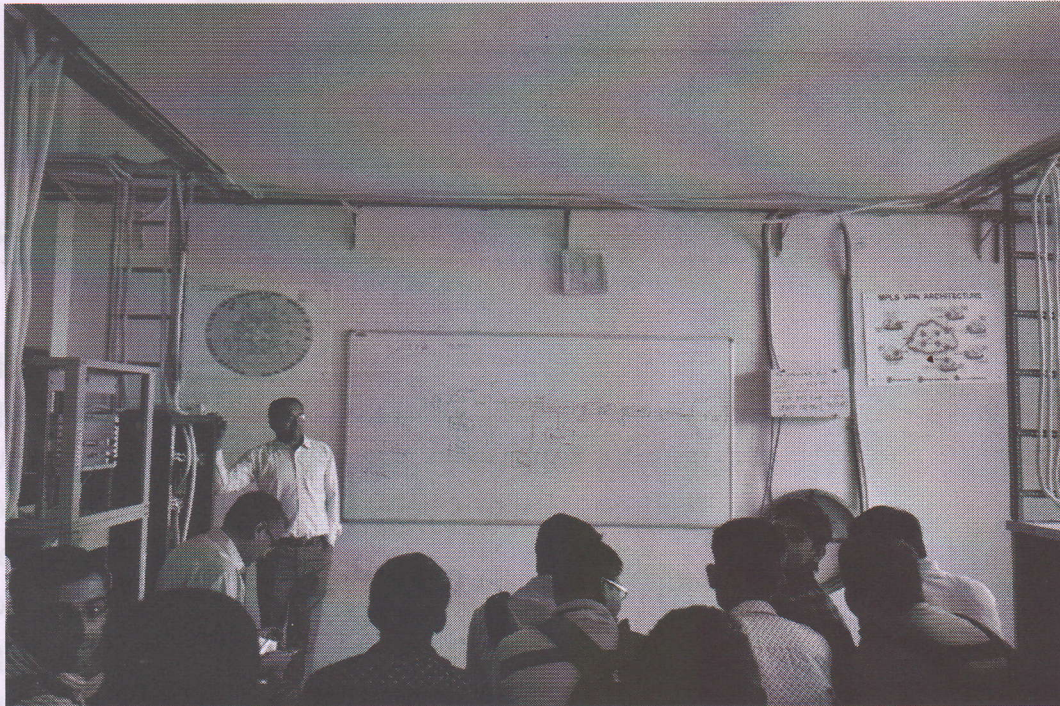
(1) FTTH (Fiber to the Home)



(2) Network Lab



(3) Broadband Lab



(4) OFC Lab (Optical Fiber Communication Lab)

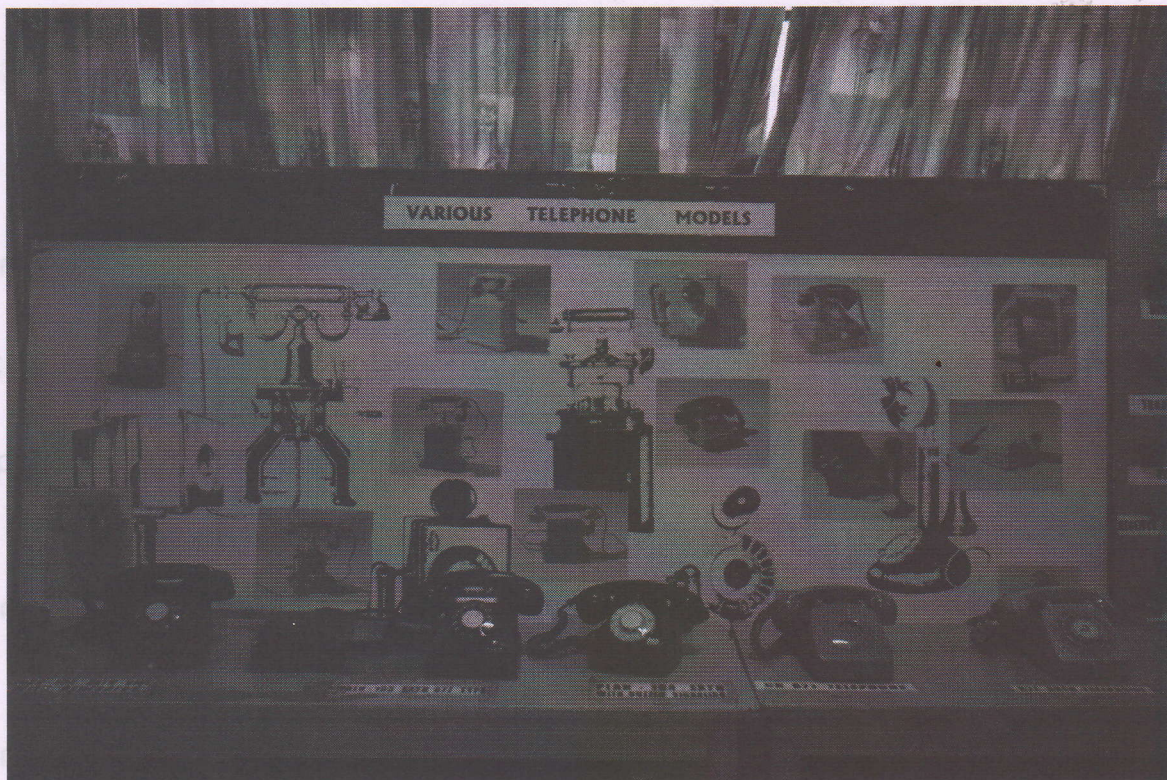


Program:

Aim: Write a program in VB exploring various object oriented features.

Practical 8

(6) Telecom Museum



(7) MSC (Mobile Switching Center)



(8) BSC (Base Station Controller), BTS (Base Transceiver Station)



(9) Physical Research Laboratory

Visited the Parallel Processing Laboratory of P.R.L., attended a presentation was given on Parallel Computing in Auditorium and saw the supercomputer of P.R.L. named Vikrant 100.



Outcome:

- Student got the practical knowledge of various technologies Like Broadband, IPBX, Wireless LAN, PSTN, Optical Fiber and Network, GSM Network.
- This practical knowledge helpful in Computer Network subject.
- Students also visited P.R.L. which helped them visualize the scientific research process and got overview on high performance computing.

Prof. P. B. Swadas

Dr. N.M. Patel



**A Report on
INDUSTRIAL VISIT
Sponsored by TEQIP-II
Organized By
Computer Engineering Department**



Name of Company: Regional Telecom Training Center, Ahmedabad

Duration: 1Day

Date of event: 16th Feb, 2016

Faculty Coordinator: Prof Bhavesh Tanawala, Prof. Kirti Sharma

Lady Faculty: Ms. Khusbu Panchal

Student: Total 61 students of 3rd Year Computer Engineering Department

Regional Telecom Training Centre, Ahmedabad is one of the prime training centers of BSNL in the western region. The Centre is an ISO 9001:2008 Certified Institute. It was established in 1973 catering to the training needs in telecom sector. Telecommunication has emerged as one of the most rapidly advancing and expanding sector.



During this visit following labs conducted at RTTC.

(1) FTTH (Fiber to the Home) & (2) Network Lab



(3) Broadband Lab



**(4) OFC Lab (Optical Fiber Communication Lab) &
(5) C-DOT Lab**



(6) Telecom Museum





(7) MSC (Mobile Switching Center) &
(8) BSC (Base Station Controller), BTS (Base Transceiver Station)

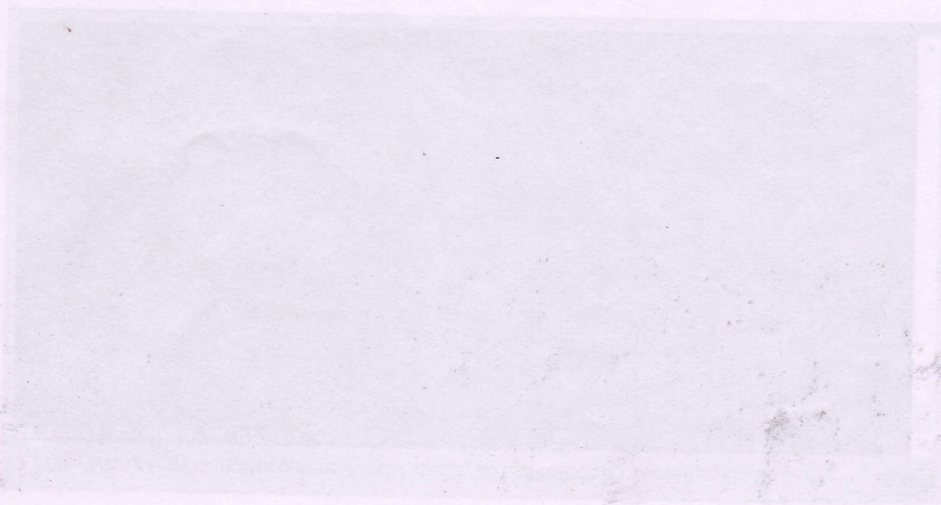


Outcome:

- Student got the practical knowledge of various technologies Like Broadband, IPBX, Wireless LAN, PSTN, Optical Fiber and Network, GSM Network.
- This practical knowledge helpful in Computer Network subject.

Prof Bhavesh Tanawala

Prof Kirti Sharma



Output:

End Module

End Sub

Console.WriteLine()

Console.WriteLine("My First Program in VB.NET")

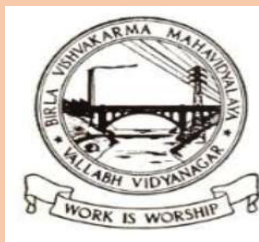
Sub main()

Module Module1

Program:

Aim: Create a simple VB console application with IDE

Practical 5



**A Report on
INDUSTRIAL VISIT
Sponsored by TEQIP-II
Organized By
Computer Engineering Department,
B.V.M. Engineering College**

Name of Company: Regional Telecom Training Center, Ahmedabad
And ISRO, Ahmedabad.

Duration: 1 Day

Date of event: 24st November, 2016

Faculty Coordinators: Dr. N.M. Patel, Prof. K J Sharma

Lady Faculty: Prof. M J Joshi

Student: Total 61 students of 2nd Year Computer Engineering Department

Outcome: Regional Telecom Training Centre, Ahmedabad is one of the prime training centers of BSNL in the western region. The Centre is an ISO 9001:2008 Certified Institute. It was established in 1973 catering to the training needs in telecom sector. Telecommunication has emerged as one of the most rapidly advancing and expanding sector.

- Student got the practical knowledge of various technologies Like Broadband, IPBX, Wireless LAN, PSTN, Optical Fiber and Network, GSM Network.
- This practical knowledge helpful in Computer Network subject.
- Students also visited ISRO which helped them visualize the scientific research process and got overview on space technology.

Detail report

On December 24th of 2016, the students of the class of CP'19, under the guidance of the Prof. N. M. Patel and Prof. K. J Sharma, organized a One Day Industrial visit covering places around Ahmedabad and Gandhinagar.

The bus left the BVM campus at 07:20 with spirits soaring higher than the sun. On route the RTTC – BSNL the bus caravan halted for a few minutes at the Vaishnavdevi Temple at 09:30. The students had a good time stretching their muscles a going through the cave-like forms at the temple while they seeked blessings from The Almighty. The engines revved over the temple at 09:50.

The group reached its first destination – Regional Telecom Training Centre, BSNL just before 11:00. The students and the faculty members joined the staffers at the RTTC in morning prayers in the main reception area. Shortly after that the sixty students were divided into three groups of twenty so that it would be easier for the experts to show the students the delicate and costly electronic machinery and easier for the students to grasp. The officials from the RTTC showed the students seven different labs:

GSM lab

-Where the students were introduced to the basic skeleton of the GSM network constructed by BSNL. They were also shown the BTS and the antenna and were made familiar to the parts and functions of these modules.

C- DOT lab

-The students were shown the machineries which were developed, designed (in and for) and manufactured in India!

FTTH lab

-Students were introduced and made familiar to the plans and execution of BSNL's Fibre to the Home project.

Museum

-The students were told the story of telecom: from the first Morse-Codes to the STD-PCOs. Valuable, antique pieces from the history of this glorious industry were on display.

Data Lab

-Here, the students were introduced to the various layer 1, 2 and 3 devices viz. Bus, Switch and Routers. They were also familiarised with Routing algorithms.

Broadband lab

-Students were familiarised with the concept of Broadband and the skeleton that BSNL has built in India over the past decades.

OFC lab

-Different concepts relating to Optical Fibre technology were discussed. Different techniques that are incorporated to protect the underground cables and to make the suspended cables lighter were also discussed. The students were shown the machine that is used for fusing two ends of optical fibres together.



After having feasted on knowledge, the group took lunch in the RTTC canteen itself. They took the group photographs and left for ISRO's Vikram Sarabhai Space Exhibition. As soon as the bus docked at ISRO, the students were intrigued about the 1:3 sized model of ISRO's latest rocket: GSLV Mk. III, next to which was ISRO's indigenously developed VIKAS cryogenic engine.

The group was first led into the indoor theatre facility at the exhibition Centre where the Centre In-charge interacted with the students, telling them interesting stories about the origins and current working of the great organization that ISRO is. The students were shown 3D and 2D movies in the theatre. After that, the group started towards the exhibits that covered almost all aspects of the ISRO missions. The students were first made familiar with the term *satellite*, its control and disposing. Some striking ideas were exchanged throughout the tour. The students were then shown the working of ISRO's own navigational system: the IRNSS.

The boys and girls were shown the working and conceptualizations of the *Chandrayaan I*, *Chandrayaan II*, and the *Mangalyaan* a.k.a Mars Orbiter Mission. The different payloads and their functionalities were discussed. Some of the payloads which were designed in the research centre at Ahmedabad were discussed in much more detail! The students were shown pictures of India's research facility in Antarctica: *Maitri*. The volunteers also explained to the students, in detail, about the flight trajectories and mechanisms of the PSLV and GSLV rockets. The volunteers aptly solved all the doubts fired at them by the curious students.



The group was to leave the premises before 17:00 but it seemed there was no force in the cosmos that could have driven those minds burning with curiosity to leave before all their questions were answered. Even the volunteers who were excited to have received such an enthusiastic lot went an extra mile and explained all the technicalities beyond their hours of duty without so much of an expression of boredom on their face. Finally, the group took a few more photographs and began their sail homewards bidding goodbye to all the amazing people they had met.

Industry Visit Coordinators:

Dr. N.M. Patel

Prof. K. J. Sharma

Prof. M. J. Joshi



IEEE

**A Report
On
Technical Visit
at**



“E-infochips”

on

Date: 09/03/2018

By

2nd Year EC Department

Students of

BVM Engineering College

(Affiliated to Gujarat Technological University)

(An Autonomous CVM Institution)



- **Summary Table**

Name of Industry/Organization Visited:	E-infochips Ltd.		
Address of Industry/Organization Visited:	11/A-B, Chandra Colony, Off C.G. Road, Ahmadabad, Gujarat		
Information of Industry Person:	Name:	Nilesh Ranpura	
	Designation:	Delivery Manager	
	Department:	ASIC	
Contact Information of Industry Person:	Contact No:	Tel: +91 (79) 39330000 Mob: (+91) 987- 926-1139	
	Email Id:	nilesh.ranpura@einfochips.com	
Name of Principal of the Institute:	Dr. I. N. Patel		
Department Name of the Institute:	Electronics & Communication Department		
Name of Head of the Department:	Dr. B. C. Goradiya		
Year/Semester of the Students	2 nd year		
Specific Subject under which visit organized:	ASIC design, VLSI		
Professional body under which visit organized:	IEEE student branch (Gujarat Section)		
Date and Time of Departure:	09:00 A.M. , 09 th March.2018		
Date and Time of Arrival:	06:00 P.M. , 09 th March.2018		
No of Days for Visit:	01		
Accompanying Staff Name:	1	Prof. Amit H. Choksi	
	2	Prof. Ronak R. Vashi	
	3		
Contact information of Staff:	No	Contact No:	Email Id:
	1	9723786348	amit.choksi@bvmengineering.ac.in
	2	9426724335	ronak.vashi@bvmengineering.ac.in
	3		
Mode of Travel:	Bus (ADIT, CVM)		
No of Boys Students:	31		
No of Girls Students:	12		
Total No of Students:	43		
Accommodation Venue name and Address:	NA		

- **ABOUT E-Infochips Ltd:**

E-Infochips, an Arrow company, is a leading global provider of product engineering and semiconductor design services. With over 500+ products developed and 40M deployments in 140 countries, E-Infochips continues to fuel technological innovations in multiple verticals. The company's service offerings include digital transformation and connected IoT solutions across various cloud platforms, including AWS and Azure.

Along with Arrow's \$27B in revenues, 19,000 employees, and 345 locations serving over 80 countries, E-Infochips is primed to accelerate connected products innovation for 150,000+ global clients. E-Infochips acts as a catalyst to Arrow's Sensor-to-Sunset initiative and offers complete edge-to-cloud capabilities for its clients through Arrow Connect.

The company provides a range of products and services spanning multiple industries including semiconductors, aerospace and defense, medical devices, robotics, industrial automation, e-commerce, automotive infotainment, video surveillance and connected homes.

The company has developed its niche for several product companies and hi-tech firms such as Qualcomm, Toshiba , Kroger , Texas Instruments , Saran ,Rockwell Collins , etc to name a few.



The industrial visit to E-Infochips was conducted on 9th March 2018. We departed at 7:30 in the morning from the BVM College in the CVM bus. There were 44 students (2nd Year) along with

two faculty members Prof. Amit Choksi (EC Dept) and Prof. Ronak Vashi (EC Dept) who had supported this industrial visit.



The bus reached Ahmadabad at around 10 am and the students were provided with refreshments to cheer up the upcoming visit.

At around 10:30 am the first session of General Introduction and the Briefing about the companies work was given by two of their Engineers.



Around 1 pm a tour to their room of works was held where they had a setup of some sample models and some videos regarding their work with some well known companies like Kroger, Saran , Rockwell and Collins ,etc in the field of aerospace and defense, home automation, IoT, ASIC , Medical devices, video surveillance and much more.



At the end our two faculties were given away a memento of memory by E-Infochips.

- **IEEE Coordinator :** **Prof. Darshan Dalwadi**
- **IEEE Student Coordinators :** **Drupad Pandya**
Shaivil Patel
Yogesh Iyer
Chinmay Raval

Sr No	Name	ID No.	Gender	Contact Number	Parents Contact Number	Email Id
1	Badal Patel	15ET002	Male	7383148203	9925254277	badalhpatel151197@gmail.com
2	Avi Patel	16ET401	Male	9409081160	8238059723	avipatel2013@gmail.com
3	Saudarya Jain	16ET403	Female	7490033692	7600695809	jainsaudarya22@gmail.com
4	Adit Vaidya	16ET404	Male	8866209975	9825594927	aditvaidya80@gmail.com
5	Simran Malhotra	16ET406	Female	9408053047	9429124445	simranmalhotra207@yahoo.com
6	Lav Hinsu	16ET408	Male	9824390810	9825537051	hinsulav105@gmail.com
7	Mrudang Oza	16ET409	Male	8469990274	9409076437	mrudangoza24@gmail.com
8	Sakshi Jain	16ET410	Female	9904200967	9904203112	sjain.sakshi545@gmail.com
9	Shruti jain	16ET411	Female	9558407078	9996016304	jainshruti1259@gmail.com
10	Parth Sheth	16ET412	Male	7359239365	9714038661	parthdsheth9199@gmail.com
11	Nirmal Patel	16ET413	Male	9974314504	9429146060	nirmalpatel6499@gmail.com
12	Shreya jarsania	16ET414	Female	9662011073	7600790396	shreyajarsania8@gmail.com
13	Aditya Nair	16ET416	Male	8347249311	8861380983	adityanair11121997@gmail.com
14	Gautam Vivekanandan	16ET417	Male	8758192989	9408955101	gautamv0511@gmail.com
15	Aniket Adak	16ET418	Male	8780552358	9825983459	aniketadak148@gmail.com
16	Meet Patel	16ET419	Male	9904784911	9835987803	meet88623@gmail.com
17	Muskan Gupta	16ET421	Female	8000656014	9825806739	muskangupta0998@gmail.com
18	Jal Joshi	16ET422	Male	9016821661	9428342818	jaljoshi36@gmail.com
19	Jay Gadhavi	16ET425	Male	9725027726	9428488776	jay48gadhavi@gmail.com
20	Aayush patel	16ET426	Male	9737008311	9537370418	aayush9619@gmail.com
21	Rushabh Mangukiya	16ET427	Male	8000925538	9879986081	rushabhmangukiya@gmail.com
22	Jenish Radadiya	16ET428	Male	8866517259	9374553569	jenishradadiya80031@gmail.com
23	Dhruvin Parsana	16ET429	Male	9427515142	9624966971	dhruvinparsana8306@gmail.com
24	Devesh Bhadauria	16ET431	Male	9408621713	9426074156	bhadauriadevesh3@gmail.com
25	Upasana Chatterjee	16ET433	Female	9512520052	9328374106	upasana1498@gmail.com
26	Jain Dharmik	16ET436	Male	9104645348	7984122146	dharmikshah1999@gmail.com
27	kartik maheshbhai modi	16ET438	Male	7405733578	9824785207	kartikmodi38@gmail.com
28	Akshar Patel	16ET440	Male	9327932117	7600164500	akshar6058@gmail.com
29	Atchaya D. Nadar	16ET444	Female	7819001199	8000068488	akshaya.nadar111@gmail.com
30	Ashish Dubey	16ET447	Male	9726009495	9909219159	ashish.dubey.9005@gmail.com
31	Jinish Shah	16ET449	Male	9409402209	9428076130	jinishshah15@gmail.com
32	Abhishek Pattanaik	16ET451	Male	8469822358	7202964899	pattanaik_abhishek@yahoo.co.in
33	Sweta Gondaliya	16ET452	Female	8155804643	9978881213	swetagondaliya1368@gmail.com
34	Soham joshi	16ET455	Male	9825173355	9825756060	jsoham592@gmail.com
35	Inderjeet Singh sehra	16ET456	Male	9824268094	9427074406	inderjeetsehra81@gmail.com
36	Dhwani Agrawal	16ET457	Female	9104330026	9427664979	dhwanira123@gmail.com
37	Ricardo Macwan	16ET458	Male	7359878949	9924385989	ricardomacwan@gmail.com
38	Odedra Prakash	16ET460	Male	9737600682	9724715009	odedraprakash723@gmail.com
39	Khistareeya vanaraj lakhaman	16ET462	Male	9638418254	9726114697	khistariyavanraj99@gmail.com
40	Herry Makawana	16ET466	Male	9099327757	9825099986	herrymakawana@gmail.com
41	Banthia punita	17EC601	Female	9726062544	9327983184	jainpunita9@gmail.com
42	Samarth bansal	17EC701	Male	9687430669	9687910148	samarthbansal15@gmail.com
43	Maheshvari Parmar	16ET469	Female	7046093078	9904829366	maheshvari83@gmail.com

- **Confirmation letter by E-infochip Ltd**

Nilesh Ranpura

to me ▾

Hi Amit

Happy Holi.

Yes 9th March is confirmed.

Please reach here by 10:00am. It is must.

Schedule :

1. 10:00am to 11:00am technology capsule
2. 11:00am to 12:30pm Experience zone/product demo
3. 1:00PM to 2pm Lunch
4. 2pm-3pm - Queries

Nilesh Ranpura

Delivery Manager | ASIC



Tel: +91 (79) 39330000 | Mob: (+91) 987- 926-1139

Semiconductor Services

Software | Embedded | Semiconductor

Frost & Sullivan Company of the Year 2013-14

Undertaking Letter - Faculty

We here-by undertake that the Industrial Visit/Cultural Visit/ Field Trip/Study Tour/Out bound Training is purely academic related and at any case.

We shall undertake full responsibility of the student's actions and behavior at all times during the course of Industrial Visit/Cultural Visit/ Field Trip/Study Tour/Out bound Training. We further undertake not to breach the safety guidelines of the BVM Engineering College at any cost.

Sr.No	Name	Department Name	Signature
1.	Prof. Amit H. Choksi	EC	
2.	Prof. Ronak R. Vashi	EC	

- **Students' Feedback & Conclusion:**

Educational Industrial visit to E-Infochips Ltd, Ahmedabad, and Gujarat was done gainful. Both the side teaching staff as well as guiding staff was very supportive to all the students. Students know that this visit will help us in our future practical and corporate life and brought a positive change in our thinking and practical behavior regarding education and specially Engineering. Students hope that this type of knowledge and experience enhancing industrial visits are organized in the future again and they are thankful for it.

Prof. Amit Choksi
(Visit Coordinator)

Dr. Bhargav Goradiya
(H.O.D, EC)

*****The End*****



Birla Vishvakarma Mahavidyalaya Engineering College

Anand

(IEEE Student Branch)

INDUSTRIAL VISIT TO



e-Infochips

18th February 2019

AHMEDABAD, GUJARAT

SUMMARY TABLE:

Name of Industry/Organization Visited:	e-Infochips Ltd.		
Address of Industry/Organization Visited:	11/A-B, Chandra Colony, Off C.G. Road, Ahmadabad, Gujarat		
Information of Industry Person:	Name:	Nilesh Ranpura	
	Designation:	Delivery Manager	
	Department:	ASIC	
Contact Information of Industry Person:	Contact No:	Tel: +91 (79) 39330000 Mob: (+91) 987- 926-1139	
	Email Id:	nilesh.ranpura@einfochips.com	
Name of Principal of the Institute:	Dr. I. N. Patel		
Department Name of the Institute:	Electronics & Communication Department		
Name of Head of the Department:	Dr. B. C. Goradiya		
Year/Semester of the Students	2 nd Year		
Specific Subject under which visit organized:	ASIC design, VLSI		
Professional body under which visit organized:	IEEE Student Branch (Gujarat Section)		
Date and Time of Departure:	08:30 A.M, 18 th February.2019		
Date and Time of Arrival:	06:00 P.M, 18 th February.2019		
No of Days for Visit:	01		
Accompanying Staff Name:	1	Prof. Amit H. Choksi	
	2	Prof. Robinson P. Paul	
	3		
Contact information of Staff:	No	Contact No:	Email Id:
	1	9723786348	amit.choksi@bvmengineering.ac.in
	2	9106747249	robinson.paul@bvmengineering.ac.in
	3		
Mode of Travel:	Bus (ADIT, CVM)		
No of Boys Students:	31		
No of Girls Students:	17		
Total No of Students:	48		
Accommodation Venue name and Address:	NA		

ABOUT e-Infochips:

e-Infochips, an Arrow company, is a leading global provider of product engineering and semiconductor design services. With over 500+ products developed and 40M deployments in 140 countries, E-Infochips continues to fuel technological innovations in multiple verticals. The company's service offerings include digital transformation and connected IoT solutions across various cloud platforms, including AWS and Azure.

Along with Arrow's \$27B in revenues, 19,000 employees, and 345 locations serving over 80 countries, E-Infochips is primed to accelerate connected products innovation for 150,000+ global clients. E-Infochips acts as a catalyst to Arrow's Sensor-to-Sunset initiative and offers complete edge-to-cloud capabilities for its clients through Arrow Connect.



REPORT: INDUSTRIAL VISIT TO E-INFOCHIPS

The company provides a range of products and services spanning multiple industries including semiconductors, aerospace and defense, medical devices, robotics, industrial automation, e-commerce, automotive infotainment, video surveillance and connected homes.

The company has developed its niche for several product companies and hi-tech firms such as Qualcomm, Toshiba, Kroger, Texas Instruments, Safran, Rockwell Collins, etc to name a few.

ABOUT INDUSTRIAL VISIT UNDER IEEE STUDENT CHAPTER:

The industrial visit to E-Infochips was conducted on 18th February 2019. We departed at 8:30 in the morning from the BVM College in the CVM bus. There were 48 students (2nd Year) along with two faculty members Prof. Amit Choksi (EC Dept) and Prof. Robinson Paul (EC Dept) who had supported this industrial visit.



The bus reached Ahmedabad at around 11 am and the students were provided with refreshments to cheer up the upcoming visit.

At around 11:30 am the first session of General Introduction and the Briefing about the company's work was given by two of their Engineers. They asked some interactive questions to the students about describing them in one word and also made the students aware about the most important qualities each student as an engineer in their professional career should have to be a good engineer.



They made us aware about ASIC- Application Specific Integrated Chips that they work on and provide the necessary steps to design and verify the same functionality. The overall design flow about ASIC and DFT- Design for Testability was conducted by 12:30pm. They showed a video on how they make 7nm Intel SoCs which made students understand the basic process and how such chipsets are produced in real life. They made students aware about the subjects which are most important to work specifically in e-Infochips and they explained how the most basic fundamentals which the students learn in those subjects results to be the most crucial element of the processes which goes on within the company.

The told the students about the company's number of employees to be around 700 out of which almost around 500 employees are in DFT sector which means most amount of work required for this specific setup is in the DFT sector and most of the new recruitments are done for the same.

REPORT: INDUSTRIAL VISIT TO E-INFOCHIPS

One of the Engineers then explained various important aspects like the use of Flip-Flops and Logic Gates. They explained the need of clock for a processor and how clock can affect the performance of a processor.

Around 12:45 pm we had a lunch break where everyone was provided lunch in the company's mess itself. Everyone seemed to enjoy the food.

Around 2 pm a tour to their room of works was held where they had a setup of some sample models and some videos regarding their work with some well-known companies like Kroger, Safran, Rockwell and Collins, etc in the field of aerospace and defence, home automation, IoT, ASIC, Medical devices, video surveillance and much more.

They showed some interesting videos on how they make products for aeroplanes by making smart engine health monitors, automating cockpit system, automatic cabin system and etc. They showed us some projects they worked on in medical sector to help the citizens suffering from common allergies by setting up the modules at different public streets. They showed us automatic medical pill supplying machine and a smart injector for patients who need a regular shot of medicine through syringes.

They showed the students some smart surveillance systems the company has developed like CCTV monitoring, finger print sensors, two-factor authentication machines, three-factor authentication machines, bionic nerve print sensors and other smart payment modules.

The company has also developed a lot of products for home automation out of which some products like door alarm, automatic lock, safety alarms, etc were demonstrated to the students. Then they showed different chipsets made by the company.

They showed the students very interesting project they did in the field of holograms and showed them creation of 3-D objects and animations in space by using a fan. The project was very interesting and innovative. One more interesting product that was demonstrated to the students were smart glasses for bicyclers which could tell the speed and many other important instructions to the rider just in front of the eyes without blocking the view.

REPORT: INDUSTRIAL VISIT TO E-INFOCHIPS



The last session of the tour the question and answer session took place at 2 pm where students wonderfully asked many questions and cleared all their queries about the industry platform.

REPORT: INDUSTRIAL VISIT TO E-INFOCHIPS

Questions about the effect of decreasing the size of SoCs on to the cost of production were asked which were wonderfully answered. They also solved students queries on what actually was the final product when only the Ahmedabad sector is considered and what would they hire the freshers for.



At the end our two faculties were given away a memento of memory by E-Infochips.

FROM THE STUDENTS:

We, the Students of BVM Electronics and Communication Engineering are extremely thankful to:

- | | |
|---------------------------------------|--|
| - Honourable Principal of BVM: | Dr. IN Patel |
| - HOD (EC Dept): | Dr. Bhargav Goradiya |
| - Staff Coordinators: | Prof. Amit Choksi
Prof. Robinson Paul |
| - IEEE Coordinator: | Prof. Darshan Dalwadi |
| - IEEE Student Coordinators: | Yagnik Mehta (2 nd Year,EC)
Vatsal Shah (2 nd Year,EC)
Rudrax Dave (2 nd Year,EC) |
| - EC Engineering Department | |
| - Report Made By: | Shreyans Patel (2 nd Year,EC) |

We hope that this type of knowledge and experience enhancing industrial visits are organized in the future again and we are thankful for it.

STUDENT'S ATTENDANCE LIST:

<u>Sr No.</u>	<u>ID no.</u>	<u>Full Name</u>	<u>DATE OF BIRTH</u>	<u>Mobile Number</u>
1	17EC401	Neel Macwan	4/11/1999	9664958234
2	17EC402	Vatsal Vipul Kumar shah	24/11/1999	6358152360
3	17EC403	Mehta sakshi Kanheyalal	13/07/1999	7285068942
4	17EC404	Modi Harsh Dharmesh	16/06/1999	8347255044
5	17EC405	Sakhiya Deep Jiteshkumar	5/7/1999	7487816089
6	17EC406	Vaibhav Goel	10/9/1999	7600065314
7	17EC407	Akhil bhikhubhai Rabadia	9/3/2000	9104959988
8	17EC408	Harsh Saraiya	1/11/1999	7567926426
9	17EC409	Yagnik Mehta	10/3/1999	9510403775
10	17EC410	Navadiya Harshkumar	21/01/2000	9033867615
11	17EC411	Trivedi Dhvani Kirankumar	9/12/1999	9773131177
12	17EC412	Kruti Chetan Kamdar	9/8/1999	9825257135
13	17EC413	Karmur Ronak punjabhai	28/01/1999	7202040250
14	17EC415	Dhruv patel	23/08/1999	7046184940
15	17EC416	Harsoda Komal Vinodbhai	2/10/1999	9664738159
16	17EC417	Dave Rudrax	7/11/1999	9724051664
17	17EC418	UKANI GOPAL KANTIBHAI	9/8/1999	7048761151
18	17EC419	Nisarg Chiragkumar Patel	11/7/2000	9904711107
19	17EC420	Meha Dave	6/8/1999	9821156604
20	17EC421	Rutvik Manishkumar Patel	27/05/1999	9725251039
21	17ec422	JAY GHIYA	14/03/1999	9664744056
22	17EC424	JAISWAL DEEPANSH	9/7/1999	9833000426
23	17EC425	Patel Shreyans Shitalkumar	16/2/1999	9426783602
24	17EC427	Sharma Neshwari Jitendra	9/11/1999	8160118280
25	17EC428	Shaunak vyas	21/1/1999	9979772272
26	17EC430	Mehta Shreya Vimalbhai	28/04/2000	9664834522
27	17EC431	Abhijeet Karmakar	1/10/1998	9638940994
28	17EC432	Patel Arshit Bhavssh	4/2/1998	9775111822
29	17EC434	Upadhyaya Aashi Nigam	21/11/1999	9687919133
30	17EC436	Mirani vishvas bhagvanbhai	30/09/1999	9978715327
31	17EC437	Dave Vatsa Dharmesh	23/11/1999	8511154069
32	17EC438	SHAH ROHITKUMAR	4/7/2000	9033855912
33	17EC439	Aziz Moiz Suterwala	12/9/1999	9033755952
34	17EC440	Poonam Lalwani	8/10/1999	9726285026

REPORT: INDUSTRIAL VISIT TO E-INFOCHIPS

35	17EC442	Sameer Kumar barot	22/06/2000	7623987591
36	17EC444	SHUKLA RAGNI	7/3/2000	8320862751
37	17EC445	Desai kanya bhavesh	24/12/1999	9712054150
38	17EC447	Udit Khichi	23/2/1999	7433007847
39	17Ec448	Sankalp Kumar	18/3/1999	9558905711
40	17ec450	Damani ramya bharatbhai	14/9/1999	6352889988
41	17EC455	Sanghwi S Singh	29/12/1999	9687320202
42	17EC456	Roshni Ashokbhai Hirani	3/4/1999	8140673499
43	17EC457	Bapat Durga shamkalyan	18/3/1999	9427859382
44	17ec459	Pandey Niharika	26/6/1999	7567542539
45	17EC460	Manek Kruti Jaysukh	12/7/1999	9408242342
46	17EC461	Disha Darji	29/8/1999	9904429899
47	17EC463	Shukla Naman Beerendra	10/10/1999	8320578920
48	18EC601	Mishra parixit udaynarayan	11/12/1998	9429219647

Confirmation Letter by e-Infochips:

RE: [External] Industrial Visit



Nilesh Ranpura <nilesh.ranpura@einfochips.com>

12-02-2019 07:47 PM

To: Amit Choksi Cc: Ramesh Devani; Surbhi Joshi

Hi Amit

10:30am to 12:00pm- Technology capsule

12:00-1:00PM Experience zone

1pm to 2pm Lunch

2:30pm to 3:30pm- QA

Nilesh Ranpura

Delivery Manager | ASIC



Tel: +91 (79) 39330000 | Mob: (+91) 987- 926-1139

Semiconductor Services

Software | Embedded | Semiconductor

Frost & Sullivan Company of the Year 2013-14

UNDERTAKING LETTER- FACULTY:

We here-by undertake that the Industrial Visit/Cultural Visit/ Field Trip/Study Tour/Out bound Training is purely academic related and at any case.

We shall undertake full responsibility of the student's actions and behavior at all times during the course of Industrial Visit/Cultural Visit/ Field Trip/Study Tour/Out bound Training. We further undertake not to breach the safety guidelines of the BVM Engineering College at any cost.

SR.NO.	Name	Department	Signature
1.	Prof. Amit H. Choksi	EC	
2.	Prof. Robinson P. Paul	EC	

STUDENT'S FEEDBACK AND CONCLUSION:

Educational Industrial visit to e-Infochips, Ahmedabad, Gujarat.

Both the site staff as well as guiding staff was very supportive to all the students.

As Students in Electronics and Communication Department, we came to know about the kind of work we can do in the field of electronics and about what is actually going on in the world in the field of electronics. We came to learn about different types of SoCs ranging from several nm technologies from around 160nm to 7nm chipsets. We came to know about the advancements the world has done in terms of Technology and what is made possible in today's life compared from the previous generations.

We got to see some marvellous products and research-based developments done by the company and came to know that such kind of innovative ideas can really have a huge impact on the future world.

By looking at the products the company worked on and learning about different kinds of jobs in different segments like DFT and ASIC, the students felt very motivated to take their interest into the field of Electronics and try to seek new ideas to innovate the current technology to make the future brighter and better for everyone.

As students, we all know that this visit will help us in our future practical and corporate life and brought a positive change in our thinking and practical behaviour regarding education and specially Engineering.

We are really thankful to our College for giving us such a wonderful chance to learn and experience something new which we had never seen before from our own eyes.

Prof. Amit Choksi
(Visit Coordinator)

Dr. Bhargav Goradia
(HOD, EC Department)



**A Report
on
Technical Visit
At**



**“ELECTRONICA & PRODUCTIONICA
INDIA 2018, BANGLORE”**

from

Date: 27/09/2018 to 29/09/2018

By

**4th Year EC Department
Students of**

BVM Engineering College

**(Affiliated to Gujarat Technological University)
(An Autonomous CVM Institution)**

Connecting Global Competence



Messe München



Factsheet

All information
about **e**lectronica India

Planet **e**: Bringing the
future to the world.

International Trade Fair for Electronic
Components, Systems and Applications
September 26–28, 2018
Bangalore International Exhibition Centre, Bangalore, India
electronica-india.com



electronica **India** 2018
inside tomorrow

• **Summary Table**

Name of Industry/Organization Visited:	Electronica-India 2018		
Address of Industry/Organization Visited:	Bangalore International Exhibition Centre(BIEC) 10th Mile, Tumkur Road, Madavara Post, Dasanapura Hobli, Bangalore 562 123, INDIA		
Information of Industry Person:	Name:	Electronica-India 2018	
	Designation:	Manager	
	Department:	Electronica-India 2018	
Contact Information of Industry Person:	Contact No:	Tel: + 91-22 4255-4700	
	Email Id:	info@mm-india.in	
Name of Principal of the Institute:	Dr. I.N.Patel		
Department Name of the Institute:	E.C. Department		
Name of Head of the Department:	Dr. B.C.Goradiya		
Year/Semester of the Students	4 th year		
Specific Subject under which visit organized:	Manufacturing Unit Exhibition, PCB Design		
Professional body under which visit organized:	IEEE student branch (Gujarat Section)		
Date and Time of Departure:	09:00 A.M. , 27 th March.2018		
Date and Time of Arrival:	10:00 A.M. , 29 th March.2018		
No of Days for Visit:	01		
Accompanying Staff Name:	1	Prof. Anish A. Vahora	
	2	Prof. Ronak R. Vashi	
Contact information of Staff:	No	Contact No:	Email Id:
	1	9998322871	anish.vahora@bvmengineering.ac.in
	2	9426724335	Ronak.vashi@bvmengineering.ac.in
Mode of Travel:	By Flight (own Expenditure)		
No of Boys Students:	06		
No of Girls Students:	07		
Total No of Students:	13		
Accommodation Venue name and Address:	Coral tree By Goldfinch Address: 166, No 16, RT Nagar Main Rd, MLA Layout, Krishnappa Block, RT Nagar, Bengaluru, Karnataka 560032		

Objectives:

The objectives of Industrial visits are:

- Make Students Aware with Industry Practices
- Increase Practical Awareness of various Industrial Sectors
- Acquaint Students with Interesting Facts and Newer Technologies
- Practical application of instruments handled during course curriculum

Students of Final year, Electronics and Communication Department of Birla Vishvakarma Mahavidyalya have visited the Electronica and Productonica India 2018 exhibition, organised by Indian Government at Bengaluru, Karnataka from 27th September, 2018 to 29th September, 2018. Total 13 students visited the expo with the visit faculty coordinators Prof. Anish Vahora and Prof. Ronak Vashi.

About ELECTRONICA & PRODUCTONICA INDIA 2018:

“ELECTRONICA and PRODUCTONICA” is the largest electronic component and technology expo in the South Asia. It is organised every year in the month of September in various countries. This year it was organised by the Indian Government at Bengaluru, Karnataka from 26th September, 2018 to 28th September, 2018.

Their status as largest marketplace for electronic components, systems, applications and electronics production technologies in India. The latest editions impressed with a high internationality of exhibitors as well as a supporting program with a top-class line-up of the conferences. 455 exhibitors from 17 countries showcased new developments and trends of the entire value chain of electronics, taking up over 20,000 square meters of exhibition space. 19,028 visitors came for the three days of the events, which equates to an increase of 24 percent compared to the previous Delhi edition.

Numerous innovations and a broad thematic spectrum at the trade fairs and conferences. Exhibitors displayed the latest technological advancements on the trade fairs. From the many country pavilions, such as China, Germany, Singapore, Taiwan and United Kingdom, visitors gained a global perspective on innovations in the sector. The variety of the supporting program also added value for the attendees. Top decision-makers from across India took the offer of these learning and networking opportunities.

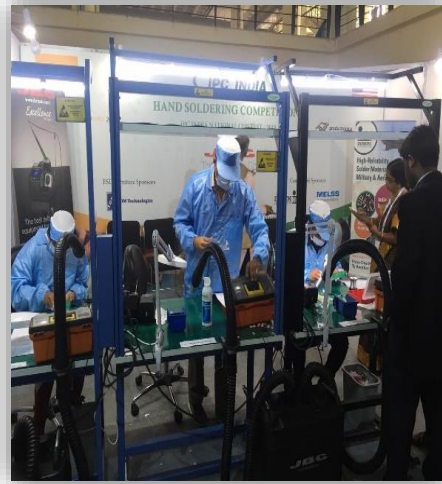
Some Highlighted Points of the Expo:

- Record numbers reflect industry's importance: increase of 24 percent in visitor as compared to previous Delhi edition
- Participants benefit from supporting program: Advantage India, e-Automotive conference, CEO Forum and India PCB Tech conference well received
- New market research report released on Automotive Electronics Industry of India at e-Automotive conference
- Advantage India Summit covered various key schemes and initiatives and offered investment and networking opportunities for encouraging growth within the electronics industry.

- E-Automotive conference included discussions around building up the eco-system for the growing automotive electronics market in India.
- CEO Forum gathered top thinkers to deliberate upon the way forward for the Indian ESDM sector
- India PCB Tech conference and pavilion gave a platform to the PCB suppliers as they showcased new technologies and gathered the information of the PCB industry ecosystem.

Glimpse of the Visit:





27.09.2018 & 28.09.2018
Electronica India-2018, BIEC –Bangalore

Visvesvaraya Industrial and Technological Museum

On a 3rd day (29/09/2018), students visited Visvesvaraya Industrial and Technological Museum, Bangalore (VITM), a constituent unit of National Council of Science Museums (NCSM), Ministry of Culture, Government of India, was established in memory of Bharat Ratna Sir M. Visvesvaraya.

A modest building with a built up area of 4000 sq. mtrs. was constructed in the serene surrounding of the Cubbon Park, housing various industrial products and engines, which was opened by the first Prime Minister of India, Pandit Jawaharlal Nehru on 14.07.1962. The first gallery set up at VITM on the theme ‘Electricity’ was opened to the public on 27.07.1965 by the then Union Minister for Information & Broadcasting & Bharat Ratna Indira Gandhi.

Some highlight points of the Museum Visit:

- VITM has a Dinosaur Corner with mobile app facility
- VITM also has a 1:1 scale replica of the Wright Brothers’ Flyer “Kitty Hawk” along with ‘Flyer Simulator’ providing an immersive and entertaining experience to the visitor.
- The ‘Science on a Sphere’ at VITM, the only one in Asia, is a large visualization system that uses multimedia projections to display animated data on the sphere converting it into an immersive animated globe showing dynamic, animated images of the atmosphere, ocean's and land area of a planet, combined with narration.
- VITM has 7 permanent exhibition galleries titled Engine Hall, Fun Science, Electrotechnic, Space – Emerging Technology in the Service of Mankind, Biotechnological Revolution, BEL Hall of Electronics and Children Science.





બિરલા વિશ્વકર્મા મહાવિદ્યાલયના ઈલેક્ટ્રોનિક્સ એન્ડ કોમ્યુનિકેશન બ્રાન્ચના અંતિમ વર્ષના વિદ્યાર્થીઓએ ઈલેક્ટ્રોનિક્સ ઈન્ડિયા ૨૦૧૮ ઈન્ટરનેશનલ એક્સપો, બેંગ્લોર ઈન્ટરનેશનલ એકિઝિબિશન સેન્ટરની મુલાકાત લીધી હતી.

ગ્રાન્ટના રૂ. ૨૫ કરોડ સુધીના પુનરાગ્રહણના ભાગે ભાગી રહ્યા છે.

બિરલા વિશ્વકર્મા મહાવિદ્યાલયના ઈ.સી. વિદ્યાર્થીઓએ ઈલેક્ટ્રોનિક્સ ઈન્ડિયા ઈન્ટરનેશનલ એક્સપોની મુલાકાત



બિરલા વિશ્વકર્મા મહાવિદ્યાલયના ઈલેક્ટ્રોનિક્સ એન્ડ કોમ્યુનિકેશન બ્રાન્ચના અંતિમ વર્ષના વિદ્યાર્થીઓએ ડા. ૨૪/૦૬/૨૦૧૮ થી ૨૬/૦૬/૨૦૧૮ દરમિયાન આયોજિત ઈલેક્ટ્રોનિક્સ ઈન્ડિયા-૨૦૧૮ ઈન્ટરનેશનલ એક્સપો, બેંગ્લોર ઈન્ટરનેશનલ એકિઝિબિશન સેન્ટરની મુલાકાત આયોજિત કરવામાં આવી હતી. આ ઈન્ટરનેશનલ એક્સપો વિશ્વના મુખ્યત્વે ઉદ્યોગ વિદ્યાર્થીઓને ઈલેક્ટ્રોનિક્સ ડોમેનમાં લેટેસ્ટ ટેકનોલોજીકલ તથા માર્કેટિંગ ટ્રેન્ડ વિશે પરીચય કેળવાવે તેનો હેતુ ધરાવે છે. આ પ્રસંગે સંસ્થાના પ્રિન્સિપાલ ડૉ. ઈન્દ્રજિત એન.પટેલે પણ જણાવ્યું હતું કે ઉપરોક્ત વિઝિટને ઈન્ટરનેશનલ ઈન્સ્ટિટ્યૂટ ઈન્ટરેક્શનલ એક્સપો ભાગ લે છે તે ઈન્ટરનેશનલ ઈન્સ્ટિટ્યૂટ ઈન્ટરેક્શનલ એક્સપો મદદરૂપ થશે. આ પ્રસંગે ચાકર વિદ્યામંડળના અધ્યક્ષ મીનુભાઈ પટેલ, અધ્યક્ષ હોદ્દાદાર, ડૉ. ભાગવત ગોરડિયા, ડૉ. દર્શન દલવાડી શુભેચ્છા પાઠવી હતી.



29.09.2018

Visvesvaraya Industrial and Technological Museum, Bangalore

Outcome of the Visit:

- Students came to know about the latest technologies used in the industries in various countries.
- As a final year student, this visit is very beneficial as students are given the proper details and the information about the current scenario of the industry and the job requirements in different domains of the industry.
- Students managed to interact with the industry experts and able to solve their doubts.



Birla Vishvakarma Mahavidyalaya Engineering College ,Anand (IEEE Student Branch)

INDUSTRIAL VISIT TO



eInfochips and ISRO Industrial Visit Report

5TH OCTOBER 2016

AHMEDABAD, GUJARAT.

INDEX

<i>TOPIC</i>	<i>PAGE</i>
<i>eInfochips industry profile</i>	3
<i>About eInfochips</i>	4
<i>eInfochips presentation section</i>	5
<i>eInfochips marketing section</i>	7
<i>Q&A session with einfochips members</i>	13
<i>ISRO company profile</i>	16
<i>ISRO genesis & history</i>	21
<i>Student's feedback & conclusion</i>	29

INDUSTRY PROFILE:

Company: eInfochips

Type: Private

Specializations: Industry Semiconductors, Aerospace & defence, Consumer Electronics, Medical Devices, QA Practice, Industrial Automation, Retail & E-Commerce, Software/ISV, Security & Surveillance, Healthcare

Founded: 1994

Headquarters: Sunnyvale, California, United States and Ahmedabad, India

Key people: Pratul Shroff(CEO)

Company Size: 1001-5000 employees

Website: www.einfochips.com

ABOUT eInfochips:

eInfochips is a Product Engineering and Software R&D Services firm based in Sunnyvale, California that offers solutions in software, hardware, VLSI and mechanical engineering services. The company has developed its niche as a technology partner for several Fortune 500 product companies and hi-tech firms such as Qualcomm, Texas Instruments, Toshiba, and Microsemi and is a development and engineering services partner for Rockwell Collins. The company provides a range of products and services spanning multiple industries including Semiconductors, Aerospace & Defense, medical devices, -Robotics, Industrial Automation, Retail & e-Commerce, automotive infotainment, Video surveillance, and connected homes.

The company has expertise in various technologies for Internet of Things, Business Intelligence, Cloud, Deep Learning and Video Analytics. It has collaborated with its partners on several projects including LinkNYC, an ambitious network to cover New York City with free Wi-Fi service by converting old payphones into hotspot points and the global IoT network called ZigBee Alliance

It has further collaborated with Kroger on retail site intelligence solutions. einfochips was chosen by Rockwell Collins as their Global Supplier of the Year 2014 for Engineering and Design Services. It could shrink design cycles by six months for Texas Instrument's 6AK2Ex processors.

Company Origin:

eInfochips was founded in 1994 by Pratul Shroff. with global headquarters in both Ahmedabad, India and Sunnyvale, California and has 1500 employees worldwide. From its origins as a chip design company, it has over the years, diversified into complete product engineering and R&D services spanning multiple industries. It has further developed sales presence across Austin, Boston, Cedar Rapids, Cincinnati, Chicago, Dallas and Raleigh in the US, Toronto (Canada), Tokyo (Japan) and London (UK).

ABOUT INDUSTRIAL VISIT UNDER IEEE BRANCH CHAPTER:

The Industrial visit to eInfochips company was conducted on 5th october, 2016. We departed at 7:30 AM from BVM Engineering College. There was one SS TRAVELS bus containing 45 students (3rd year) and two faculty members prof. Mayur sevak and prof. Kaushal patel. Prof. Darshan C. Dalwadi also provided the support regarding this industrial visit as a part of IEEE student branch activity.



The bus reached Ahmedabad around 9:30 am. The students had their breakfast and then bus went to CG road the bus reached eInfochip around 10:15 am. Students were taken to the Training Centre Room for a presentation to give information about eInfochip.

PRESENTATION SECTION:

At the presentation room we were warmly and whole heartedly welcomed by eInfochips employees and Mr. Nilesh, Mr. Ajay and their team who gave us a brief introduction about eInfochips and a presentation on modern technology used in making PCB designs and PCB chips, various techniques used for making multilayer PCB and complicated circuit designs.

Students obtained valuable information about physical design for advanced ASICs and also learnt about photolithography-optical proximity challenge and various advancements in electronics and communication field and its role in future.

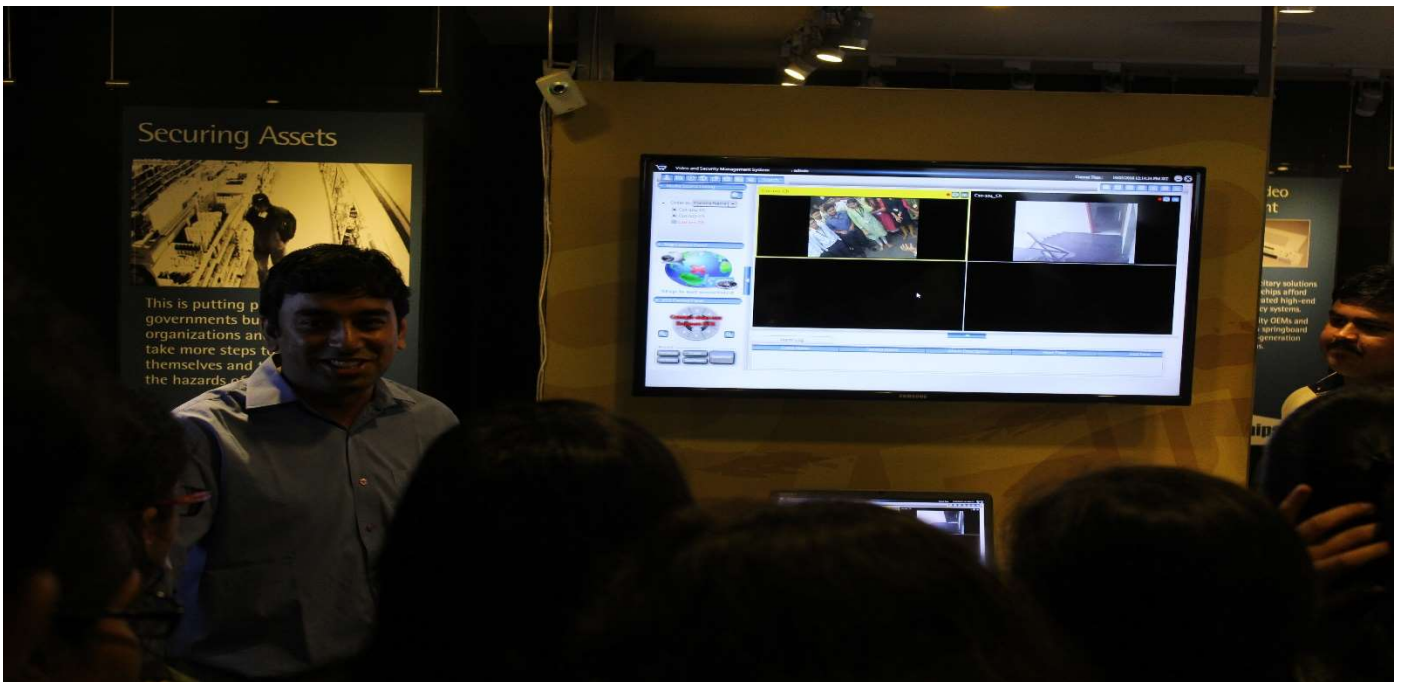


Around 12:15 pm the presentation ended leaving students in awe of recent advancements in their own engineering field. Students were further taken to marketing section of the company.

MARKETING SECTION:

At the marketing section, we met company's sales in charge who warm heartedly welcomed us and introduced us to company's high tech cutting edge technological products some of which were yet to be released in market. This section displayed large variety of products which company provides. A range of products and services spanning multiple industries including Semiconductors, Aerospace & Defence, medical devices, -Robotics, Industrial Automation, Retail & E-Commerce, automotive infotainment, Video surveillance, and connected homes.





The picture above shows security surveillance system which protects user's commercial products from thieves. wireless cameras, sensors, scanners etc were used which made it user friendly and highly reliable this product enhances online and offline buying experience.



This was a remote patient health monitoring system which identified certain type of allergies that a person suffered from and provided a medical assistance with help of a wireless camera fitted inside, it also provided suitable medicine from the box itself. Products like this are future of health industry.



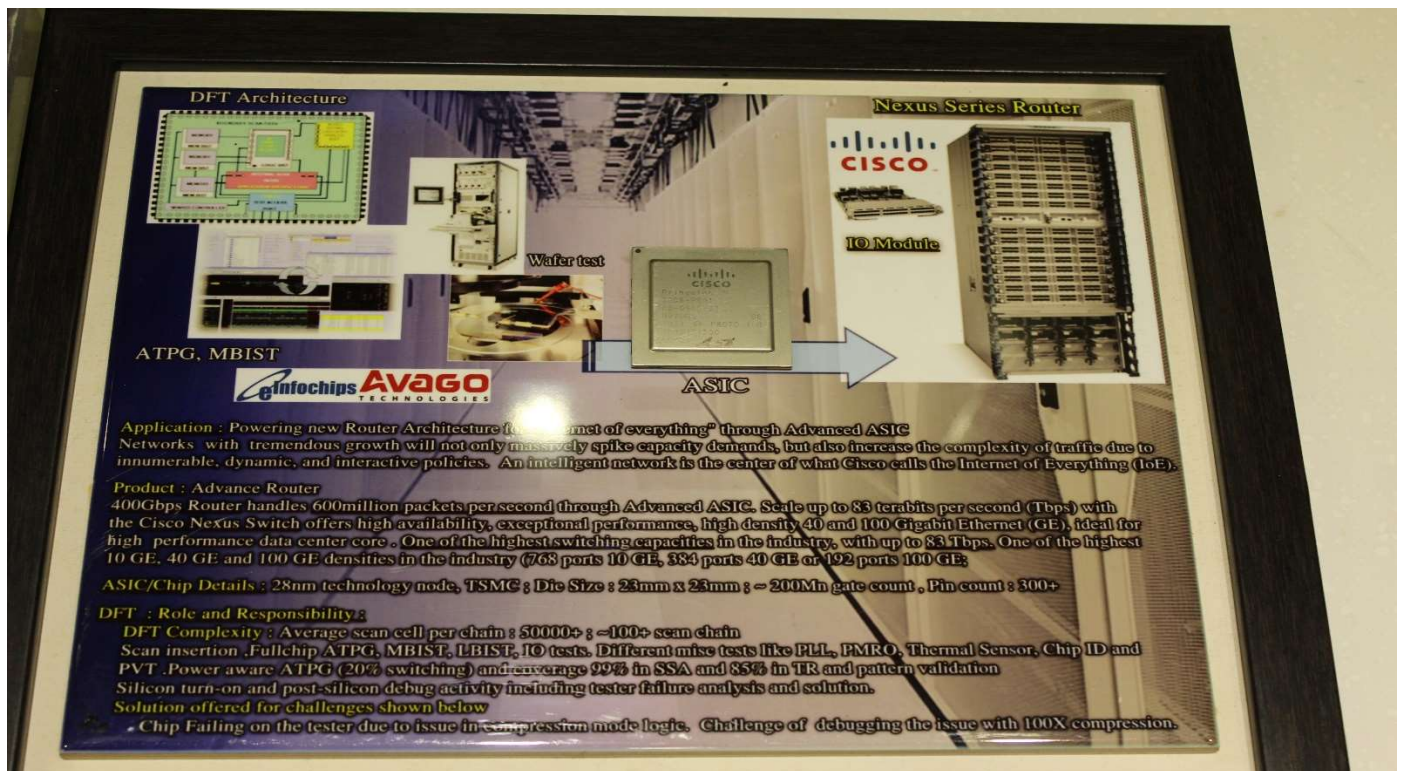
The above picture shows home security system which was a part of home automation, with help of it user could communicate with a person in front of his door with help of his phone also the user was notified via SMS whenever door opens.



This product included multiple sensors like smoke sensor, flood sensor, motion sensor, light sensor etc used for safety and security of desired place.



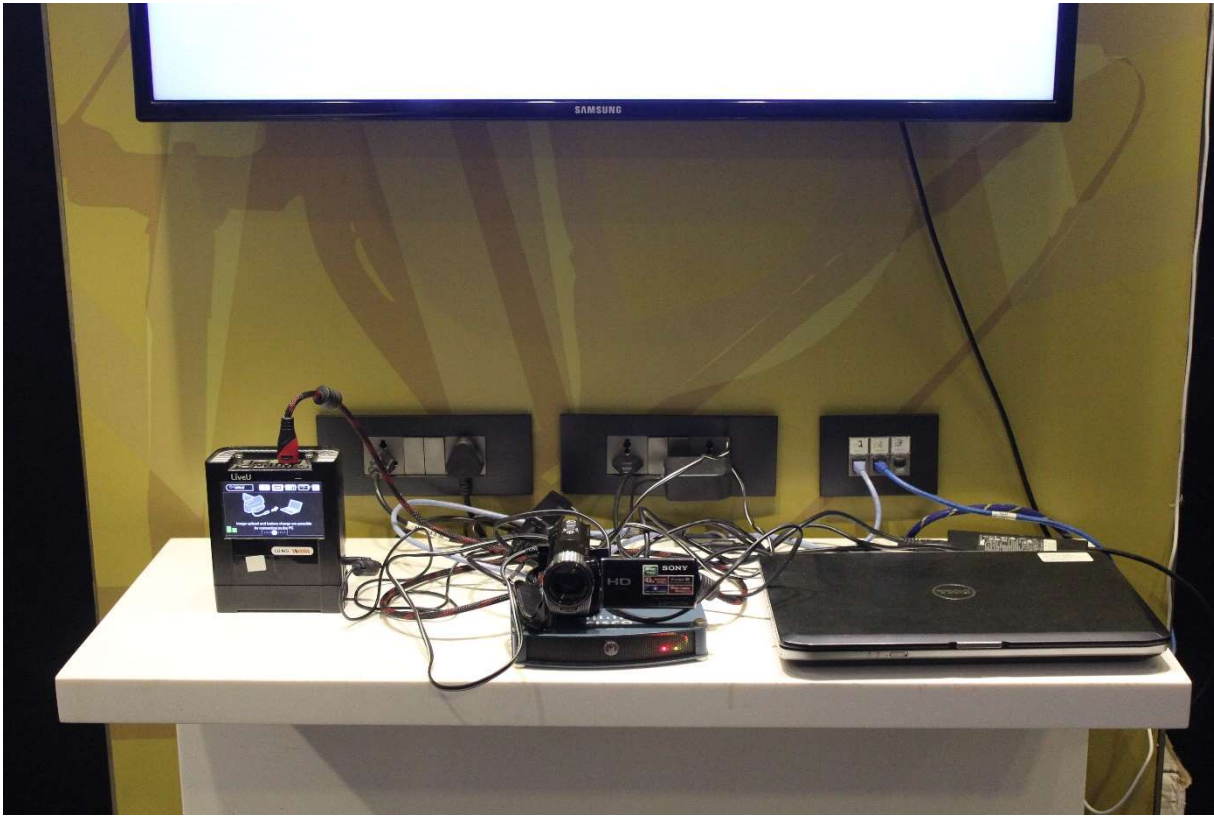
Various smart chips and PCB which are extremely thin and their circuitry is sized in few Nano meters.



Chips to be used in highly advanced and efficient routers.



***IoT Xcelerator** is a unique framework that combines software for multi-protocol gateways, data analysis platforms, hardware for gateways and edge computing, and the entire IOT Server framework along with the business application solutions. The framework encapsulates the full maturity cycle from Smart Sensors to Gateways to Cloud and to Smart Analytics.*



This is a product named black box which records videos and GPS location continuously in loop while you are driving vehicle it also helps in vehicle and path retractability, measures speed and ensures passenger safety.



This is a smart board which can send, read, display and exchange information with a laptop enhancing teaching and learning experience.

After visiting the marketing section and seeing various high tech products developed by einfochips and how they make people's life more comfortable and secured, students went for lunch provided by company.



Q&A SESSION:

Around 2 pm we came back to seminar hall after finishing lunch, for questions and answer session where students could interact with industrial experts who answered all the questions and doubts held by students. Experts also shared their valuable knowledge and experience with students and teachers which helped the students and teachers to look beyond their conventional education and provided a quick insight into future of technology.



Around 3 pm question and answer session was over, all the students were greatly satisfied by hospitality, knowledge and inspiration provided by eInfochips to BVM students it was such a great experience. Students were now headed towards much awaited trip to ISRO Ahmedabad



INDUSTRY PROFILE:

ISRO is the primary agency under the Department of Space, Govt. of India, for executing space programmes. The Indian space program starts around 1962, with the sincere effort of Vikram Sarabhai who is known as the father of the Indian space program. ISRO undertook demonstration of space applications for communication, broadcasting and remote sensing. The success story of ISRO starts when it launches its first satellite Aryabhata in collaboration with Russia. Initially ISRO used to launch its satellite in collaboration with US, and Russian countries but later because of the fast exploration and interest in space it begins to launch self-made satellites in Indian made Rockets. The series of satellites used were PSLV, GSLV, etc. ISRO has its unique mark among all other space research organizations throughout the world. Even the western countries seek the help of ISRO for their space missions. But now ISRO successfully sent Chandrayaan-1 spacecraft to moon in November 2008 which makes India, the fourth individual country to send a probe to the lunar surface. satellite in collaboration with US, and Russian countries but later because of the fast exploration and interest in space it begins to launch self-made satellites in Indian made Rockets. The series of satellites used were PSLV, GSLV, etc. ISRO has its unique mark among all other space research organizations throughout the world. Even the western countries seek the help of ISRO for their space missions. But now ISRO successfully sent Chandrayaan-1 spacecraft to moon in November 2008 which makes India, the fourth individual country to send a probe to the lunar surface.

Overview:

Space Applications Centre (SAC), is a major research and development centre of the Indian Space Research Organisation (ISRO). It plays a key role in realizing vision and mission of ISRO. Located at Ahmedabad, SAC is spread across two campuses having multi-disciplinary activities.

The core competence of the centre lies in development of space borne and air borne instruments/payloads and their applications for national development and societal benefits. These applications are in diverse areas and primarily meet the communication, navigation and remote sensing needs of the country. Besides these, the centre also contributes significantly in scientific and planetary missions of ISRO like Chandrayan-1, Mars Orbiter Mission etc.

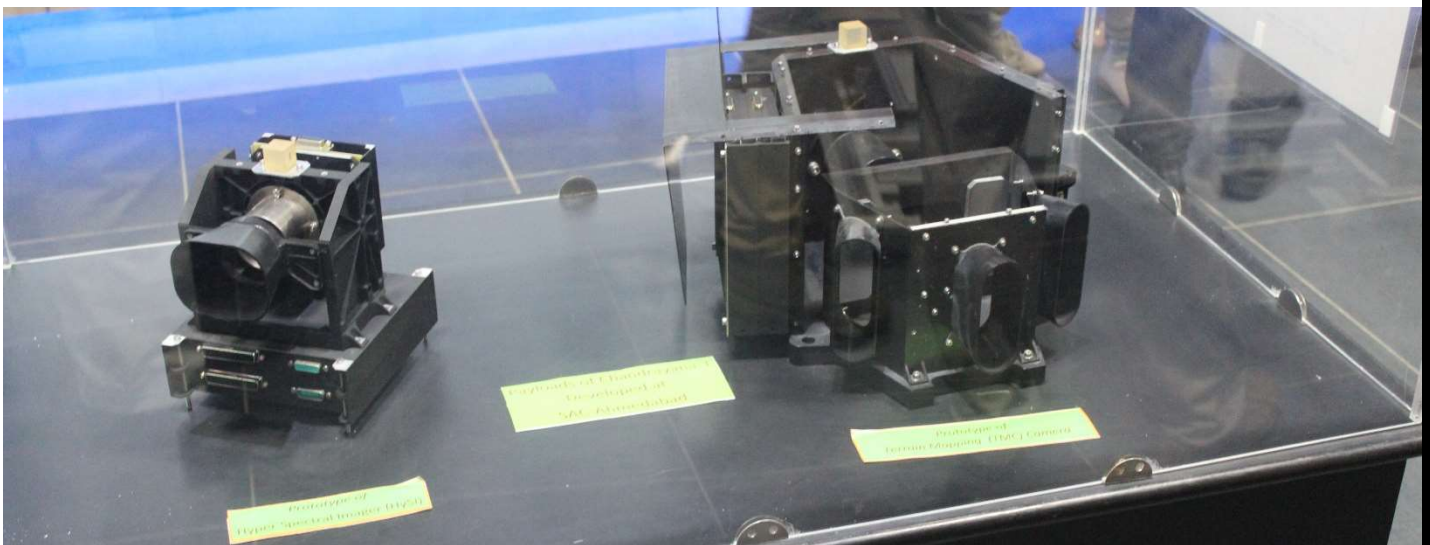
The communication transponders developed at this centre for Indian National Satellite (INSAT) and Geo Synchronous Satellite (GSAT) series of satellites are used by government and private sector for VSAT, DTH, internet, broadcasting, telephony etc. These satellites are instrumental in reaching remote parts of the country. The payloads for major navigation systems of the country - Indian Regional Navigation Satellite System (IRNSS) and GPS Aided Geo Augmented Navigation (GAGAN) are being developed by this centre.

This centre designs and develops the optical and microwave sensors for the satellites, signal and image processing software, GIS software and many applications for Earth Observation (EO) programme of ISRO. These applications are in diverse areas of Geosciences, Agriculture, Environment and Climate Change, Physical

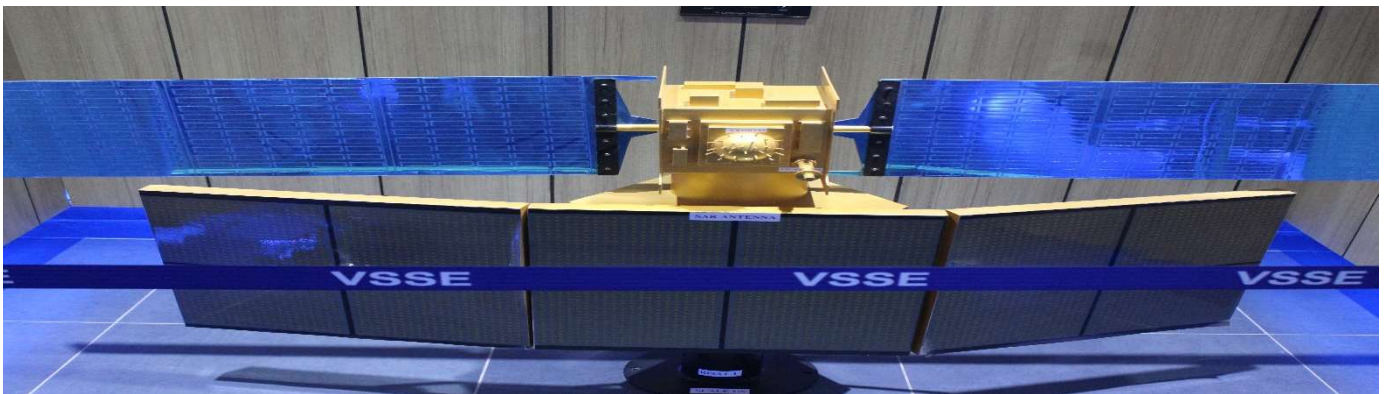
Oceanography, Biological Oceanography, Atmosphere, Cryosphere, Hydrosphere etc.

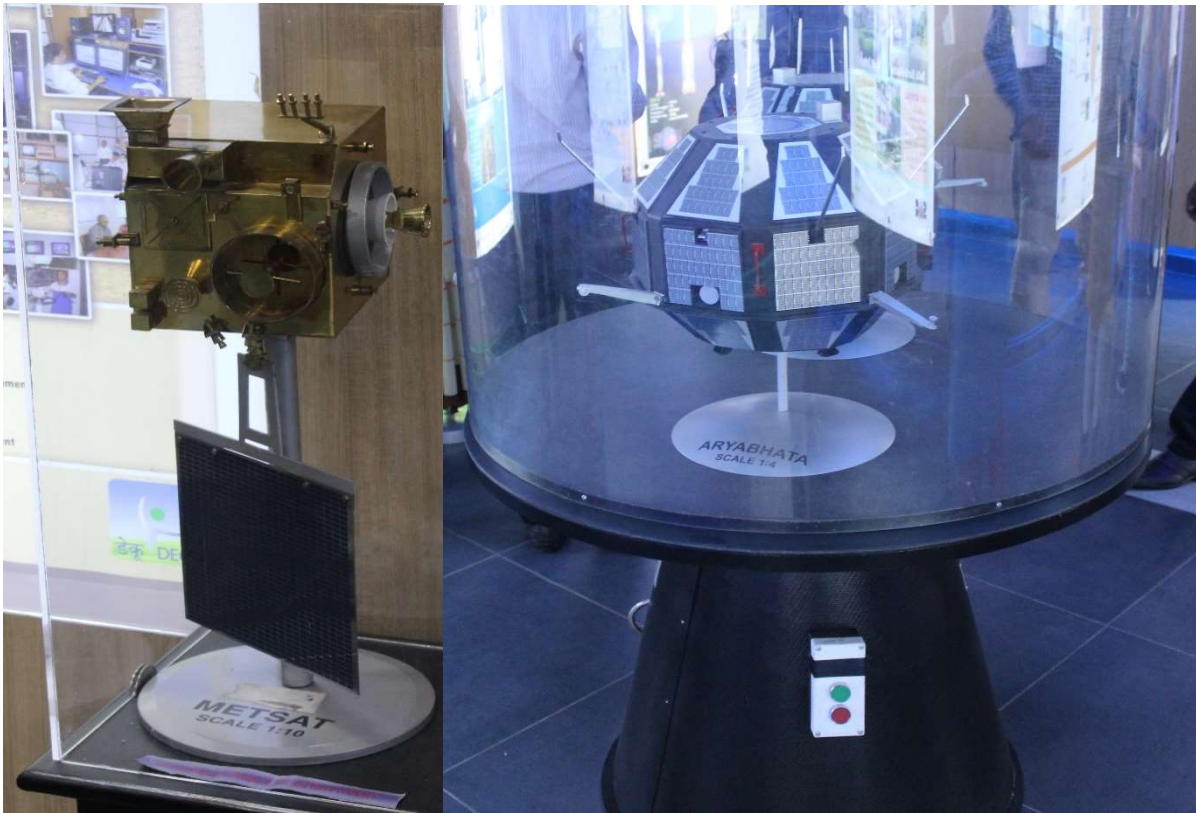
The facilities at SAC includes highly sophisticated payload integration laboratories, electronic and mechanical fabrication facilities, environmental test facilities, systems reliability/assurance group, image processing and analysis facilities, project management support group and a well-stocked library. SAC has active collaborations with industry, academia, national and international institutes for research and development. The centre also has state-of-art in-house and mobile exhibitions to propagate space technology and applications amongst students and public.

The Centre also conducts nine-month post graduate diploma courses for students from the Asia Pacific region under the aegis of the Centre for Space Science and Technology Education (CSSTEAP) in satellite meteorology and communication.









GENESIS AND HISTORY:

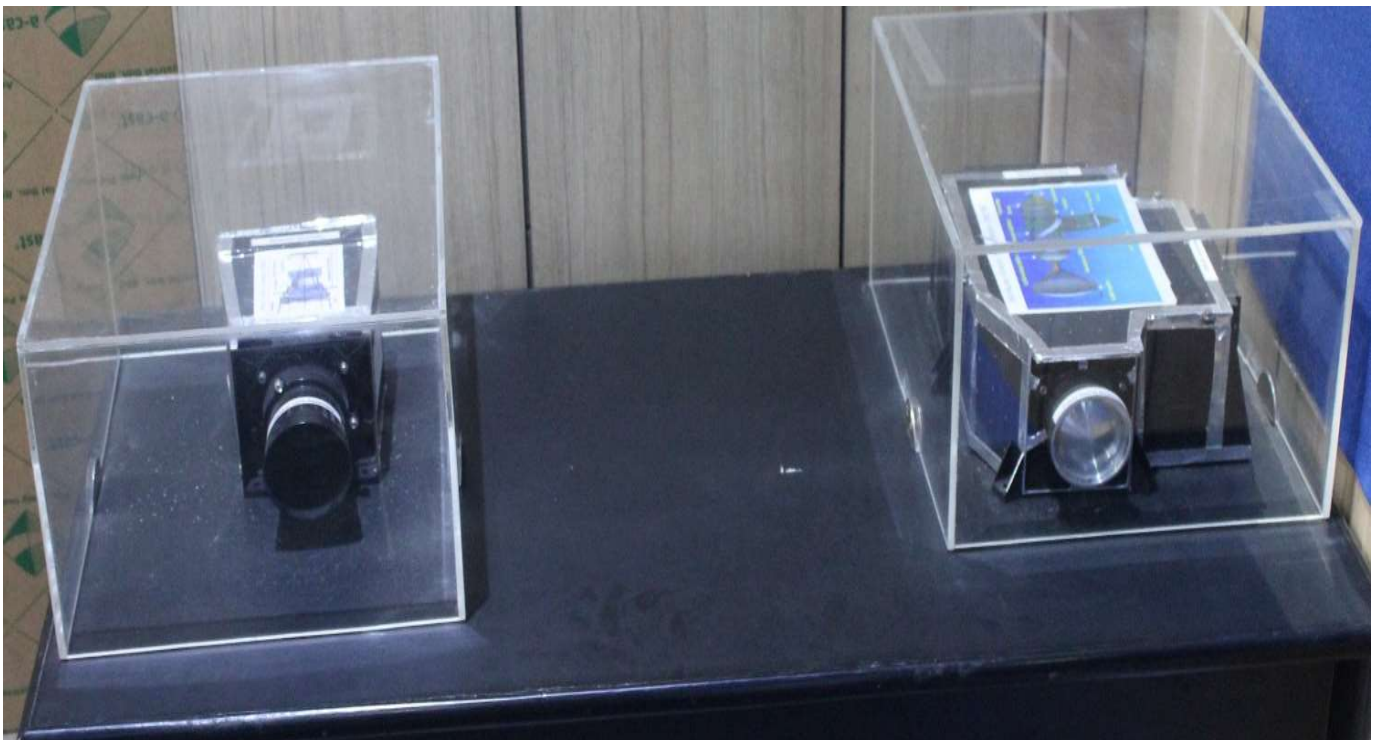
The genesis of the centre dates to 1966, with establishment of the Experimental Satellite Communication Earth Station (ESCES), by late Dr. Vikram Sarabhai in Ahmedabad. It was an experimental Earth Station and training centre where scientists and engineers of India and other developing countries could receive training and first-hand experience in the design, development and operations of an earth station for communications and broadcasting.

Later in 1972, the different units of ISRO in Ahmedabad pursuing research in applications of space technology were merged to form SAC. During 1975-76 a unique experiment called the Satellite Instructional Television Experiment (SITE) was conducted by SAC/ISRO utilizing the American ATS-6 satellite. This involved telecasting educational programmes aimed at socio-economic development of rural

India, which covered 2400 villages - spread over six states - through experimental Direct Reception Sets. SITE was followed by communication techniques developmental project called Satellite Telecommunications Experiments Projects (STEP), carried out with the Franco-German satellite, Symphony.

The payload for first experimental communication satellite of India, 'APPLE' was designed, fabricated and qualified at SAC. It was launched on board the first experimental flight of the Arian. An exhaustive communication applications programme called the APPLE Utilization Programme (AUP) was also conceived and carried out.

The INSAT-1 series of satellite was custom designed and made as per the unique requirements of the country by a US company. The INSAT 2A, 2B, 2C, 2D and 2E, launched in the years 1992, 1993, 1995, 1997 and 1999 respectively, were designed, fabricated and qualified / indigenously at SAC.





ભારતમાં સુદૂર સંવેદનની શરૂઆત: એક ઐતિહાસિક અંખી
HISTORIC OVERVIEW : HOW IT BEGAN IN INDIA



"SONIKAGARA" team in USSR

ઉદ્દેશ્યો


કેમ કેમેરા જણાવે છે, વાન વિશાળ ક્ષેત્રમાં કાળેની માહિતી મેળવવા માટે.

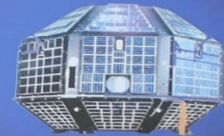
સુધારા (સેન્ટીમેટર સ્કેલ) : સમુદ્ર, વાન, વાનમાં પાણીની પ્રમાણ જણાવે છે.

Objectives

How cameras can collect data related to agriculture, forestry and geology.

How a microwave radiometer (SAR) can study of ocean-state, water vapor, and water content in the atmosphere, etc.



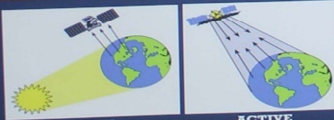


સુદૂર સંવેદન શા માટે?

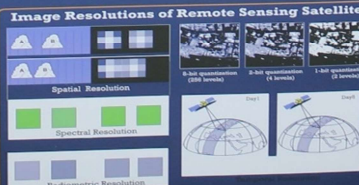
૧. પ્રદરથી બને માનવજાતિને કોનારથી મારી જતાનવરણના નુકસાનોને ઠાકવા.
૨. માનવજાતના આરોગ્ય અને સુખકારી માટે પહોંચવરણના પરિણામોને સમજાવે સકચ.
૩. ઉજ્જવોનાના પડખેબને સુચવાવ.
૪. પાણીપ્રવાણના સ્વાચ્છ અને માનવજાતની અસરને સમજવા, આકારથી કરવા, આગળી કરવા, અસરને ઠાકવી બનાવવા, અને તેને બનુસુક ચલાવના ઉપાય કરવા.
૫. પાણીપ્રવાણી લવારે આરી સમજણ મેળવી જોવાનાના તમા પ્રપ્ત્ય માટે.
૬. પાણીપ્રવાણને લગતી માહિતી, આગળી અને જોવાનાના માટે.
૭. પાણી, માંદા અને દરિયાકાંઠાના સમજણ વધુ માટે પ્રપ્ત્ય માટે રજાસુ માટે.
૮. કુલીની સામકાર રાખીને ડિવાલવા માટે અને રાણને રોગાનું રોકાનાના પ્રયાસમાં રોકે આપવા.
૯. કુલ પેલીઆને સમજવા, રેખરેખર રાખવા અને સારી રાખવાના પ્રયાસમાં ટીરેજ આપવા.

WHY REMOTE SENSING?

1. Reducing loss of life and property from natural and human-induced disasters.
2. Understanding environmental factors affecting human health and well-being.
3. Improving management of energy resources.
4. Understanding, assessing, predicting, mitigating, and adapting to climate variability and change.
5. Improving water resource management through better understanding of the water cycle.
6. Improving weather information, forecasting and warning.
7. Improving the management and protection of terrestrial, coastal and marine ecosystems.
8. Supporting sustainable agriculture and combating desertification.
9. Understanding, monitoring and conserving biodiversity.



PASSIVE SENSORS	ACTIVE SENSORS
Measurements of naturally emitted or reflected energy from the surface features. In most cases, the energy source is Sun.	Supplies its own source of energy to illuminate the target and measures the reflected energy.



સુદ્ધર સંવેદનના ફાયદાઓ:

1. એકી સાથે ઘણા મોટા વિસ્તારનું સંજીવન કે સારભૂત અવલોકન થઈ શકે છે.
2. સહેલાણીથી પહોંચી ના શકાય તેવા વિસ્તારોનો માહિતી મળી શકે છે.
3. ઝડપી અને ચોક્કસ માહિતી.
4. આ માહિતી વારંવાર મેળવી શકાય છે.

ADVANTAGES OF REMOTE SENSING

1. Synoptic View
2. Access to inaccessible areas
3. Speed and accuracy
4. Repeatability



23

The first phase saw the development of airborne thermal sensors, multispectral scanner, linear Charge Coupled Device (CCD) camera, Side Looking Radar, Colour Infrared (CIR) based photographic systems and several photo interpretation and ground truth equipment.

Based on above initial work, a strong applications programme was evolved around these instruments. Foundations for space borne sensors were laid during this period. Under the programme 'Satellite for Earth Observation (SEO)', two satellites were launched and called Bhaskara satellites after their Launch on board Russian launch Vehicle. Bhaskara carried a 1 km resolution 2 TV camera systems and a three channel microwave radiometer. These were designed, developed and successfully qualified in house. Bhaskara I and II were the first Indian Meteorological satellites which carried microwave radiometer called SAMIR to provide information on sea state and atmospheric water vapour content for use in meteorological studies.

The second phase in 1980s witnessed the results of earlier efforts of experimental satellites. The IRS 1A programme was successfully launched and the users started receiving multispectral imagery with 36m resolution. Major applications in agriculture, hydrology, geology and other areas were defined in close interaction with user agencies and the IRS utilization programme was carried out successfully. These efforts led to semi-operational applications of IRS 1A data.

ભારતના પ્રમોચનયાન INDIAN LAUNCH VEHICLES

- ભારતે બે પ્રાયોગિક પ્રમોચનયાન એસ.એલ.વી. અને એ.એસ.એલ.વી. વિકસાવ્યા છે.
- 1997 માં ધ્રુવીય ઉપગ્રહ પ્રમોચનયાન કાર્યરત થયું, જે આજે ભારત માટે વર્કહોર્સ સાબિત થયું છે.
- 1994-2015 (જુલાઈ 10, 2015) દરમિયાન આ યાને 29 સફળ પ્રમોચન કર્યા છે.
- એસ.એલ.વી માર્ક-2 માં સ્વદેશમાં વિકસાવાયેલું તથા ચકાસાયેલું ઉડ્ડયન માટેનું 'કાયોજેનિક એજિન' છે.
- વધુ સક્ષમ અને કાર્યક્ષમ એસ.એલ.વી માર્ક-3 નું પ્રથમ પ્રાયોગિક ઉપ-કક્ષીય ઉડ્ડયન ડીસેમ્બર 18, 2014 ના દિવસે સફળ રહ્યું હતું.
- India developed two experimental satellite launch vehicles, SLV-3 and ASLV.
- Polar Satellite Launch Vehicle (PSLV), commissioned in 1997, has emerged as the workhorse launch vehicle of India.
- During 1994-2015 (July 10, 2015) period, PSLV has had 29 successful flights.
- Geosynchronous Satellite Launch Vehicle (GSLV-Mk II) was commissioned after its second successful flight in May 2003.
- GSLV-Mk II has indigenously developed flight proven Cryogenic Upper Stage.
- More capable and efficient LVM3 had its first experimental sub-orbital flight on December 18, 2014 which was a success.

PSLV (Standard configuration)

Height : 44m
Lift-off weight : 295t
Propulsion : Solid, Liquid
Payload mass : 1650kg
Orbit : 630 km
Sun Synchronous
Polar Orbit
(1050 kg in Geosynchronous Transfer orbit)

GSLV

Height : 49m
Lift-off weight : 414t
Propulsion : Solid, Liquid & Cryogenic
Payload mass : 2200kg
Orbit : Geosynchronous Transfer Orbit (GTO)

SLV-3

Height : 22.7m
Lift-off weight : 17t
Propulsion : All Solid
Payload mass : 40kg
Orbit : Low Earth Orbit

ASLV

Height : 23.5m
Lift-off weight : 39t
Propulsion : All Solid
Payload mass : 150kg
Orbit : PLow Earth Orbit (LEO)



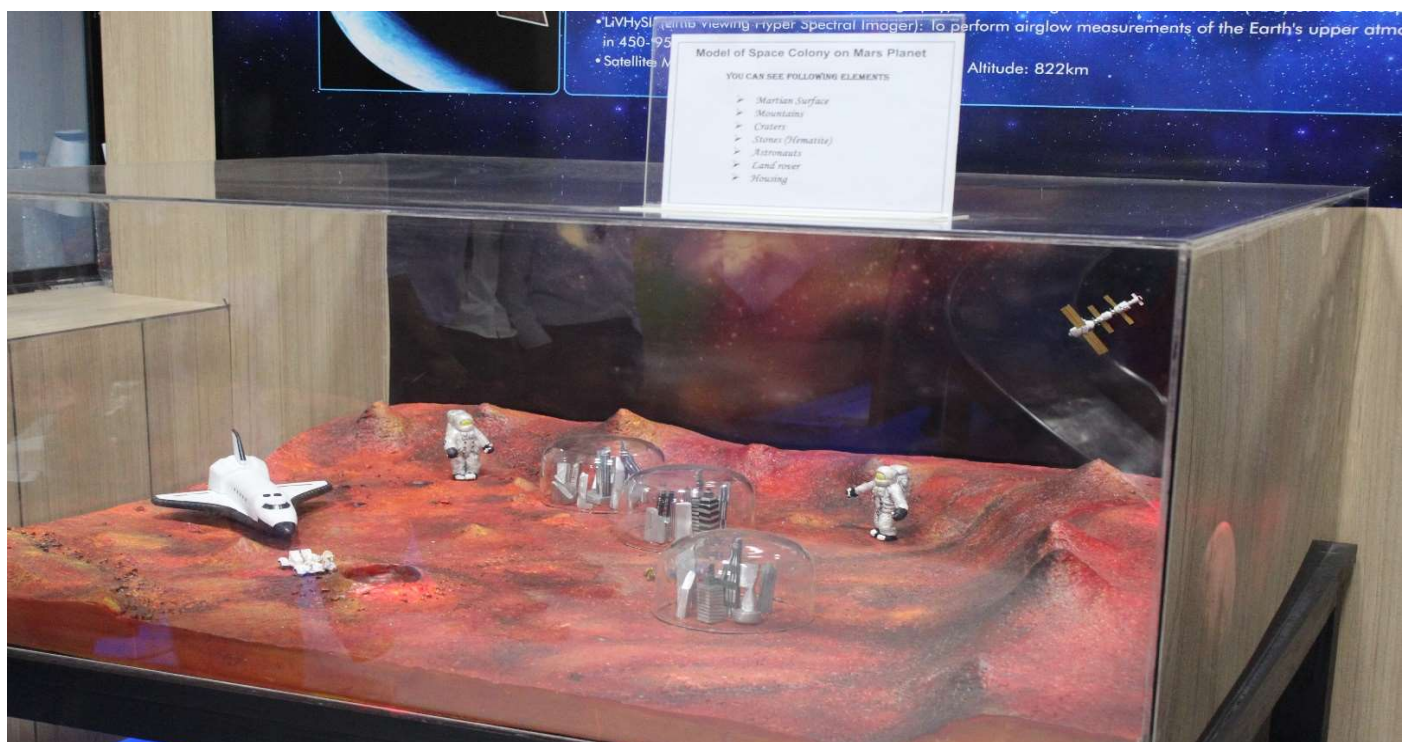


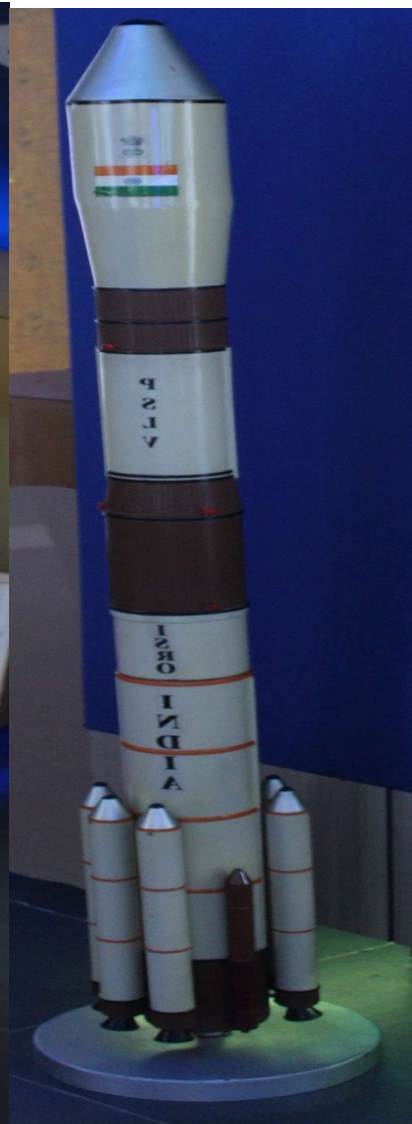












ઉપગ્રહ અનુવર્તન અને આદેશ / દૂરમિતિ

Satellite Tracking and Telemetry / Telecommand

દૂરમિતિ, અનુવર્તન અને આદેશ પ્રણાલિ ઉપગ્રહના પ્રમોથનથી લઈને છેક તેની ઉપગ્રહની દેખરેખ સુધી છે અને તેનું નિયંત્રણ કરે છે.
Telemetry, tracking & command system monitors & controls the satellite right from the lift-off stage to the end of its operational life in space.

અનુવર્તન, દૂરમિતિ અને આદેશ મથક

અનુવર્તન :
આ પ્રક્રિયા અનુવર્તન ઉપગ્રહની ચોક્કસ સ્થાનની જાણવારી મેળવવા તારાવે છે. આ માટે ઉપગ્રહના કોણ, અંતર અને તેજની માહિતીનો ઉપયોગ થાય છે.

દૂરમિતિ :
દૂરમિતિ માટે ઉપગ્રહ ની વિવિધ પ્રકારની જાણવારી સ્થાનિક અંગીકારી માટેની મથક છે જે ઉપગ્રહ પરથી આકેશિત ભાષામાં ભૂ-માત્ર પર મોકલવામાં આવે.

દૂર આદેશ :
જરૂરિયાત મુજબ ભૂ-મથક દર આદેશકારી ઉપગ્રહની વિવિધ પ્રકારની ચોક્કસ કાર્યોનું આદેશન કરે છે અને તેના નિયંત્રણ સ્થાન તથા તેના પર વિવિધ ભાષામાં છે.

ભારતીય અવકાશ યાનસંસ્થાન સંસ્થાને ભૂ-મથકનું એક વિશિષ્ટ કાર્યો ગ્રેડ અને ઉપગ્રહના અનુવર્તન, દૂરમિતિ અને આદેશ વ્યવસ્થા માટે રચાયું છે.

Tracking Telemetry and Command Station (TT&C)

```

graph TD
    Satellite[Satellite] -- command --> CT[Command transmitter]
    Satellite -- telemetry --> TR[Telemetry Receiver]
    CT --> TS[Tracking System]
    TR --> P[Processor]
    TS --> CC[Computer Controller]
    P --> CC
    CC --> CT
    
```

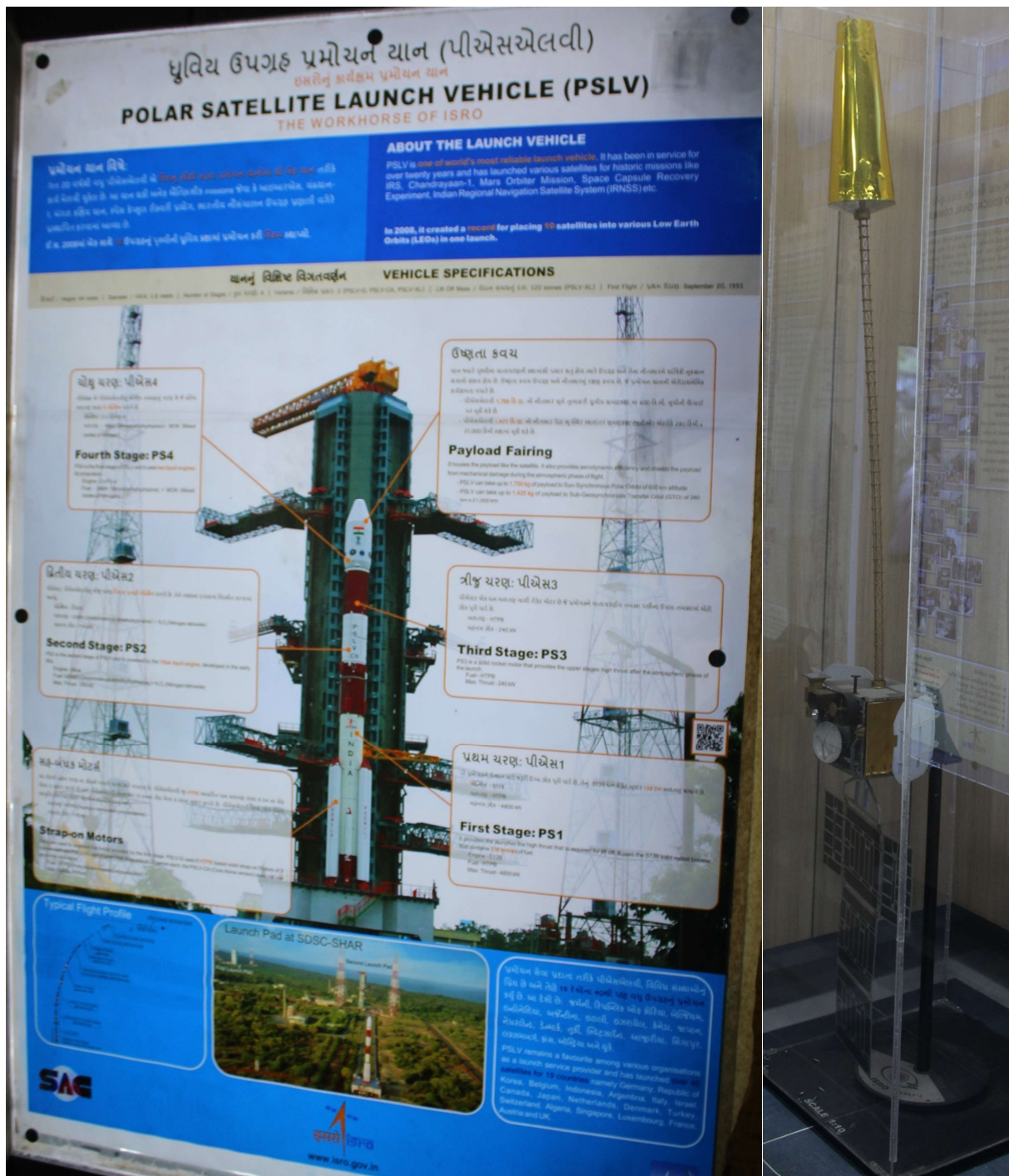
Tracking :
To determine the position of the spacecraft and follows it travel using angle, range & velocity information.

Telemetry :
To determine the position of the spacecraft and follows it travel using angle, range & velocity information.

Telecommand :
To receive & execute remote control commands to effect changes to the platform functions, configuration, position & velocity. Indian Space Research Organization (ISRO) has established a comprehensive network of ground stations to provide Telemetry, Tracking and Command (TT&C) support to Satellite and Launch vehicle missions.

INDUSTRIAL VISIT UNDER IEEE

26



Strong foundation was also laid for airborne SAR system development, its data processing and applications at SAC. The advanced activities carried out at the centre during the third phase in 1990s put India at par with many other advanced nations through the design of high resolution sensors in the optical and microwave regions including a successfully flown airborne SAR system and a very sophisticated application programme tuned to our country's needs. The 5.8 m resolution Pan

Camera of IRC 1C & 1D revolutionized the applications concept in the country. Being the best resolution civilian sensor in the world at that time, it attracted the attention of foreign users.

SAC has state of the art General Circulation Models for experimentation with satellite data. Prediction of weather in the extended range and prediction of Ocean state in the short range are the fields of active research.

ભારતીય પ્રાદેશિક નૌવહન ઉપગ્રહ પદ્ધતિ (આઈઆરએનએસએસ) Indian Regional Navigation Satellite System (IRNSS)

આઈઆરએનએસએસ એ ઇસરોની પહેલ છે ભારતીય પ્રદેશમાં વપરાશકર્તાને ચોક્કસ સ્થિતિ, ગતિ અને સમયની જાણ કરવા માટે એક સ્વતંત્ર ઉપગ્રહ નૌવહન પદ્ધતિની રચના કરવાની. આ પદ્ધતિથી વપરાશકર્તાને નિશ્ચિત સ્થિતિની ચોક્કસાઈ ૨૦ મીટર કરતા સારી મળશે.

પ્રાથમિક સેવા વિસ્તારમાં ભારતનું ભૂમિ ક્ષેત્ર અને ભારતીય ભૌગોલિક-રાજકીય સરહદથી ૧૫૦૦ કિ.મી. સામેલ છે. વર્ણિત સેવા વિસ્તાર માં અક્ષાંશ ૩૦ દક્ષિણ થી ૫૦ ઉત્તર અને રેખાંશ ૭૦ પૂર્વ થી ૧૩૦ પૂર્વ સામેલ છે.

આઈઆરએનએસએસ બે પ્રકારની સેવાઓ આપે છે - પ્રમાણભૂત સ્થિતિ સેવા (સ્ટાન્ડર્ડ પોઝિશનિંગ સેવા, પ્રતિબંધિત સેવા (આરએસ) આઈઆરએનએસએસનું અવકાશી માળખું સાત ઉપગ્રહોનું બનેલું છે. જેમાંથી ત્રણ ઉપગ્રહ ભૂ-સ્થિર કક્ષામાં રહેશે.

The IRNSS is ISRO initiative to build an independent satellite navigation system to provide precise Position, Velocity and Time to users over the Indian region. IRNSS provides the user with a targeted position accuracy of better than 20m.

The primary service area includes Indian land mass and 1500 km from Indian Geo political boundary. The extended service area covering Lat: 30 degree South to 50 degree North and Long: 30 degree East to 130 degree East.

IRNSS provides two types of services, namely Standard Positioning Service (SPS) and Restricted Services (RS)

The space segment consists of the IRNSS constellation of seven satellites. Three satellites will be located in geostationary orbit and the remaining four will be located in geosynchronous orbits.

Ground Segment

IRNSS ground segment is responsible for navigation parameter generation and transmission, satellite control, ranging and integrity monitoring and time keeping.

ભૂમિગત માળખું આઈઆરએનએસએસનું ભૂમિગત માળખું નૌવહન મશકન સર્જન તથા પસારણ, ઉપગ્રહ નિયંત્રણ ઇન્ફ્રાગ્રી મોનીટરિંગ વધા સમય પ્રણાલીની જવાબદારી નિભાવે છે.

INC at Bhatnagar
Central Processing Facility of IRNSS for generation of Navigation Broadcast Data

IRNSS Payload Elements developed at SAC

પ્રદાયકાર - આઈઆરએનએસએસ ઉપગ્રહો બે પ્રકારના પ્રદાયકાર લઈ જાય છે.

નૌવહન પ્રદાયકાર વપરાશકર્તા માટે નૌવહન સેવા સંકેતો પ્રમાણિત કરે છે. બેલ-પ બેન્ડ અને એસ બેન્ડ માં કાર્યરત એકદમ ચોક્કસ રૂબીડીયમ આણ્વિક ધડકાયાળ દ્વારા ચાલિત.

અંતર પ્રદાયકાર: ઉપગ્રહના અંતરનો ચોક્કસ નિર્ણય કરવા માટે સી બેન્ડ ટ્રાન્સપોન્ડર લેસર રેન્જિંગ માટે કોર્નર ક્યુબ રેટો રીફ્લેક્ટર

IRNSS Payloads
IRNSS satellites carries two types of payloads.

Navigation payload contains:
Transmits navigation service signals to the users. Operates in L5 band and S band. Driven by highly accurate Rubidium atomic clock.

Ranging payload contains:
C-band transponder for accurate determination of the range of the satellite. Corner Cube Retro Reflectors for laser ranging.

Navigation Signal Generation Unit S-Band Modulator & Up-Converter

L5-Band Driver Amplifier S-Band Output Filter

IRNSS Architecture

IRNSS Architecture (17)

Ground Segment

Space Segment

આઈઆરએનએસએસના કેટલાક ઉપયોગો

- ધરતી ક્ષણે અને સમુદ્રી નૌવહન
- ભૂમિગત મશકન
- વાહનોનું પેલેડી મોનિટરિંગ અને કાર્યકારનું સંચાલન
- મોબાઈલ ફોન સાથે એકત્રીકરણ
- ચોક્કસ સમય
- નાવિક અને હવામાન માનવ મોનિટરિંગ
- કસ્ટોમર અને ભારતીય પુરસ્કાર માટે ધરતી નૌવહનની ખરે
- ચાલકો માટે કસ અને ચાલકનું નૌવહન

Applications

- Terrestrial, Aerial and Marine Navigation
- Disaster Management
- Vehicle tracking and fleet management
- Integration with mobile phones
- Precise Timing
- Mapping and Geodetic data capture
- Terrestrial navigation and for hikers and travellers
- Visual and voice navigation for drivers

Simulator Test Setup IRNSS Simulator IRNSS User Receivers

ISRO

We left ISRO around 5pm with a deep desire to know life beyond earth and strong intention and inspiration to do something for our motherland and make world a better place for everyone. We reached back to college at 7:30 pm

STUDENT'S FEEDBACK AND CONCLUSION:

Educational industrial visit to ISRO & eInfochips Ltd (India) Ahmedabad, Gujarat. The guiding staff both college as well as site staff was very supportive to all students.

We know that this visit will help us in our future practical and corporate life and brought a positive change in our thinking and practical behaviour regarding Education and specially Engineering.

We, the Students of BVM Electronics and Telecommunication Engineering are extremely thankful to

- *Honourable Principal of BVM: Dr. IN Patel*
- *HOD (ET): Dr. MB Shah*
- *Staff coordinators: prof. Darshan Dalwadi
prof. Mayur Sevak
prof. Kaushal Patel*
- *Student coordinators: Drupad Pandya
Shaivil Patel
Chinmay Raval
Yogesh Iyer*
- *ET Engineering Department*

We hope this type of knowledge & experience enhancing industrial visits are organised in future again, we are thankful for it.

PREPARED BY: Drupad Pandya(BVM-ET-sem5)



Birla Vishvakarma Mahavidyalaya Engineering College ,Anand (IEEE Student Branch)

INDUSTRIAL VISIT TO



eInfochips and ISRO Industrial Visit Report

5TH OCTOBER 2016

AHMEDABAD, GUJARAT.

INDEX

<i>TOPIC</i>	<i>PAGE</i>
<i>eInfochips industry profile</i>	3
<i>About eInfochips</i>	4
<i>eInfochips presentation section</i>	5
<i>eInfochips marketing section</i>	7
<i>Q&A session with einfochips members</i>	13
<i>ISRO company profile</i>	16
<i>ISRO genesis & history</i>	21
<i>Student's feedback & conclusion</i>	29

INDUSTRY PROFILE:

Company: eInfochips

Type: Private

Specializations: Industry Semiconductors, Aerospace & defence, Consumer Electronics, Medical Devices, QA Practice, Industrial Automation, Retail & E-Commerce, Software/ISV, Security & Surveillance, Healthcare

Founded: 1994

Headquarters: Sunnyvale, California, United States and Ahmedabad, India

Key people: Pratul Shroff(CEO)

Company Size: 1001-5000 employees

Website: www.einfochips.com

ABOUT eInfochips:

eInfochips is a Product Engineering and Software R&D Services firm based in Sunnyvale, California that offers solutions in software, hardware, VLSI and mechanical engineering services. The company has developed its niche as a technology partner for several Fortune 500 product companies and hi-tech firms such as Qualcomm, Texas Instruments, Toshiba, and Microsemi and is a development and engineering services partner for Rockwell Collins. The company provides a range of products and services spanning multiple industries including Semiconductors, Aerospace & Defense, medical devices, -Robotics, Industrial Automation, Retail & e-Commerce, automotive infotainment, Video surveillance, and connected homes.

The company has expertise in various technologies for Internet of Things, Business Intelligence, Cloud, Deep Learning and Video Analytics. It has collaborated with its partners on several projects including LinkNYC, an ambitious network to cover New York City with free Wi-Fi service by converting old payphones into hotspot points and the global IoT network called ZigBee Alliance

It has further collaborated with Kroger on retail site intelligence solutions. einfochips was chosen by Rockwell Collins as their Global Supplier of the Year 2014 for Engineering and Design Services. It could shrink design cycles by six months for Texas Instrument's 6AK2Ex processors.

Company Origin:

eInfochips was founded in 1994 by Pratul Shroff. with global headquarters in both Ahmedabad, India and Sunnyvale, California and has 1500 employees worldwide. From its origins as a chip design company, it has over the years, diversified into complete product engineering and R&D services spanning multiple industries. It has further developed sales presence across Austin, Boston, Cedar Rapids, Cincinnati, Chicago, Dallas and Raleigh in the US, Toronto (Canada), Tokyo (Japan) and London (UK).

ABOUT INDUSTRIAL VISIT UNDER IEEE BRANCH CHAPTER:

The Industrial visit to eInfochips company was conducted on 5th october, 2016. We departed at 7:30 AM from BVM Engineering College. There was one SS TRAVELS bus containing 45 students (3rd year) and two faculty members prof. Mayur sevak and prof. Kaushal patel. Prof. Darshan C. Dalwadi also provided the support regarding this industrial visit as a part of IEEE student branch activity.



The bus reached Ahmedabad around 9:30 am. The students had their breakfast and then bus went to CG road the bus reached eInfochip around 10:15 am. Students were taken to the Training Centre Room for a presentation to give information about eInfochip.

PRESENTATION SECTION:

At the presentation room we were warmly and whole heartedly welcomed by eInfochips employees and Mr. Nilesh, Mr. Ajay and their team who gave us a brief introduction about eInfochips and a presentation on modern technology used in making PCB designs and PCB chips, various techniques used for making multilayer PCB and complicated circuit designs.

Students obtained valuable information about physical design for advanced ASICs and also learnt about photolithography-optical proximity challenge and various advancements in electronics and communication field and its role in future.

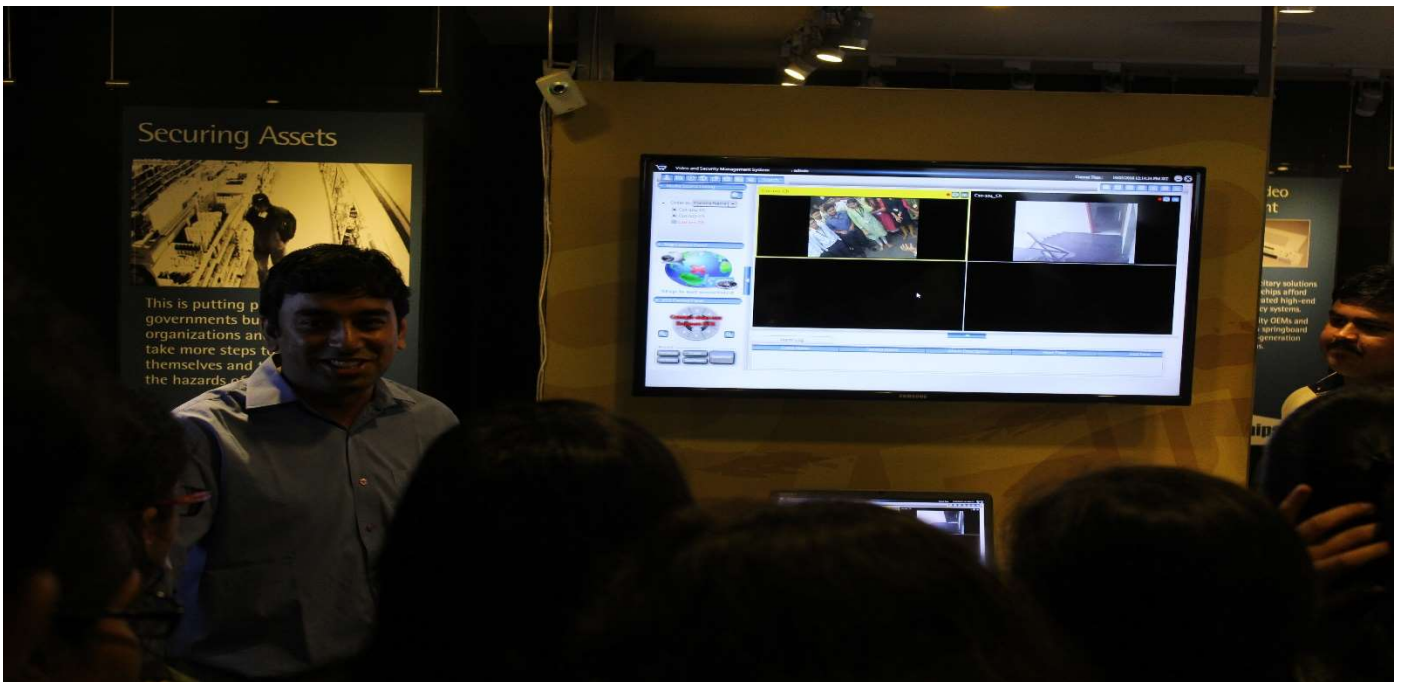


Around 12:15 pm the presentation ended leaving students in awe of recent advancements in their own engineering field. Students were further taken to marketing section of the company.

MARKETING SECTION:

At the marketing section, we met company's sales in charge who warm heartedly welcomed us and introduced us to company's high tech cutting edge technological products some of which were yet to be released in market. This section displayed large variety of products which company provides. A range of products and services spanning multiple industries including Semiconductors, Aerospace & Defence, medical devices, -Robotics, Industrial Automation, Retail & E-Commerce, automotive infotainment, Video surveillance, and connected homes.





The picture above shows security surveillance system which protects user's commercial products from thieves. wireless cameras, sensors, scanners etc were used which made it user friendly and highly reliable this product enhances online and offline buying experience.



This was a remote patient health monitoring system which identified certain type of allergies that a person suffered from and provided a medical assistance with help of a wireless camera fitted inside, it also provided suitable medicine from the box itself. Products like this are future of health industry.



The above picture shows home security system which was a part of home automation, with help of it user could communicate with a person in front of his door with help of his phone also the user was notified via SMS whenever door opens.



This product included multiple sensors like smoke sensor, flood sensor, motion sensor, light sensor etc used for safety and security of desired place.



Various smart chips and PCB which are extremely thin and their circuitry is sized in few Nano meters.

DFT Architecture

Nexus Series Router

CISCO

IO Module

Wafer test

ATPG, MBIST

Avago TECHNOLOGIES

ASIC

Application : Powering new Router Architecture for "Internet of everything" through Advanced ASIC Networks with tremendous growth will not only massively spike capacity demands, but also increase the complexity of traffic due to innumerable, dynamic, and interactive policies. An intelligent network is the center of what Cisco calls the Internet of Everything (IoE).

Product : Advance Router
400Gbps Router handles 600million packets persecond through Advanced ASIC. Scale up to 83 terabits per second (Tbps) with the Cisco Nexus Switch offers high availability, exceptional performance, high density 40 and 100 Gigabit Ethernet (GE), ideal for high performance data center core. One of the highest switching capacities in the industry, with up to 83 Tbps. One of the highest 10 GE, 40 GE and 100 GE densities in the industry (768 ports 10 GE, 384 ports 40 GE or 192 ports 100 GE).

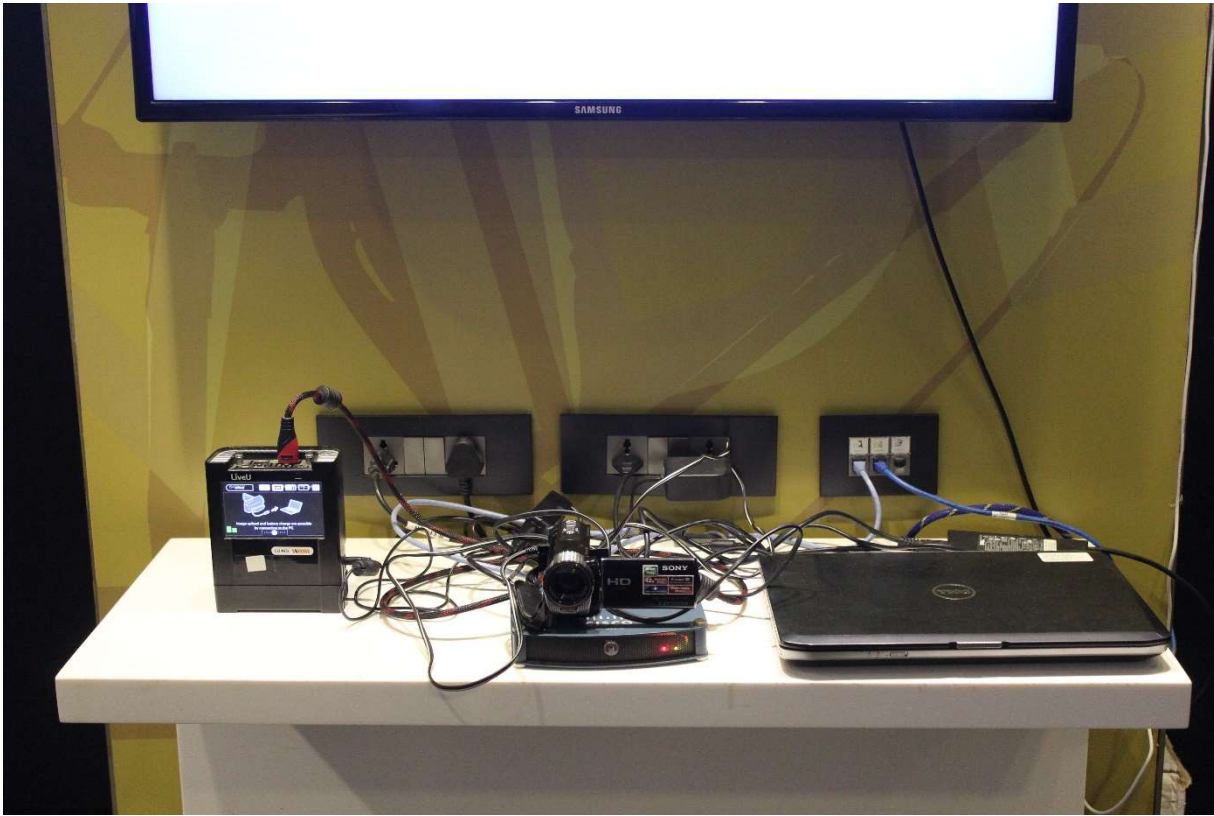
ASIC/Chip Details : 28nm technology node, TSMC ; Die Size : 23mm x 23mm ; ~ 200Mn gate count , Pin count : 300+

DFT : Role and Responsibility :
DFT Complexity : Average scan cell per chain : 50000+ ; ~100+ scan chain
Scan insertion : Fullchip ATPG, MBIST, LBIST, IO tests. Different mise tests like PLL, PMRO, Thermal Sensor, Chip ID and PVT. Power aware ATPG (20% switching) and coverage 99% in SSA and 85% in TR and pattern validation
Silicon turn-on and post-silicon debug activity including tester failure analysis and solution.
Solution offered for challenges shown below
• Chip Failing on the tester due to issue in compression mode logic. Challenge of debugging the issue with 100X compression.

Chips to be used in highly advanced and efficient routers.



***IoT Xcelerator** is a unique framework that combines software for multi-protocol gateways, data analysis platforms, hardware for gateways and edge computing, and the entire IOT Server framework along with the business application solutions. The framework encapsulates the full maturity cycle from Smart Sensors to Gateways to Cloud and to Smart Analytics.*



This is a product named black box which records videos and GPS location continuously in loop while you are driving vehicle it also helps in vehicle and path retractability, measures speed and ensures passenger safety.



This is a smart board which can send, read, display and exchange information with a laptop enhancing teaching and learning experience.

After visiting the marketing section and seeing various high tech products developed by einfochips and how they make people's life more comfortable and secured, students went for lunch provided by company.



Q&A SESSION:

Around 2 pm we came back to seminar hall after finishing lunch, for questions and answer session where students could interact with industrial experts who answered all the questions and doubts held by students. Experts also shared their valuable knowledge and experience with students and teachers which helped the students and teachers to look beyond their conventional education and provided a quick insight into future of technology.



Around 3 pm question and answer session was over, all the students were greatly satisfied by hospitality, knowledge and inspiration provided by eInfochips to BVM students it was such a great experience. Students were now headed towards much awaited trip to ISRO Ahmedabad



INDUSTRY PROFILE:

ISRO is the primary agency under the Department of Space, Govt. of India, for executing space programmes. The Indian space program starts around 1962, with the sincere effort of Vikram Sarabhai who is known as the father of the Indian space program. ISRO undertook demonstration of space applications for communication, broadcasting and remote sensing. The success story of ISRO starts when it launches its first satellite Aryabhata in collaboration with Russia. Initially ISRO used to launch its satellite in collaboration with US, and Russian countries but later because of the fast exploration and interest in space it begins to launch self-made satellites in Indian made Rockets. The series of satellites used were PSLV, GSLV, etc. ISRO has its unique mark among all other space research organizations throughout the world. Even the western countries seek the help of ISRO for their space missions. But now ISRO successfully sent Chandrayaan-1 spacecraft to moon in November 2008 which makes India, the fourth individual country to send a probe to the lunar surface. satellite in collaboration with US, and Russian countries but later because of the fast exploration and interest in space it begins to launch self-made satellites in Indian made Rockets. The series of satellites used were PSLV, GSLV, etc. ISRO has its unique mark among all other space research organizations throughout the world. Even the western countries seek the help of ISRO for their space missions. But now ISRO successfully sent Chandrayaan-1 spacecraft to moon in November 2008 which makes India, the fourth individual country to send a probe to the lunar surface.

Overview:

Space Applications Centre (SAC), is a major research and development centre of the Indian Space Research Organisation (ISRO). It plays a key role in realizing vision and mission of ISRO. Located at Ahmedabad, SAC is spread across two campuses having multi-disciplinary activities.

The core competence of the centre lies in development of space borne and air borne instruments/payloads and their applications for national development and societal benefits. These applications are in diverse areas and primarily meet the communication, navigation and remote sensing needs of the country. Besides these, the centre also contributes significantly in scientific and planetary missions of ISRO like Chandrayan-1, Mars Orbiter Mission etc.

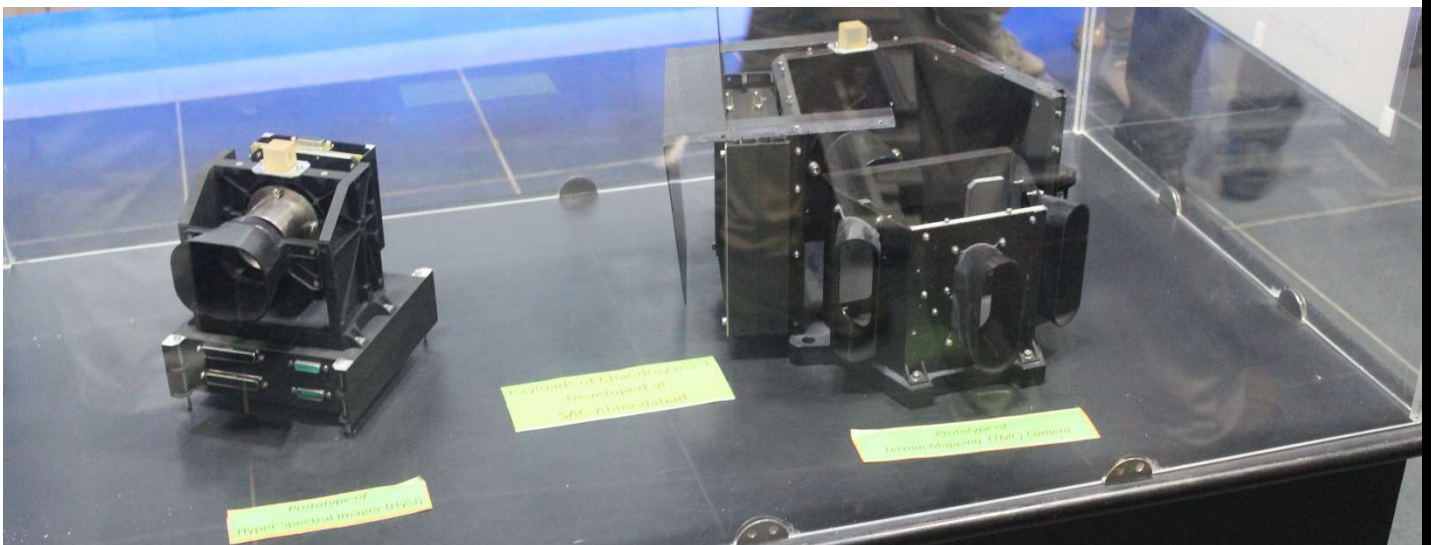
The communication transponders developed at this centre for Indian National Satellite (INSAT) and Geo Synchronous Satellite (GSAT) series of satellites are used by government and private sector for VSAT, DTH, internet, broadcasting, telephony etc. These satellites are instrumental in reaching remote parts of the country. The payloads for major navigation systems of the country - Indian Regional Navigation Satellite System (IRNSS) and GPS Aided Geo Augmented Navigation (GAGAN) are being developed by this centre.

This centre designs and develops the optical and microwave sensors for the satellites, signal and image processing software, GIS software and many applications for Earth Observation (EO) programme of ISRO. These applications are in diverse areas of Geosciences, Agriculture, Environment and Climate Change, Physical

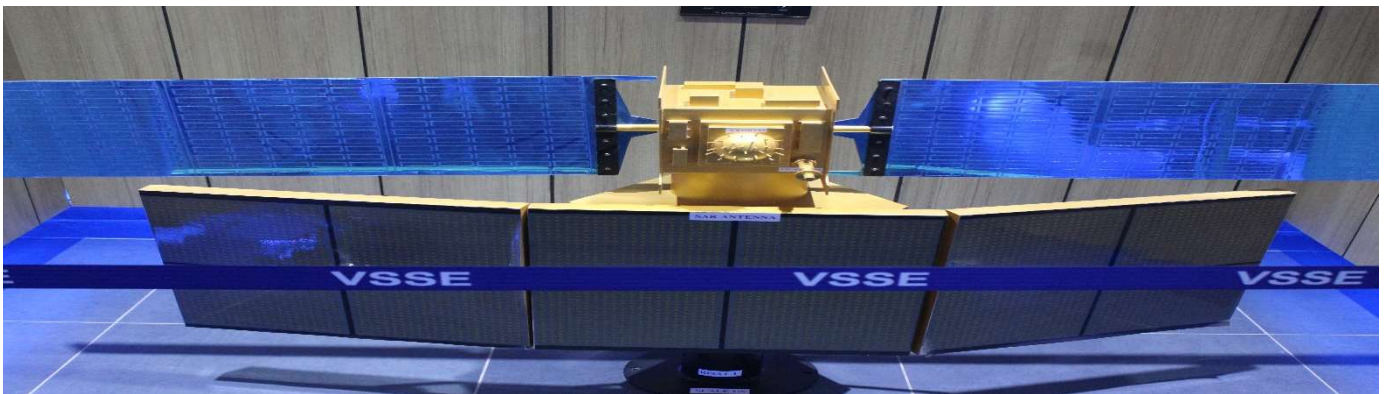
Oceanography, Biological Oceanography, Atmosphere, Cryosphere, Hydrosphere etc.

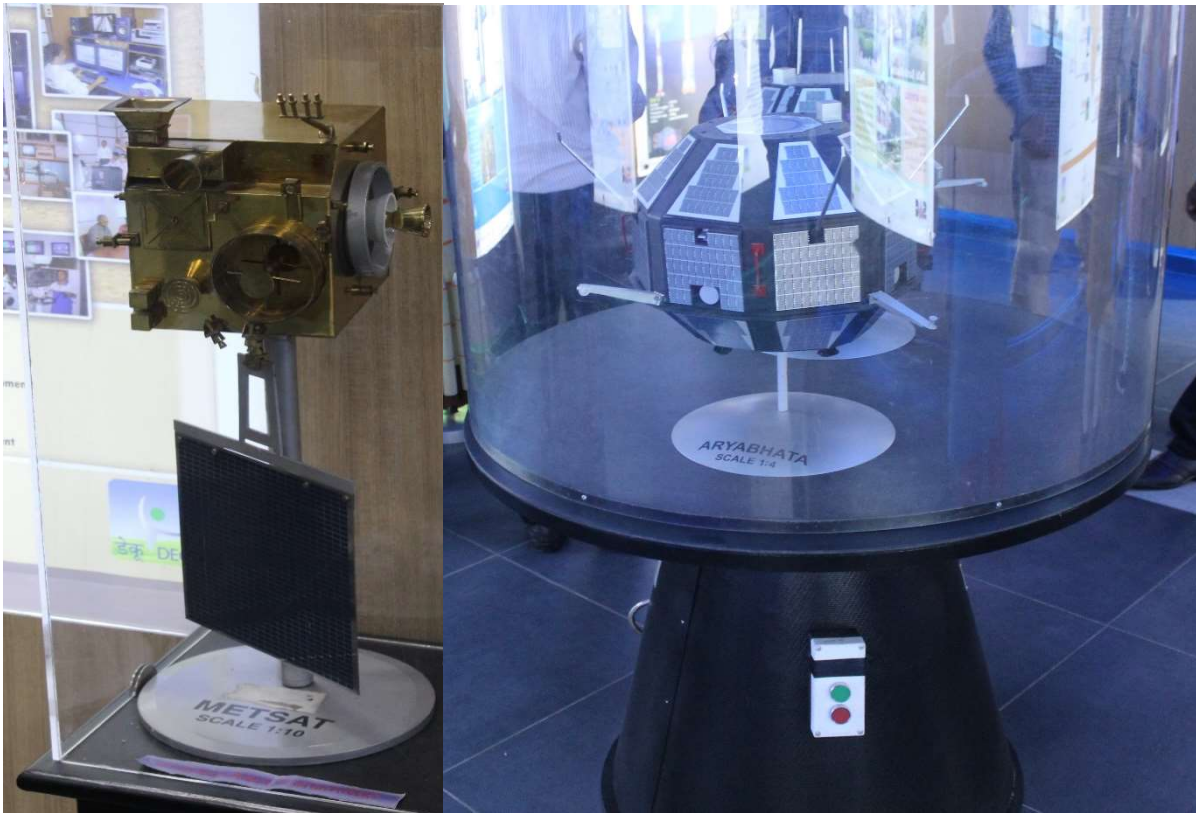
The facilities at SAC includes highly sophisticated payload integration laboratories, electronic and mechanical fabrication facilities, environmental test facilities, systems reliability/assurance group, image processing and analysis facilities, project management support group and a well-stocked library. SAC has active collaborations with industry, academia, national and international institutes for research and development. The centre also has state-of-art in-house and mobile exhibitions to propagate space technology and applications amongst students and public.

The Centre also conducts nine-month post graduate diploma courses for students from the Asia Pacific region under the aegis of the Centre for Space Science and Technology Education (CSSTEAP) in satellite meteorology and communication.









GENESIS AND HISTORY:

The genesis of the centre dates to 1966, with establishment of the Experimental Satellite Communication Earth Station (ESCES), by late Dr. Vikram Sarabhai in Ahmedabad. It was an experimental Earth Station and training centre where scientists and engineers of India and other developing countries could receive training and first-hand experience in the design, development and operations of an earth station for communications and broadcasting.

Later in 1972, the different units of ISRO in Ahmedabad pursuing research in applications of space technology were merged to form SAC. During 1975-76 a unique experiment called the Satellite Instructional Television Experiment (SITE) was conducted by SAC/ISRO utilizing the American ATS-6 satellite. This involved telecasting educational programmes aimed at socio-economic development of rural

India, which covered 2400 villages - spread over six states - through experimental Direct Reception Sets. SITE was followed by communication techniques developmental project called Satellite Telecommunications Experiments Projects (STEP), carried out with the Franco-German satellite, Symphony.

The payload for first experimental communication satellite of India, 'APPLE' was designed, fabricated and qualified at SAC. It was launched on board the first experimental flight of the Arian. An exhaustive communication applications programme called the APPLE Utilization Programme (AUP) was also conceived and carried out.

The INSAT-1 series of satellite was custom designed and made as per the unique requirements of the country by a US company. The INSAT 2A, 2B, 2C, 2D and 2E, launched in the years 1992, 1993, 1995, 1997 and 1999 respectively, were designed, fabricated and qualified / indigenously at SAC.



સુદૂર સંવેદન નો પરિચય

INTRODUCTION TO REMOTE SENSING

અવકાશ વિજ્ઞાનની ભાષામાં સુદૂર સંવેદન અથવા પૃથ્વીનું અવલોકન એ એવી પ્રક્રિયા છે કે જેના દ્વારા પૃથ્વીની સપાટીની જાણકારી સંપાદીને સીધા સ્પર્શ કર્યા વગર જ તેની પરાવર્તિત કે ઉત્સર્જિત ઊર્જા નું સંવેદન અને રેકોર્ડિંગ કરી તેનું વિશ્લેષણ કરી મેળવવામાં આવે છે અને ત્યાર બાદ આ જાણકારીનો ઉપયોગ સુદૂર સંવેદક કહેવાય.

Remote sensing or earth observation, is the process of obtaining information about the Earth's surface without being in direct contact with it by sensing and recording reflected or emitted energy and processing, analyzing, and applying that information. Our eyes and ears are remote sensors and so are cameras, microphones and many other instruments.

ભારતમાં સુદૂર સંવેદનની શરૂઆત: એક ઐતિહાસિક અંખી

HISTORIC OVERVIEW : HOW IT BEGAN IN INDIA

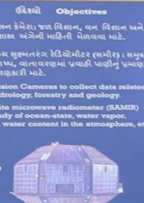


ગોલ્ડન કોકોન રોટ વીલ ડિસીઝ ડેટેક્ટિંગ કોલર ઇન્ફ્રારેડ ફિલ્મ ના ઉપયોગથી 1970ના દાયકામાં અધીરામ રૂબીન (કેમ્બી) દ્વારા ૪૦૦ મીટરની ઊંચાઈ પરથી લેવાઈ ગઈ.

Detecting Coconut Root Wilt Disease using Color Infrared Film in 1970s by Prof. P. R. Pisharoty.

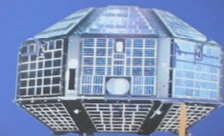


ભાસ્કર - 1 અને ભાસ્કર - 2 : આ બે પ્રાયોગિક સુદૂર સંવેદક ઉપગ્રહોએ ભારતના સુદૂર સંવેદન ક્ષેત્રમાં પાયા નાખ્યો.
Bhaskara-1 and Bhaskara-2 : Experimental Remote Sensing Satellites
The foundation for the Indian Remote Sensing Programme.
01/03/72 - 1 : જુન 17, 1979
01/03/72 - 2 : નવેમ્બર 20, 1981
Bhaskara 1 : June 17, 1979
Bhaskara 2 : November 20, 1981



લક્ષ્યો Objectives

1. ટેલિવિઝન કેમેરા વાળા ઉપગ્રહ, જેમ કે સિમ્પલ અને જુનિયર ક્લાસ અરેબીક મોડિર્ન ટેલિવિઝન માટે.
2. ઉપગ્રહીય સુક્ષ્મરેખા ટેલિવિઝન (સાઈટ) : સમુદ્ર કિનારો, વાવા, વાતાવરણમાં પ્રવાહી પાણીનું પ્રમાણ વગેરેનું અભ્યાસ કરી માટે.
3. ટેલિવિઝન કેમેરા ના સહાયે સંવેદન માટે.
4. સેન્સિંગ મ્યુલ્ટિસ્પેક્ટ્રલ રેડિયોમીટર (SAMS) : સમુદ્ર, વાતાવરણ, પાણી, વગેરેનું અભ્યાસ કરી માટે.



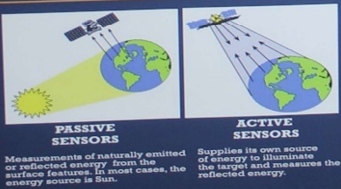
અર્યભટ્ટ : એપ્રિલ 19, 1975
8 ટોનનું, અગ્રણીય અવકાશ માટે ભારતીય સરકારના અગ્રણીય પરથી આ નામ રજૂ કર્યું છે.
Aryabhata : April 19, 1975
8-ton astronomy
Named after 7th century Indian astronomer.

સુદૂર સંવેદન શા માટે?

1. કુદરતી અને માનવસર્જિત ક્ષતિઓની સારી જાણ-માણસ નુકસાનને ઘટાડવા.
2. માનવજાતના આરોગ્ય અને સુખાકારી માટે પર્ણીવરણના પરિબલોનો અભ્યાસ કરવા.
3. ઊર્જાસ્રોતના પુરવઠાને મુખ્યત્વે.
4. આબોધનના સ્તર અને ભાગલાવની અસરને સમજવા, આકારણી કરવા, આગાહી કરવા, અસરને ઠંડીની બનાવવા, અને તેને અનુકૂળ થવાના ઉપાય કરવા.
5. પાણીના સ્તરની સારી સમજણ મેળવી જળસંચયના સારા પ્રબંધ માટે.
6. હવામાનને લગતી માહિતી, આગાહી અને ચેતવણી માટે.
7. પરસ્પરી, સહ અને દરિયાઈ ક્ષેત્રોમાં વાયુ સ્તર પ્રબંધ અને રક્ષણ માટે.
8. રૂબીન સમર્થક રાષ્ટ્રીય ડિજિટલ માટે અને રૂબીન કેલેન્ડર રેકવરના પ્રયાસને ટેકો આપવા.
9. જીવ વિવિધતાને સમજવા, કાર્યરત રાખવા અને તેના સંરક્ષણ માટેના પ્રયાસને ઉત્તેજન આપવા.

WHY REMOTE SENSING?

1. Reducing loss of life and property from natural and human-induced disasters.
2. Understanding environmental factors affecting human health and well-being.
3. Improving management of energy resources.
4. Understanding, assessing, predicting, mitigating, and adapting to climate variability and change.
5. Improving water resource management through better understanding of the water cycle.
6. Improving weather information, forecasting and warning.
7. Improving the management and protection of terrestrial, coastal and marine ecosystems.
8. Supporting sustainable agriculture and combating desertification.
9. Understanding, monitoring and conserving biodiversity.



PASSIVE SENSORS
Measurements of naturally emitted or reflected energy from the surface features. In most cases, the energy source is Sun.

ACTIVE SENSORS
Supplies its own source of energy to illuminate the target and measures the reflected energy.

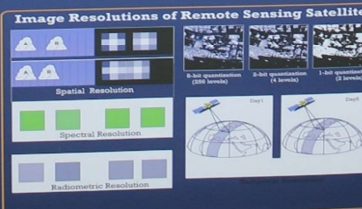


Image Resolutions of Remote Sensing Satellite

- Spatial Resolution**: 1 km resolution (1 km), 2 km resolution (2 km), 3 km resolution (3 km), 4 km resolution (4 km), 5 km resolution (5 km), 6 km resolution (6 km), 7 km resolution (7 km), 8 km resolution (8 km), 9 km resolution (9 km), 10 km resolution (10 km), 11 km resolution (11 km), 12 km resolution (12 km), 13 km resolution (13 km), 14 km resolution (14 km), 15 km resolution (15 km), 16 km resolution (16 km), 17 km resolution (17 km), 18 km resolution (18 km), 19 km resolution (19 km), 20 km resolution (20 km), 21 km resolution (21 km), 22 km resolution (22 km), 23 km resolution (23 km), 24 km resolution (24 km), 25 km resolution (25 km), 26 km resolution (26 km), 27 km resolution (27 km), 28 km resolution (28 km), 29 km resolution (29 km), 30 km resolution (30 km), 31 km resolution (31 km), 32 km resolution (32 km), 33 km resolution (33 km), 34 km resolution (34 km), 35 km resolution (35 km), 36 km resolution (36 km), 37 km resolution (37 km), 38 km resolution (38 km), 39 km resolution (39 km), 40 km resolution (40 km), 41 km resolution (41 km), 42 km resolution (42 km), 43 km resolution (43 km), 44 km resolution (44 km), 45 km resolution (45 km), 46 km resolution (46 km), 47 km resolution (47 km), 48 km resolution (48 km), 49 km resolution (49 km), 50 km resolution (50 km), 51 km resolution (51 km), 52 km resolution (52 km), 53 km resolution (53 km), 54 km resolution (54 km), 55 km resolution (55 km), 56 km resolution (56 km), 57 km resolution (57 km), 58 km resolution (58 km), 59 km resolution (59 km), 60 km resolution (60 km), 61 km resolution (61 km), 62 km resolution (62 km), 63 km resolution (63 km), 64 km resolution (64 km), 65 km resolution (65 km), 66 km resolution (66 km), 67 km resolution (67 km), 68 km resolution (68 km), 69 km resolution (69 km), 70 km resolution (70 km), 71 km resolution (71 km), 72 km resolution (72 km), 73 km resolution (73 km), 74 km resolution (74 km), 75 km resolution (75 km), 76 km resolution (76 km), 77 km resolution (77 km), 78 km resolution (78 km), 79 km resolution (79 km), 80 km resolution (80 km), 81 km resolution (81 km), 82 km resolution (82 km), 83 km resolution (83 km), 84 km resolution (84 km), 85 km resolution (85 km), 86 km resolution (86 km), 87 km resolution (87 km), 88 km resolution (88 km), 89 km resolution (89 km), 90 km resolution (90 km), 91 km resolution (91 km), 92 km resolution (92 km), 93 km resolution (93 km), 94 km resolution (94 km), 95 km resolution (95 km), 96 km resolution (96 km), 97 km resolution (97 km), 98 km resolution (98 km), 99 km resolution (99 km), 100 km resolution (100 km).
- Spectral Resolution**: 1 nm resolution (1 nm), 2 nm resolution (2 nm), 3 nm resolution (3 nm), 4 nm resolution (4 nm), 5 nm resolution (5 nm), 6 nm resolution (6 nm), 7 nm resolution (7 nm), 8 nm resolution (8 nm), 9 nm resolution (9 nm), 10 nm resolution (10 nm), 11 nm resolution (11 nm), 12 nm resolution (12 nm), 13 nm resolution (13 nm), 14 nm resolution (14 nm), 15 nm resolution (15 nm), 16 nm resolution (16 nm), 17 nm resolution (17 nm), 18 nm resolution (18 nm), 19 nm resolution (19 nm), 20 nm resolution (20 nm), 21 nm resolution (21 nm), 22 nm resolution (22 nm), 23 nm resolution (23 nm), 24 nm resolution (24 nm), 25 nm resolution (25 nm), 26 nm resolution (26 nm), 27 nm resolution (27 nm), 28 nm resolution (28 nm), 29 nm resolution (29 nm), 30 nm resolution (30 nm), 31 nm resolution (31 nm), 32 nm resolution (32 nm), 33 nm resolution (33 nm), 34 nm resolution (34 nm), 35 nm resolution (35 nm), 36 nm resolution (36 nm), 37 nm resolution (37 nm), 38 nm resolution (38 nm), 39 nm resolution (39 nm), 40 nm resolution (40 nm), 41 nm resolution (41 nm), 42 nm resolution (42 nm), 43 nm resolution (43 nm), 44 nm resolution (44 nm), 45 nm resolution (45 nm), 46 nm resolution (46 nm), 47 nm resolution (47 nm), 48 nm resolution (48 nm), 49 nm resolution (49 nm), 50 nm resolution (50 nm), 51 nm resolution (51 nm), 52 nm resolution (52 nm), 53 nm resolution (53 nm), 54 nm resolution (54 nm), 55 nm resolution (55 nm), 56 nm resolution (56 nm), 57 nm resolution (57 nm), 58 nm resolution (58 nm), 59 nm resolution (59 nm), 60 nm resolution (60 nm), 61 nm resolution (61 nm), 62 nm resolution (62 nm), 63 nm resolution (63 nm), 64 nm resolution (64 nm), 65 nm resolution (65 nm), 66 nm resolution (66 nm), 67 nm resolution (67 nm), 68 nm resolution (68 nm), 69 nm resolution (69 nm), 70 nm resolution (70 nm), 71 nm resolution (71 nm), 72 nm resolution (72 nm), 73 nm resolution (73 nm), 74 nm resolution (74 nm), 75 nm resolution (75 nm), 76 nm resolution (76 nm), 77 nm resolution (77 nm), 78 nm resolution (78 nm), 79 nm resolution (79 nm), 80 nm resolution (80 nm), 81 nm resolution (81 nm), 82 nm resolution (82 nm), 83 nm resolution (83 nm), 84 nm resolution (84 nm), 85 nm resolution (85 nm), 86 nm resolution (86 nm), 87 nm resolution (87 nm), 88 nm resolution (88 nm), 89 nm resolution (89 nm), 90 nm resolution (90 nm), 91 nm resolution (91 nm), 92 nm resolution (92 nm), 93 nm resolution (93 nm), 94 nm resolution (94 nm), 95 nm resolution (95 nm), 96 nm resolution (96 nm), 97 nm resolution (97 nm), 98 nm resolution (98 nm), 99 nm resolution (99 nm), 100 nm resolution (100 nm).
- Radiometric Resolution**: 1 bit resolution (1 bit), 2 bit resolution (2 bit), 3 bit resolution (3 bit), 4 bit resolution (4 bit), 5 bit resolution (5 bit), 6 bit resolution (6 bit), 7 bit resolution (7 bit), 8 bit resolution (8 bit), 9 bit resolution (9 bit), 10 bit resolution (10 bit), 11 bit resolution (11 bit), 12 bit resolution (12 bit), 13 bit resolution (13 bit), 14 bit resolution (14 bit), 15 bit resolution (15 bit), 16 bit resolution (16 bit), 17 bit resolution (17 bit), 18 bit resolution (18 bit), 19 bit resolution (19 bit), 20 bit resolution (20 bit), 21 bit resolution (21 bit), 22 bit resolution (22 bit), 23 bit resolution (23 bit), 24 bit resolution (24 bit), 25 bit resolution (25 bit), 26 bit resolution (26 bit), 27 bit resolution (27 bit), 28 bit resolution (28 bit), 29 bit resolution (29 bit), 30 bit resolution (30 bit), 31 bit resolution (31 bit), 32 bit resolution (32 bit), 33 bit resolution (33 bit), 34 bit resolution (34 bit), 35 bit resolution (35 bit), 36 bit resolution (36 bit), 37 bit resolution (37 bit), 38 bit resolution (38 bit), 39 bit resolution (39 bit), 40 bit resolution (40 bit), 41 bit resolution (41 bit), 42 bit resolution (42 bit), 43 bit resolution (43 bit), 44 bit resolution (44 bit), 45 bit resolution (45 bit), 46 bit resolution (46 bit), 47 bit resolution (47 bit), 48 bit resolution (48 bit), 49 bit resolution (49 bit), 50 bit resolution (50 bit), 51 bit resolution (51 bit), 52 bit resolution (52 bit), 53 bit resolution (53 bit), 54 bit resolution (54 bit), 55 bit resolution (55 bit), 56 bit resolution (56 bit), 57 bit resolution (57 bit), 58 bit resolution (58 bit), 59 bit resolution (59 bit), 60 bit resolution (60 bit), 61 bit resolution (61 bit), 62 bit resolution (62 bit), 63 bit resolution (63 bit), 64 bit resolution (64 bit), 65 bit resolution (65 bit), 66 bit resolution (66 bit), 67 bit resolution (67 bit), 68 bit resolution (68 bit), 69 bit resolution (69 bit), 70 bit resolution (70 bit), 71 bit resolution (71 bit), 72 bit resolution (72 bit), 73 bit resolution (73 bit), 74 bit resolution (74 bit), 75 bit resolution (75 bit), 76 bit resolution (76 bit), 77 bit resolution (77 bit), 78 bit resolution (78 bit), 79 bit resolution (79 bit), 80 bit resolution (80 bit), 81 bit resolution (81 bit), 82 bit resolution (82 bit), 83 bit resolution (83 bit), 84 bit resolution (84 bit), 85 bit resolution (85 bit), 86 bit resolution (86 bit), 87 bit resolution (87 bit), 88 bit resolution (88 bit), 89 bit resolution (89 bit), 90 bit resolution (90 bit), 91 bit resolution (91 bit), 92 bit resolution (92 bit), 93 bit resolution (93 bit), 94 bit resolution (94 bit), 95 bit resolution (95 bit), 96 bit resolution (96 bit), 97 bit resolution (97 bit), 98 bit resolution (98 bit), 99 bit resolution (99 bit), 100 bit resolution (100 bit).
- Temporal Resolution**: 1 day resolution (1 day), 2 day resolution (2 day), 3 day resolution (3 day), 4 day resolution (4 day), 5 day resolution (5 day), 6 day resolution (6 day), 7 day resolution (7 day), 8 day resolution (8 day), 9 day resolution (9 day), 10 day resolution (10 day), 11 day resolution (11 day), 12 day resolution (12 day), 13 day resolution (13 day), 14 day resolution (14 day), 15 day resolution (15 day), 16 day resolution (16 day), 17 day resolution (17 day), 18 day resolution (18 day), 19 day resolution (19 day), 20 day resolution (20 day), 21 day resolution (21 day), 22 day resolution (22 day), 23 day resolution (23 day), 24 day resolution (24 day), 25 day resolution (25 day), 26 day resolution (26 day), 27 day resolution (27 day), 28 day resolution (28 day), 29 day resolution (29 day), 30 day resolution (30 day), 31 day resolution (31 day), 32 day resolution (32 day), 33 day resolution (33 day), 34 day resolution (34 day), 35 day resolution (35 day), 36 day resolution (36 day), 37 day resolution (37 day), 38 day resolution (38 day), 39 day resolution (39 day), 40 day resolution (40 day), 41 day resolution (41 day), 42 day resolution (42 day), 43 day resolution (43 day), 44 day resolution (44 day), 45 day resolution (45 day), 46 day resolution (46 day), 47 day resolution (47 day), 48 day resolution (48 day), 49 day resolution (49 day), 50 day resolution (50 day), 51 day resolution (51 day), 52 day resolution (52 day), 53 day resolution (53 day), 54 day resolution (54 day), 55 day resolution (55 day), 56 day resolution (56 day), 57 day resolution (57 day), 58 day resolution (58 day), 59 day resolution (59 day), 60 day resolution (60 day), 61 day resolution (61 day), 62 day resolution (62 day), 63 day resolution (63 day), 64 day resolution (64 day), 65 day resolution (65 day), 66 day resolution (66 day), 67 day resolution (67 day), 68 day resolution (68 day), 69 day resolution (69 day), 70 day resolution (70 day), 71 day resolution (71 day), 72 day resolution (72 day), 73 day resolution (73 day), 74 day resolution (74 day), 75 day resolution (75 day), 76 day resolution (76 day), 77 day resolution (77 day), 78 day resolution (78 day), 79 day resolution (79 day), 80 day resolution (80 day), 81 day resolution (81 day), 82 day resolution (82 day), 83 day resolution (83 day), 84 day resolution (84 day), 85 day resolution (85 day), 86 day resolution (86 day), 87 day resolution (87 day), 88 day resolution (88 day), 89 day resolution (89 day), 90 day resolution (90 day), 91 day resolution (91 day), 92 day resolution (92 day), 93 day resolution (93 day), 94 day resolution (94 day), 95 day resolution (95 day), 96 day resolution (96 day), 97 day resolution (97 day), 98 day resolution (98 day), 99 day resolution (99 day), 100 day resolution (100 day).

સુદૂર સંવેદનના ફાયદાઓ:

1. એકી સાથે ઘણા મોટા વિસ્તારનું સંકલિત કે સરળ બતાવવાનું કાર્ય કરે છે.
2. અદ્યતન પર્ણીવરણના સ્તરના તથા વિસ્તારની માહિતી મળી શકે છે.
3. ઝડપી અને ચોક્કસ માહિતી.
4. આ માહિતી વારંવાર મેળવી શકાય છે.

ADVANTAGES OF REMOTE SENSING

1. Synoptic View
2. Access to inaccessible areas
3. Speed and accuracy
4. Repeatability



The present remote sensing programme of ISRO started in early 1970s. Payload development at SAC was started with balloon experiments followed by aerial photography for remote sensing. At the same time activities were also carried in the field of meteorology with available data from foreign satellites and from indigenously developed airborne thermal scanner.

The first phase saw the development of airborne thermal sensors, multispectral scanner, linear Charge Coupled Device (CCD) camera, Side Looking Radar, Colour Infrared (CIR) based photographic systems and several photo interpretation and ground truth equipment.

Based on above initial work, a strong applications programme was evolved around these instruments. Foundations for space borne sensors were laid during this period. Under the programme 'Satellite for Earth Observation (SEO)', two satellites were launched and called Bhaskara satellites after their Launch on board Russian launch Vehicle. Bhaskara carried a 1 km resolution 2 TV camera systems and a three channel microwave radiometer. These were designed, developed and successfully qualified in house. Bhaskara I and II were the first Indian Meteorological satellites which carried microwave radiometer called SAMIR to provide information on sea state and atmospheric water vapour content for use in meteorological studies.

The second phase in 1980s witnessed the results of earlier efforts of experimental satellites. The IRS 1A programme was successfully launched and the users started receiving multispectral imagery with 36m resolution. Major applications in agriculture, hydrology, geology and other areas were defined in close interaction with user agencies and the IRS utilization programme was carried out successfully. These efforts led to semi-operational applications of IRS 1A data.

ભારતના પ્રમોચનયાન INDIAN LAUNCH VEHICLES

- ભારતે બે પ્રાયોગિક પ્રમોચનયાન એસ.એલ.વી. અને એ.એસ.એલ.વી. વિકસાવ્યા છે.
- 1997 માં ધ્રુવીય ઉપગ્રહ પ્રમોચનયાન કાર્યરત થયું, જે આજે ભારત માટે વર્કહોર્સ સાબિત થયું છે.
- 1994-2015 (જુલાઈ 10, 2015) દરમિયાન આ યાને 29 સફળ પ્રમોચન કર્યા છે.
- એસ.એલ.વી માર્ક-2 માં સ્વદેશમાં વિકસાવાયેલું તથા ચકાસાયેલું ઉડ્ડયન માટેનું 'કાયોજેનિક એજિન' છે.
- વધુ સક્ષમ અને કાર્યક્ષમ એસ.એલ.વી માર્ક-3 નું પ્રથમ પ્રાયોગિક ઉપ-કક્ષીય ઉડ્ડયન ડીસેમ્બર 18, 2014 ના દિવસે સફળ રહ્યું હતું.
- India developed two experimental satellite launch vehicles, SLV-3 and ASLV.
- Polar Satellite Launch Vehicle (PSLV), commissioned in 1997, has emerged as the workhorse launch vehicle of India.
- During 1994-2015 (July 10, 2015) period, PSLV has had 29 successful flights.
- Geosynchronous Satellite Launch Vehicle (GSLV-Mk II) was commissioned after its second successful flight in May 2003.
- GSLV-Mk II has indigenously developed flight proven Cryogenic Upper Stage.
- More capable and efficient LVM3 had its first experimental sub-orbital flight on December 18, 2014 which was a success.

PSLV (Standard configuration)

Height : 44m
Lift-off weight : 295t
Propulsion : Solid, Liquid
Payload mass : 1650kg
Orbit : 630 km
Sun Synchronous
Polar Orbit
(1050 kg in Geosynchronous Transfer orbit)

GSLV

Height : 49m
Lift-off weight : 414t
Propulsion : Solid, Liquid & Cryogenic
Payload mass : 2200kg
Orbit : Geosynchronous Transfer Orbit (GTO)

SLV-3

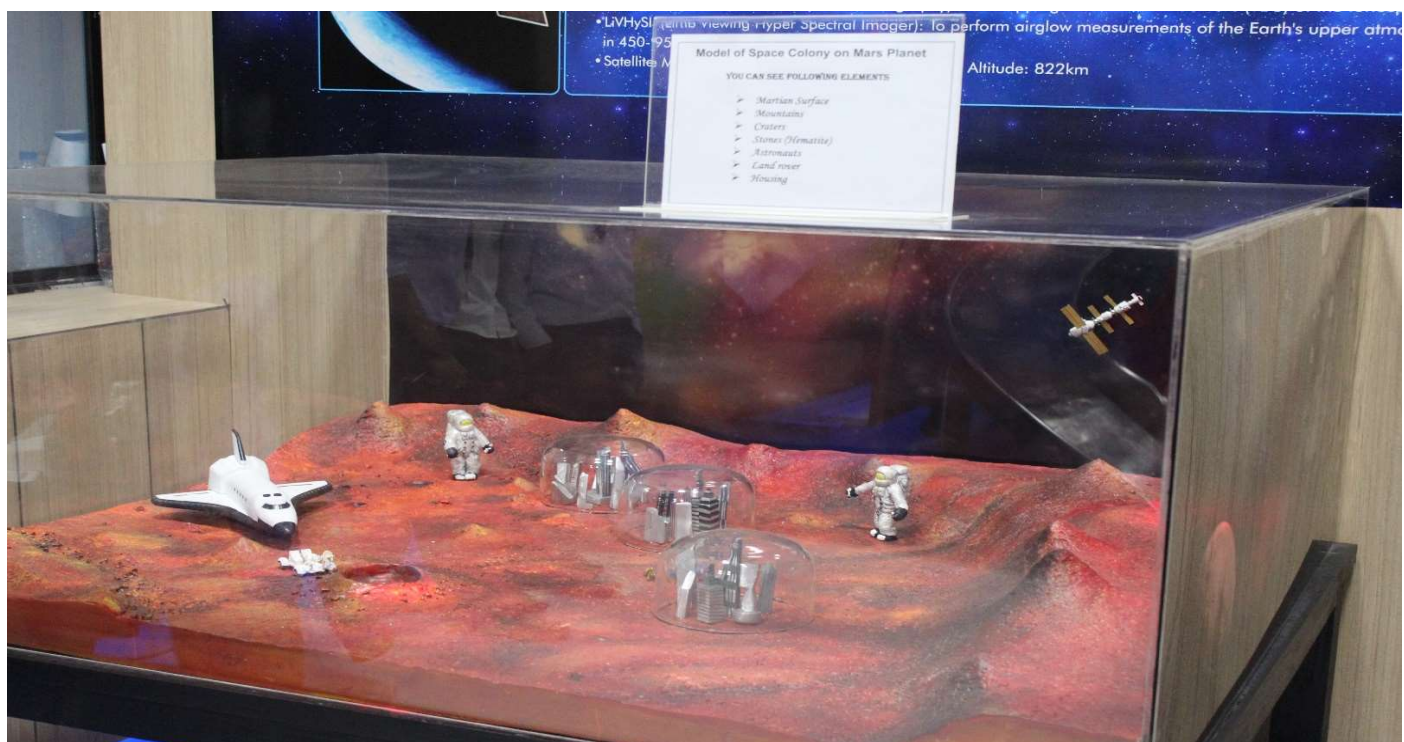
Height : 22.7m
Lift-off weight : 17t
Propulsion : All Solid
Payload mass : 40kg
Orbit : Low Earth Orbit

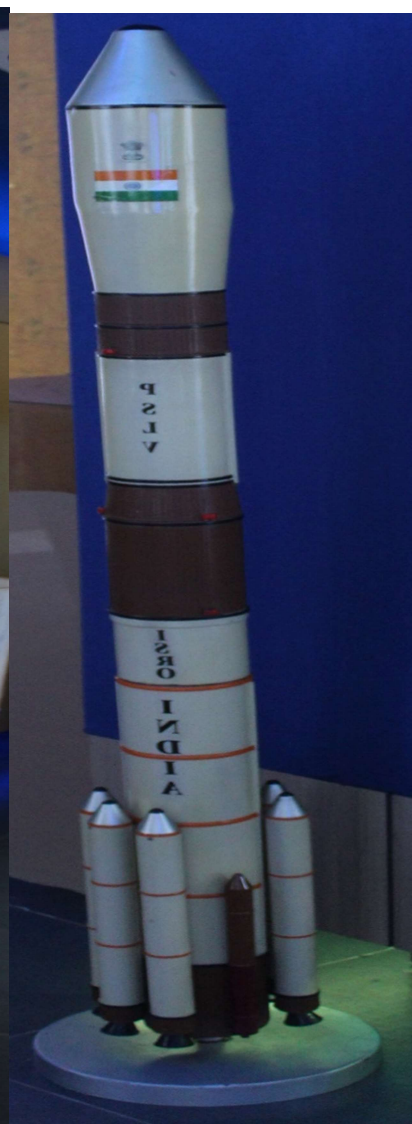
ASLV

Height : 23.5m
Lift-off weight : 39t
Propulsion : All Solid
Payload mass : 150kg
Orbit : PLow Earth Orbit (LEO)

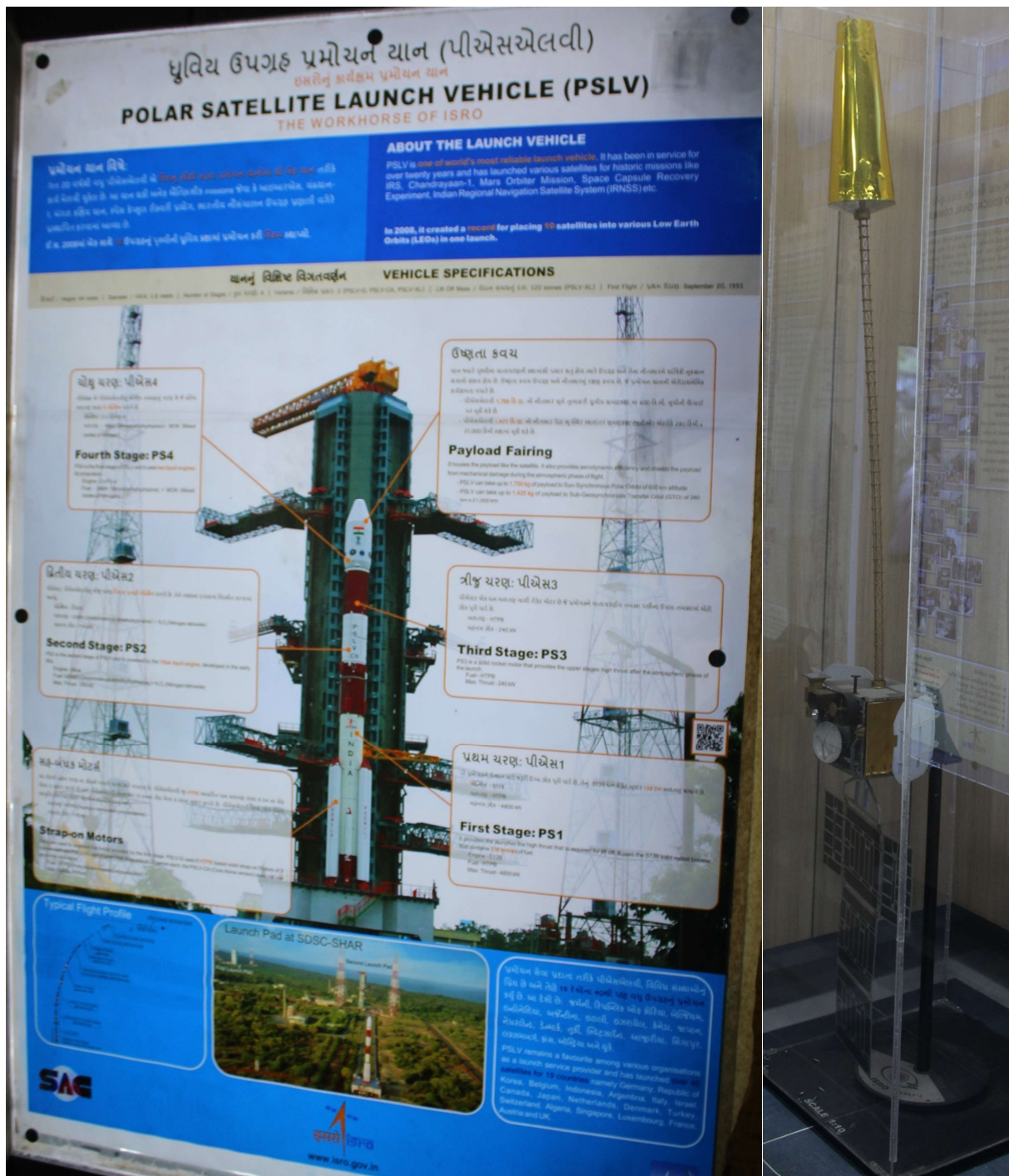
LVM3

Height : 43.4m
Lift-off weight : 630.6t
Payload mass : 4t into GTO
10t into LEO





INDUSTRIAL VISIT UNDER IEEE



Strong foundation was also laid for airborne SAR system development, its data processing and applications at SAC. The advanced activities carried out at the centre during the third phase in 1990s put India at par with many other advanced nations through the design of high resolution sensors in the optical and microwave regions including a successfully flown airborne SAR system and a very sophisticated application programme tuned to our country's needs. The 5.8 m resolution Pan

Camera of IRC 1C & 1D revolutionized the applications concept in the country. Being the best resolution civilian sensor in the world at that time, it attracted the attention of foreign users.

SAC has state of the art General Circulation Models for experimentation with satellite data. Prediction of weather in the extended range and prediction of Ocean state in the short range are the fields of active research.

ભારતીય પ્રાદેશિક નૌવહન ઉપગ્રહ પદ્ધતિ (આઈઆરએનએસએસ) Indian Regional Navigation Satellite System (IRNSS)

આઈઆરએનએસએસ એ ઇસરોની પહેલ છે ભારતીય પ્રદેશમાં વપરાશકર્તાને ચોક્કસ સ્થિતિ, ગતિ અને સમયની જાણ કરવા માટે એક સ્વતંત્ર ઉપગ્રહ નૌવહન પદ્ધતિની રચના કરવાની. આ પદ્ધતિથી વપરાશકર્તાને નિશ્ચિત સ્થિતિની ચોક્કસાઈ ૨૦ મીટર કરતા સારી મળશે.

પ્રાથમિક સેવા વિસ્તારમાં ભારતનું ભૂમિ ક્ષેત્ર અને ભારતીય ભૌગોલિક-રાજકીય સરહદથી ૧૫૦૦ કિ.મી. સામેલ છે. વર્ણિત સેવા વિસ્તાર માં અક્ષાંશ ૩૦ દક્ષિણ થી ૫૦ ઉત્તર અને રેખાંશ ૭૦ પૂર્વ થી ૧૩૦ પૂર્વ સામેલ છે.

આઈઆરએનએસએસ બે પ્રકારની સેવાઓ આપે છે - પ્રમાણભૂત સ્થિતિ સેવા (સ્ટાન્ડર્ડ પોઝિશનિંગ સેવા, પ્રતિબંધિત સેવા (આરએસ) આઈઆરએનએસએસનું અવકાશી માળખું સાત ઉપગ્રહોનું બનેલું છે. જેમાંથી ત્રણ ઉપગ્રહ ભૂ-સ્થિર કક્ષામાં રહેશે.

The IRNSS is ISRO initiative to build an independent satellite navigation system to provide precise Position, Velocity and Time to users over the Indian region. IRNSS provides the user with a targeted position accuracy of better than 20m.

The primary service area includes Indian land mass and 1500 km from Indian Geo political boundary. The extended service area covering Lat: 30 degree South to 50 degree North and Long: 30 degree East to 130 degree East.

IRNSS provides two types of services, namely Standard Positioning Service (SPS) and Restricted Services (RS)

The space segment consists of the IRNSS constellation of seven satellites. Three satellites will be located in geostationary orbit and the remaining four will be located in geosynchronous orbits.

Ground Segment

IRNSS ground segment is responsible for navigation parameter generation and transmission, satellite control, ranging and integrity monitoring and time keeping.

ભૂમિગત માળખું આઈઆરએનએસએસનું ભૂમિગત માળખું નૌવહન મશકન સર્જન તથા પસારણ, ઉપગ્રહ નિયંત્રણ ઇન્ફ્રાગ્રી મોનીટરિંગ વધા સમય પ્રણાલીની જવાબદારી નિભાવે છે.

INC at Bhatlu
Central Processing Facility of IRNSS for generation of Navigation Broadcast Data

IRNSS Payload Elements developed at SAC

પ્રદાયકાર - આઈઆરએનએસએસ ઉપગ્રહો બે પ્રકારના પ્રદાયકાર લઈ જાય છે.

નૌવહન પ્રદાયકાર વપરાશકર્તા માટે નૌવહન સેવા સંકેતો પ્રમાણિત કરે છે. બેલ-પ બેન્ડ અને એસ બેન્ડ માં કાર્યરત એકદમ ચોક્કસ રૂબીડીયમ આણ્વિક ધડકાયાળ દ્વારા ચાલિત.

અંતર પ્રદાયકાર: ઉપગ્રહના અંતરનો ચોક્કસ નિર્ણય કરવા માટે સી બેન્ડ ટ્રાન્સપોન્ડર લેસર રેન્જિંગ માટે કોર્નર ક્યુબ રેટો રીફ્લેક્ટર

IRNSS Payloads
IRNSS satellites carries two types of payloads.

Navigation payload contains:
Transmits navigation service signals to the users. Operates in L5 band and S band. Driven by highly accurate Rubidium atomic clock.

Ranging payload contains:
C-band transponder for accurate determination of the range of the satellite. Corner Cube Retro Reflectors for laser ranging.

Navigation Signal Generation Unit S-Band Modulator & Up-Converter

L5-Band Driver Amplifier S-Band Output Filter

IRNSS Architecture

IRNSS Architecture (17)

IRNSS Architecture (17)

IRNSS Architecture (17)

આઈઆરએનએસએસના કેટલાક ઉપયોગો

- ધરતી ક્ષણે અને સમુદ્રી નૌવહન
- ભૂમિગત મશકન
- વાહનોનું પેલેડી મોનિટરિંગ અને કાર્યકારનું સંચાલન
- પરિવારિક ક્ષેત્ર સાથે એકત્રીકરણ
- ચોક્કસ સમય
- અવકાશ અને ભૂમિગત મશકન માટે કાર્યકારની મદદ
- કરમાર અને કાર્યકારનું મોનિટરિંગ
- સાલકો માટે કાચ અને કાચકારનું નૌવહન

Applications

- Terrestrial, Aerial and Marine Navigation
- Disaster Management
- Vehicle tracking and fleet management
- Integration with mobile phones
- Precise Timing
- Mapping and Geodetic data capture
- Terrestrial navigation and for hikers and travellers
- Visual and voice navigation for drivers

Simulator Test Setup IRNSS Simulator IRNSS User Receivers

ISRO

We left ISRO around 5pm with a deep desire to know life beyond earth and strong intention and inspiration to do something for our motherland and make world a better place for everyone. We reached back to college at 7:30 pm

STUDENT'S FEEDBACK AND CONCLUSION:

Educational industrial visit to ISRO & eInfochips Ltd (India) Ahmedabad, Gujarat. The guiding staff both college as well as site staff was very supportive to all students.

We know that this visit will help us in our future practical and corporate life and brought a positive change in our thinking and practical behaviour regarding Education and specially Engineering.

We, the Students of BVM Electronics and Telecommunication Engineering are extremely thankful to

- *Honourable Principal of BVM: Dr. IN Patel*
- *HOD (ET): Dr. MB Shah*
- *Staff coordinators: prof. Darshan Dalwadi
prof. Mayur Sevak
prof. Kaushal Patel*
- *Student coordinators: Drupad Pandya
Shaivil Patel
Chinmay Raval
Yogesh Iyer*
- *ET Engineering Department*

We hope this type of knowledge & experience enhancing industrial visits are organised in future again, we are thankful for it.

PREPARED BY: Drupad Pandya(BVM-ET-sem5)



**A Report
On
Industrial Visit
of**



“Campus Radio station”

at

15th February 2019

Sponsored by

(IEEE Student Chapter, Gujarat Section)

Organized at

Electronica & Communication

Department

BVM Engineering College

(Affiliated to Gujarat Technological University)

(An Autonomous CVM Institution)

● **Summary Table**

Title of the Visit:	Industrial Visit to Campus Radio Station 90.4 Mhz at S.P.U VVNagar		
Name and Designation of Experts:	Name		Designation
	Prof. Mayur sevak		Asst. Professor
Organization and Department of Experts:	Sr.No	Organization Name	Department
		BVM Engineering College	EC
Contact Information of Experts:	Sr.No	Contact No	Email Id
	1	+91 7575884675	mayur.sevak@bvmengineering.ac.in
Name of Principal of the Institute:	Dr. Indrajit Patel		
Name of Head of the Department:	Dr. B.C Goradiya		
Year/Semester of the Students	All Engineering Branch of 6 th Semester		
Specific Subject under which Seminar organized:	Applied Electronics (Open Elective)		
Professional body under which seminar organized:	Prof. Darshan Dalwadi, IEEE Student Chapter, Gujarat Section		
Venue Name:	Campus radio station 90.4 FM,S P University		
No of Days for Seminar/workshop/Visit:	01		
Staff Coordinator's Name:	1	Prof. Mayur sevak	
Total No of Students:	15		

Objective: To understand the working principle of FM broadcasting.

Expected Outcome:1-working principle of transducer(mic)
2-working principle of the mixture console
3-understanding transmitter
4-working principle antenna

5-working of station monitor
6-working of audio editing

INTRODUCTION

CAMPUS RADIO STATION was started in 21 FEB 2005 and is run by S P University, v v nagar

TRANSMITTER:-

It's the RF section from the FM signal is transmitted. its input is audio System and output signal is FM of 50 W. it also consists of 5 cd player which provide the facility of converting the cassette tracks to CD as well as vice versa. That system is utilized 10 years back



ANTENNA



(Transmitting antenna)

The amplified signal is transmitter to the antenna for broadcasting.

The specification are-Tower height: 30 meter

Antenna height: 3 meter

Campus radio station has a 3 dipole vertically polarized Omni direction antenna

MIXTURE Console:

Campus radio station uses the Pc board multifunction console & 32 channel input can be accommodated (tracks)



(Mixture with PC)

Microphone:

The MIC Company was from CAD Also with proportional grade and its condense mic



(Mic)

The mic was placed in the completely isolated room from the outside noise

Studio monitor:

SM which uses to provides the real time recoding of the programs.



(Studio monitor with speakers)

Audio editing software



In the visit we get to see how Cubase-SEL command visual works as editor.

Distribution amplifier

The input from CD player or computer is distributed to 4 channel for amplification

Attendance Report:

NAME,	ID NO.,	BRANCH,	EMAIL ID,	CONTACT NO.
KETAN KHUSHWAH,	16PE023,	Production,	kushwahketan11@gmail.com,	8200180015
PATEL PREER,	17ME309,	Mechanical,	patelpreet648@gmail.com,	8264065636
MAULIK VITHALAPARA,	16CE120,	Civil Eng,	maulik.c.vithalapara862@gmail.com,	9913336233
APARNATHI HARSUKHGIRI,	16EE056,	Electrical ,	kuldipaparnathi147@gmail.com,	9510205723
JADAV KUNDANBHAI,	16EE022,	EE,	ykjadav32@gmail.com,	7698704015
CHAUHAN AJAY,	17CP313,	Computer,	ajay1238910@gmail.com,	9408724020
DHARMIK KAKLOTAR,	17ME607,	Mechanical,	dharmikjk777@gmail.com,	8000717264
SONAGARA RAJESH,	16CE115,	CIVIL,	rajesh.sonagara96@gmail.com,	8758746743
NIKHIL MODI,	17PE301,	PRODUCTION ENG,	nikhilmodi31@hotmail.com,	7359238523
RANA JAYESHKUMAT,	17ME311,	Mechanical,	ranakrunal660@gmail.com,	7041938041
PANKHANIYA AKASH,	17EE301,	ELECTRICAL,	akashpankhaniya31@gmail.com,	8153858347
VAGHASIYA MANTHAN,	17CE314,	Civil,	manthanvaghasiya3@gmail.com,	8238304976
HINGRAJIYA PARIN,	17CE310,	CIVIL,	parinhingrajiya@gmail.com,	8866663445
MAVANI TUHINKUMAR,	16CE118,	Civil,	tuhinmavani1727@gmail.com,	9879636508
KAGATHARA HARSHAD,	16CE095,	Civil,	kagatharaharshad2612@gmail.com,	7486899201
CHUDASAMA AMIT,	17ME321,	MECHANICAL,	amitchudasama57@gmail.com,	9033348908
TARAPARA KISHAN,	16CP030,	Computer,	kishantarapara143@gmail.com,	9723329166
TARPARA KANAIIYA,	16CP029,	COMPUTER,	khtarapata@gmail.com,	8690521271
DHARJIYA KOMALBEN,	16EE052,	Electrical,	komalधारजाया@gmail.com,	9737434026
TANDEL DRASTI,	16EE205,	Electrical,	drastitandel19299@gmail.com,	8238809691
KODIYATAR NILESH,	17EE305,	ELECTRICAL,	kodiyatarnilesh35@gmail.com,	9727911175
SINGH NISHA RANJIT,	17ee313,	Electrical,	nisharanjitsingh0@gmail.com,	8488979794
PATEL GAURANG,	15PE016,	PRODUCTION,	Patelg497@gmail.com,	9712606216
UJJAWAL DALWADI,	16PE004,	Production,	Ujjwaldalwadi1@gmail.com,	9512136906
SOLANKI PRIYANKKUMAR,	17ME307,	Mechanical,	solankipriyank998@gmail.com,	9537166103
KISHAN GAJJAR,	17PE312,	Production,	kishangajjarigtr@gmail.com,	9004076900
MAKADIA DHRUVKUMAR,	17CE317? ,	Civil ,	dm34788@gmail.com ,	8487070539
PARTH PATEL,	16pe403,	Production,	PbP.kadi@gmail.com,	8140316694
PANCHAL SUMITKUMAR,	17ME302,	Mechanical,	sumitpanchal556@gmail.com,	8866604196
BANSIKUMAR GANATRA,	16PE026,	Production,	bansiganatra786@gmail.com,	9408866298

Group photo:-



**Prof. Mayur sevak
Visit Coordinator)**

**Prof. Darshan C. Dalwadi
(IEEE Coordinator)**

(Industrial

*****The End*****



MHRD'S
INNOVATION CELL
(GOVERNMENT OF INDIA)



BVM-SSIP ORGANISED

Industrial Visit

On

**Vadodara Smart City –
Command and Control Centre**

01st October, 2021.

Sponsored by

(BVM-SSIP Center, Vallabh Vidyanagar)

Organized By

BVM Engineering College

(Affiliated to Gujarat Technological University)

(An Autonomous CVM Institution)

Summary Table

Visit Place:	Vadodara Smart City – Command and Control Centre, Badamdi Baug, Babajipura, Vadodara, Gujarat 390001		
Visit Experts:	1. Mr. Manish Bhatt – Director-IT VMC		
Name of Principal of the Institute:	Dr. Indrajit Patel		
Department Name of the Institute:	All Branch		
Name of Nodal Officer:	Dr. Bhargav C. Goradiya		
Visit Coordinator:	Prof. Ronak R. Vashi Prof. Neha R. Patel		
Year/Semester of the Students	2nd Year (All Branch)		
Specific Subject under which Visit organized:	Vadodara Smart City – Command and Control Centre.		
Professional body under which visit organized:	BVM-SSIP, Vallabh Vidyanagar		
Date and Time of Visit:	Date: 01/10/2021 Time: 01:00 PM to 06:00 PM		
Accompanying Staff Name:	1. 2.	Prof. Ronak R. Vashi Prof. Neha R. Patel	
Contact Information of Staff:	No.	Contact No:	Email Id:
	1.	9426724335	ronak.vashi@bvmengineering.ac.in
	2.	9408190976	nrpatel@bvmengineering.ac.in
Total No of Students:	49		

Brief Description about the Visit:

The industrial visit to Vadodara Smart City – Command and Control Center and Incubation Center was conducted on 1st October 2021. The visit was organized under BVM-SSIP Center, Vallabh Vidyanagar with the support from Dr. B. C. Goradiya (Head, EC Dept. & Nodal Officer SSIP) and Dr. R. C. Rana (SSIP Coordinator). We departed at 01:30 in the noon from the BVM Engineering College. There were 49 students of Civil, EC, Electrical & Mechanical department along with two faculty members Prof. Neha R. Patel & Prof. Ronak R. Vashi went to this visit. We have reached to Vadodara Smart City – Command and Control Center around 03:00 PM.

At around 03:30 PM, the whole session of General Introduction and the Briefing about the implementation smart city concept and its various applications was conducted by Mr. Janak Sir, and Priyanka Madam (VMC) of Govt. of Gujarat.

Introduction:-

"100 Smart Cities Mission" was launched by Prime Minister Mr. Narendra Modi on 25 June 2015. A total of ₹98,000 crore (US\$14 billion) has been approved by the Indian Cabinet for the development of 100 smart cities and the rejuvenation of 500 others. ₹48,000 crore (US\$6.9 billion) for the Smart Cities mission. It ensures that 20 smart cities will be ready till 2021. Vadodara is one them.

Brief about Implementation of Vadodara Smart City:

- ❖ The Vadodara smart city network uses mesh topology for the city communication having 250 kms of optical fibering.
- ❖ The control center itself uses star topology for its internal communication, having CCTV, Water SCADA, GIS, Video wall controller, Access control, City bus, IBM-IOC, ATCS, CCTV-ITMS, PA-ECB and Administrator as node and all control being as their switch.
- ❖ The city in total has 900 cameras and it uses GET (Get Enforcement Troop) system, in which if any law/rule break is captured in the cameras then the control center contacts GET and required action is taken. The control system is linked with the RTO. Therefore, by identifying the owner of the vehicle, the challan is directly sent to his/her house.
- ❖ The city has 21 Dashboards. So, in case of any emergency, the dashboards are used to communicate with the people. The city has also installed Emergency call management

system in areas where there is more traffic. There are several Public announcement systems installed in the city.

- ❖ The city also has Environment sensor in several areas that measures temperature, RH, AQI (Air quality index) and PM10 (Particulate matter). These sensors also measure CO, SO₂, NO₂ and O₃ present in the environment.
- ❖ The smart city developers also developed their own city app, called as MY VADODARA APP. It is a platform where the citizens of Vadodara can see statistics of all the smart city system and can register complain by just clicking a picture of the problem and post it on the app. Then, the concerned officer will come and will examine the problem then takes steps accordingly.
- ❖ The city has 170 city-buses and has a very nice management system for it. Where the control system members know that how many and which asset is active, at rest and non-active. They also have a complete monitoring on the route of every asset and history of it. They are also known with the km. travelled by any bus and average speed of the bus.
- ❖ The city has also installed Garbage Collection System. A door-to-door system where the routes of the garbage collector truck are predefined and uses GPS tracking. The control center monitors this system by looking into satellite map. If any truck misses any location, it is known in real-time. Hence, the system is micro-level accurate.
- ❖ The city also has Geographical Information System (GIS). It is a 20-22Cr project and a door-to-door module. It captures 0.2 resolution image. This system includes gas-line map, having information of like the diameter of each and every pipe. It also has Plan Dig Request (PDM), where a line will be drawn on the map where the digging is to done (from its start point to its end point). It also knows that which person will do the work and at what time and how he/she will do. As in Vishwamitri river is known for having 300+ crocodiles. Therefore, from this system, the city gets to know that where actually the crocodiles are. This system also knows that the property is rented or not and which cable connection is used by the citizens (benefits in tax revenue).
- ❖ WATER SCADA system is Used with C-programming as backend. Water contents are known, including its PH. Also, knows that how much water loss is happening. The water management system has 80 valves. The system also knows the tank capacity like how much the tank is filled. The system is divided into 4 zones (North, South, East and West) has diagnostic system.
- ❖ It has IBM-IOC installed, which knows whether the installed devices are properly working or not.

- ❖ It has also installed Video Management System (VMS) for garbage management. It uses motion sensing cameras, where the person/group throwing garbage is/are identified and then is/are fined.

Photograph of the event:



Outcome of the Industrial Visit:

- ❖ The participating students turned up with new ideas on infrastructure and creating innovative and smart solutions for the development of infrastructure responsive to our daily needs.
- ❖ New idea in the domain of healthcare and hygiene with finding innovative and serious solutions to curb the problem of inefficient healthcare and unplanned waste disposal.
- ❖ To trade and commerce in creating opportunities for improving quality of life without increasing resource use and environmental problems also visualize the new horizon of idea.
- ❖ law and policy making and examining regulatory landscape for disruptive advances in urban governance arising from innovative technology with the urban aesthetics to making cities aesthetically pleasing and interesting place to live in.

LIST OF PARTICIPANTS

INDUSTRIAL VISIT @ VADODARA ON 01/10/2021 (01:30 PM TO 6:00 PM)

No	ID No	Branch	Name	Sign	Remarks
1	19CE002	CIVIL	Yash Ashokbhai Darjee	<i>Yash</i>	
2	19CE010		Siddharth Manishbhai Bharadava	<i>Siddharth</i>	
3	19CE012		Vala Jatin Dilipbhai	<i>Vala</i>	
4	19CE018		Dharmik Olakiya	<i>Dharmik</i>	
5	19CE022		Baldaniya Jaydip Vashrambhai	<i>Jaydip</i>	
6	19CE023		PANDYA SHIVAM	<i>Shivam</i>	AB F
7	19CE024		Ritesh	<i>Ritesh</i>	
8	19CE025		PATEL SANKETKUMAR NAVNEETBHAI	<i>Sanket</i>	
9	19CE026		Patel keval s	<i>Keval</i>	AB
10	19CE028		MANTHANKUMAR JITENDRAKUMAR PRAJAPATI	<i>Mantankumar</i>	
11	19CE030		Rutvik Shashikantbhai Gohil	<i>Rutvik</i>	
12	19ce039		Chauhan duregesh	<i>Duregesh</i>	
13	19CE040		Zeeshan Ranginwala	<i>Zeeshan</i>	
14	19CE042		Togadiya Krunal prakashbhai	<i>Krunal</i>	
15	19CE058		Variya Juhi Haresbhai	<i>Juhi</i>	
16	19CE063		RATHVA VIPULKUMAR NAGINBHAI	<i>Vipul</i>	
17	19CE078		Waghela vaidehi	<i>Vaidehi</i>	AB
18	19CE129		Chaudhari Hetvikumari Vipulbhai	<i>Hetvi</i>	
19	20CE072		Abhinav D Parmar	<i>Abhinav</i>	
20	20CE087		Shahid Yakub Pataliya	<i>Yakub</i>	
21	20CE133		Harsh panchal	<i>Harsh</i>	
22	20CE146		Mayurdhwajsinh jadeja	<i>Mayur</i>	
23	20CE149		Meet Lakkad	<i>Meet</i>	
24	21ce302		Achyut soni	<i>Achyut</i>	AB
25	21CE313		YOGI KUNDANNATH	<i>Yogi</i>	AB
26	20EE317	ELECTRICAL	Manas N Kulkarni	<i>Manas</i>	
27	21EE312		Khodiyar Harshil Bharatbhai	<i>Harshil</i>	AB
28	19EE014		Jaimin Rameshbhai Prajapati	<i>Jaimin</i>	
29	19PE006	PRODUCTION	Nemish Rohitkumar Shah	<i>Nemish</i>	
30	19PE018		RANE JATIN BHARATKUMAR	<i>Jatin</i>	
31	19PE019		Aniket N Patel	<i>Aniket</i>	AB
32	20EC401	EC	PATEL PRIYAL MINESHBHAI	<i>Priyal</i>	
33	20EC402		Amisha Shyam Sakhare	<i>Amisha</i>	
34	20EC403		Vatsal Makodia	<i>Vatsal</i>	
35	20EC407		Vashishth Trivedi	<i>Vashishth</i>	
36	20EC408		Ragini Yadav	<i>Ragini</i>	
37	20EC411		Aditya Shah	<i>Aditya</i>	
38	20EC412		Richa Sinha	<i>Richa</i>	
39	20EC413		Shalini Rajesh kotecha	<i>Shalini</i>	
40	20EC414		Krish Kalyani	<i>Krish</i>	
41	20EC416		Jay Kevalramani	<i>Jay</i>	
42	20EC417		Divyang Goswami	<i>Divyang</i>	
43	20EC427		Prasanna Prajapati	<i>Prasanna</i>	
44	20EC430		Hemangini Parekh	<i>Hemangini</i>	
45	20EC432		Dhruvil patel	<i>Dhruvil</i>	
46	20EC437		Naik Meshwa Kirtikumar	<i>Naik</i>	
47	20EC441		Prathviraj Singh	<i>Prathviraj</i>	
48	20EC443		gaudana devang jayeshbhai	<i>Gaudana</i>	
49	20EC446		Anisha Singh	<i>Anisha</i>	
50	20EC448		Desai Drashti Deveshbhai	<i>Drashti</i>	
51	20EC451		Ayush Shah	<i>Ayush</i>	
52	20EC453		Honey	<i>Honey</i>	
53	20EC454		Dhairya singh	<i>Dhairya</i>	
54	20EC455		Dhan Prajapati	<i>Dhan</i>	
55	20EC456		Nishant Snehaikumar Gajjar	<i>Nishant</i>	
56	21EL301	ELCTRONICS	Soni RIYA JIGNESHKUMAR	<i>Riya</i>	AB
57	20ME006	MECH	Patel Mayurkumar manishbhai	<i>Mayur</i>	AB
58	21ME301		Shah Kavan VishalKumar	<i>Kavan</i>	AB
59	21ME310		Kukadiya OMkumar Manojbhai	<i>Om</i>	
60	20EC435		Devansh Dole	<i>Devansh</i>	

Coordinated by,
Prof. Ronak R. Vashi &
Prof. Neha R. Patel



Report on Tour to IIT Bombay Techfeast



Details of the Tour to IIT Bombay Techfest

Starting Date:- 13/12/2018

Departure/Arrival Time:- 5.00 pm/6.00 am

Pick up point:- Vadodara Railway station

**Venue:- Indian Institute of Technology Bombay, Powai, Andheri(East)
Mumbai-400069**

Duration:- 5 Days

Total No of students:- 86

The tour is organized for the student of 1st, 2nd, 3rd year of our college Birla Vishvakarma Mahavidhyalaya. The students gather at Baroda Railway station at 4.45pm. And total 86 students have registered themselves for the tour to IIT Bombay Techfest.

ACKNOWLEDGEMENT

These tour was impossible to us without the efforts and valuable inputs from college and faculties. We are here extending to our great acknowledgement and appreciation to following persons with their memorial inputs that are very significant in making this tour possible:-

The First and the most acknowledged Person is Dr. Bhargav Goradiya who is a head of Electronics and Communication Department. He is very helpful to us. He has inspired us to arrange these tour to IIT Bombay Techfest. Not only that has giving permission for tour,his academic guidance, fairness and responsiveness to kind of queries remains him as a role model, therefore we are extending our gratitude to Dr.Bhargav Goradiya.

Next and the acknowledged Dr.Indrajit Patel (Principal BVM Engineering college) who has faithful to us, he is also always ready for solving problem related to Industrial visit and conclude it, ascertaining him a commemorative plaque at deep of our heart.

Again thanks for valuble collaborations.

INDEX

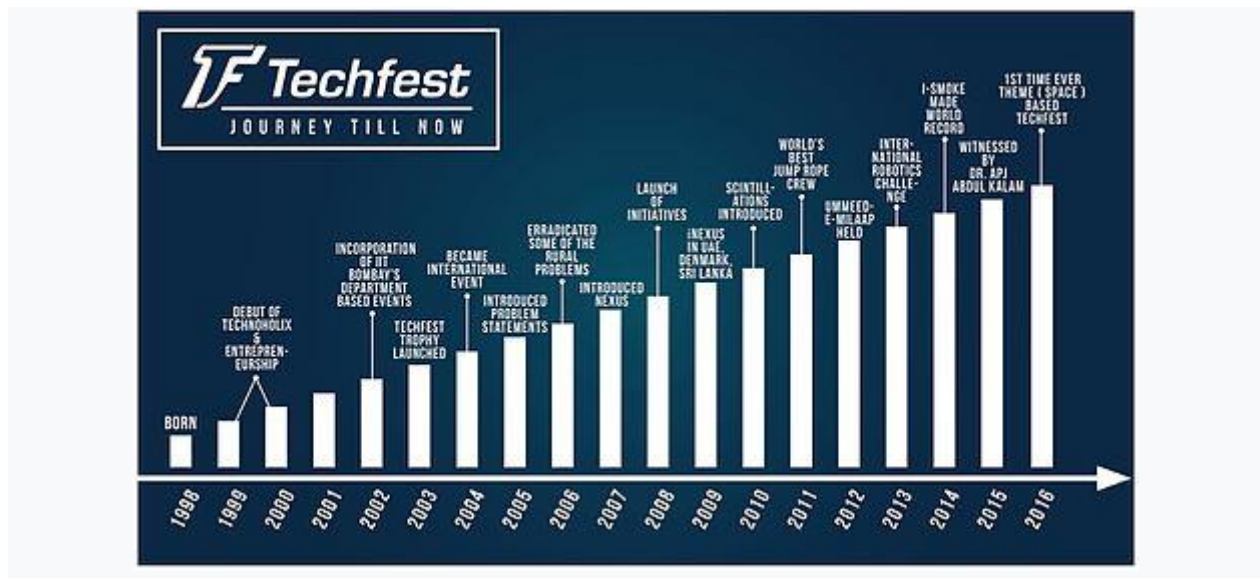
- 1.** Introduction
- 2.** Purpose of Tour
- 3.** Workshops held at IIT Bombay techfest
- 4.** Exhibitions held at IIT Bombay techfest
- 5.** Lectures held at IIT Bombay techfest
- 6.** Conclusion

Introduction:

Techfest is the annual science and technology festival of Indian Institute of Technology Bombay. It also refers to the independent body of students who organize this event along with many other social initiatives and outreach programs around the year. Techfest is known for hosting a variety of events that include competitions, exhibitions, lectures as well as workshops.

Started in 1998 with the aim of providing a platform for the Indian student community to develop and showcase their technical prowess, it has now grown into Asia's Largest Science and Technology Festival with a footfall of 1.75 lakhs in its latest edition. The activities culminate in a grand three-day festival event in the campus of IIT Bombay which attracts people from all over the World, including students, academia, corporates and the general public.

The very first edition of **Techfest** was in **1998**. The underlying spirit of Techfest was "to promote technology and scientific thinking and innovation" a motto that has been followed by every Techfest since. Techfest '98 also set the broad outlines of Techfest in the form of competitions, lectures, workshops, and exhibitions which went on to become a standard feature at every Techfest. Entrepreneurship also made an appearance in the 1999 and 2000 editions. Technoholix—Techfest in the Dark, showcasing technological entertainment at the end of each day as well as the hub of on the spot activities, made their debut during these years.



Techfest 2017-18 was based on "Digitalization , Sustainability and Biotechnology", and recorded a participation of 1.75 lakhs which has been the highest for any college festival. Sophia, the first ever humanoid robot to get citizenship made its appearance for the first time in India. The lecture series was adorned by Tanmay Bakshi (youngest IBM Watson Developer), Manohar Parrikar(Chief Minister of Goa), Jayanth Sinha(Minister of State, Civil Aviation) and many more distinguished personalities. International Robowars saw participation from 5 countries and had a massive response from its audience for its grandeur. SHE (Sanitary Health Education), a social initiative focused on emancipating the taboo of menstruation in India by conducting hygiene management sessions and distributing 2 Lakh sanitary napkins.

Purpose of Tour

The main purpose of visiting the IIT Bombay Techfest is to gain more knowledge in various aspects of technology and science. To attend the wonderful lectures.

To see their Exhibitions. And to attend amazing workshops

Workshop held at IIT Bombay Techfest

Workshops play an important role in fulfilling Techfest, IIT Bombay's vision of bringing the students face to face with the latest technology that is storming the world. These workshops are organized under expert guidance from various fields and are known to attract a lot of students owing to their repute and quality content. Techfest 2017-18 organized workshops in **Google Android, Gesture Robotics, Automobile Mechanics, Financial Fitness, Underwater Robotics, Ethical Hacking, Internet of Things, ArduinoBotix, Quadcopter, All In Cloud, 6th sense Robotics & a lot more**. Over the past few years workshops which Techfest, IIT Bombay provide have been given an enriching experience to participants & connected with the most effective and tangible reform movement in high education. Apart from the workshops held during the three-day festival, Techfest also reaches out to many colleges across India through tie-ups with robotics companies and organizes workshops pertaining to spread the robotics culture among Indian youth.

I have attended the Google Android Workshop. It was the nice experience for me to attend the workshop and I have gain more Knowledge in field of android studio. They have teach us how to make the icon for app and how to deal with Sqlite database and animation java programming with oops concept.



Lectures held at IIT Bombay:

lectures is one of the most distinguished parts of the fest. The series has been continuously striving to impart knowledge and profound experience to one of the largest gathering across the continent. The sheer volume of knowledge and ideas that are spread through the series is immense and unimaginable. The platform provides the opportunity of interacting with eminent personalities and share ideas and interests. The past speakers at Techfest include great personalities like:

- Sophia, Hanson Robotics , Citizen of the Kingdom of Saudi Arabia (Most advanced humanoid robot ever built)

- A P J Abdul Kalam(Former president of India and Founder of India's missile program)
- Manohar Parrikar (former defence minister of India)
- Jayant Sinha (minister of the state of civil aviation)
- Randy Schekman (Nobel Prize recipient in Physiology)
- Jimmy Wales (Founder, Wikipedia)
- Ada Yonath (Nobel Laureate, Chemistry)
- Michael Sandel (Political Philosopher, Harvard University)
- C.N.R. Rao (Bharat Ratna 2013-Highest Civilian Award of India)
- Bjarne Stroustrup (inventor of C++)
- Amartya Sen (Nobel Laureate, Economics)



Michael Sandel, Political Philosopher, Harvard University at Techfest 2014

- Vint Cerf (one of the fathers of Internet)
- Pranav Mistry (Vice President of Research at Samsung, Inventor of SixthSense technology)
- John Nash (Nobel Laureate, Economics)
- Harold Kroto (Nobel Laureate, Chemistry)
- Ei-ichi Negishi (Nobel Laureate, Chemistry)
- Robert E. Kahn (One of the fathers of internet)
- Manjul Bhargava ^[33] (Fields Medal and Padma Bhushan awardee, Mathematician)
- Venkatraman Ramakrishnan (Nobel Laureate, Chemistry)
- Stephen Wolfram (Developer of Mathematica)
- Ryan Germick (Google Doodle team leader)
- Jaap Haartsen (Inventor of Bluetooth)

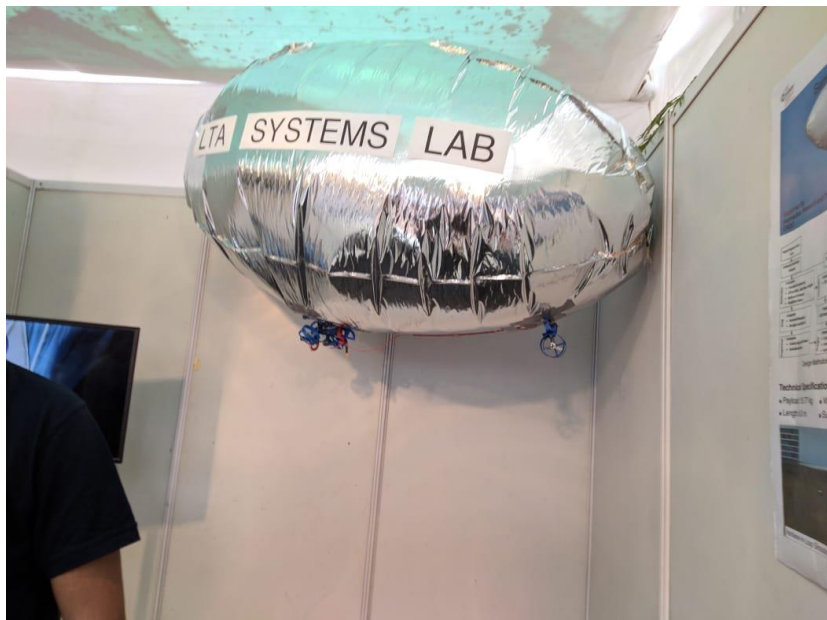
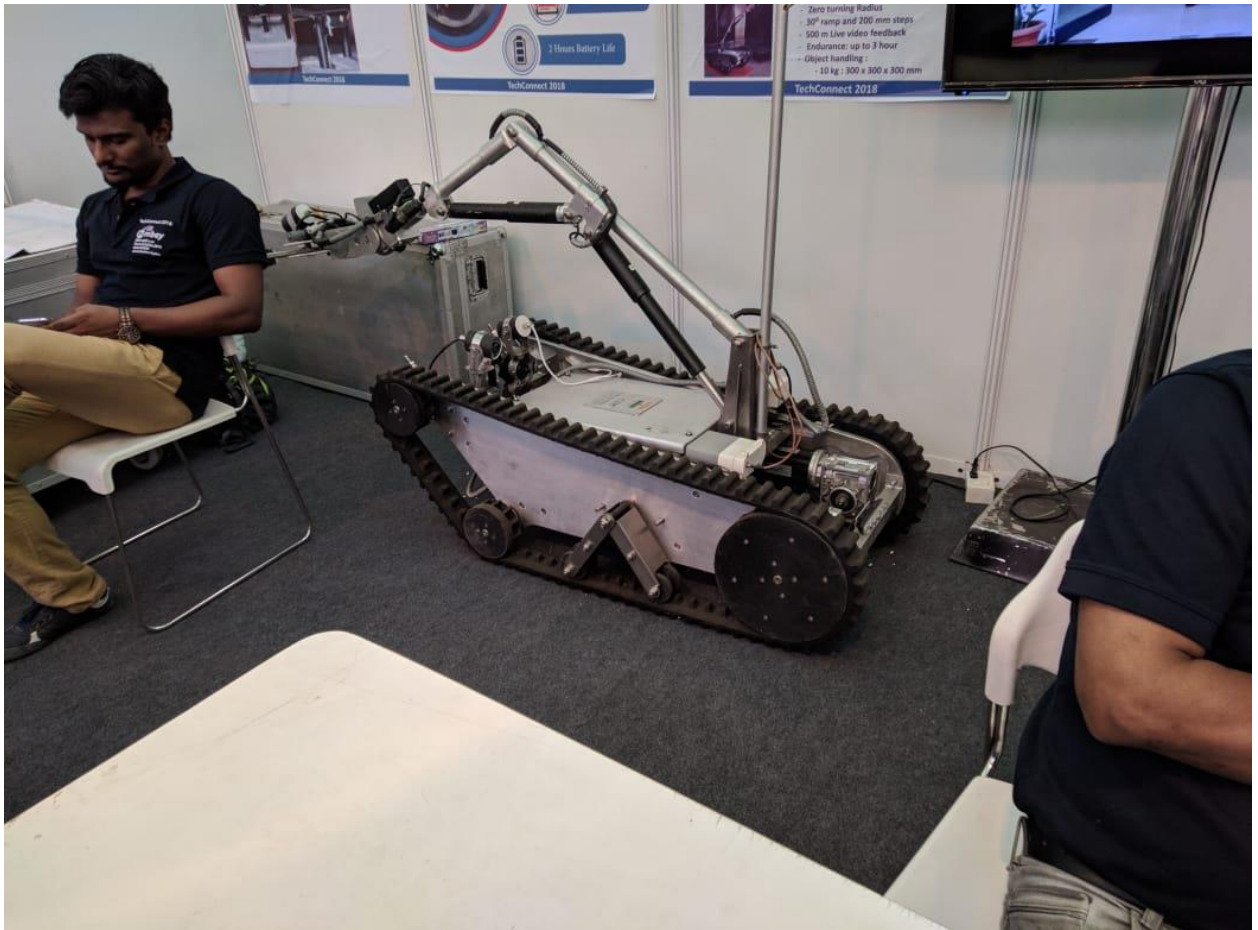


- Serge Haroche, French Physicist, Nobel Laureate, at Techfest, IIT Bombay
- Jaime Lagunez (Scientist and Human Rights activist has accepted this year's invitation)
- Dr. K. Radhakrishnan (Ex-Chairman, Indian Space Research Organisation (ISRO))
- Eric Klinker (CEO, Bit Torrent)
- Serge Haroche (Nobel Laureate, Physics)
- Rakesh Sharma (1st Indian in Space)
- Sharmila Tagore (UNICEF Goodwill Ambassador)
- Peter Atkins (British Chemist and renowned Author)
- Bruce Allen (American Physicist and Director, Max Planck Institute for Gravitational Physics (Albert Einstein Institute))
- Mark Papermaster (Former CTO, Apple Inc.)

Exhibition held at IIT Bombay Techfest

Exhibitions provide an ideal platform to reduce the gap between the technology in today's world and the common man in India. Every year Exhibition has mesmerized people by presenting technological avant-garde in the world. It helps young minds to broaden their vision and to update their tech know-how. The exhibitions segment of Techfest started out in 2004 with Indian Navy Exhibitions feeling the need to motivate young Indian minds towards military research. It was re-initiated in 2006 with a plethora of exhibitions. **Welcome To Mars** was the first International Exhibition from Arizona State University and NASA. While 2007 witnessed a huge

increase in the number of International Exhibits of which the most prominent were Mind Reading Machines and the life-size exhibits of Pterosaur, 2008 had the first interactive exhibit in Techfest in Shadow Dexterous Hand. In 2009 an Amphibot capable of moving without any limbs or wheels, face detection software on a robot security platform, rudders and flight control mechanics from Airbus, and DRDO 's mobile autonomous launcher Brahmos. Alice the first robot smaller than a ping-pong ball and eye-writer writing by eye movement were the focus of Techfest Exhibitions 2010. Da Vinci Robotics Exhibitions conceptualised by Leonardo da Vinci, Open vibe- the brain-computer interface shows brain activity, PR2 Robot, Eccerobot 2- an anthropomimetic robot acting as a human replica were the cynosure of all eyes in 2011. Techfest 2013 ^[28] saw the NAO Robot from France, exhibits from the MIT Media Lab like the EyeNetra, HIRO robot were among the highlights of the exhibitions. Exhibitions at Techfest 2014 witnessed the BINA48, Fumanoids (Germany), Solowheel (United States), Cubli (Vertex balancing cube, EPFL Switzerland) and many other exhibits. Techfest 2015 featured innovative Sepios which mimics swimming through proper fins. Bionic Hand,^{[3][31]} an artificial bionic prosthesis using 3D printing technology. Some other exhibits at display were Beach Bot, Teegi, Tigers Mannheim, Thomas Li Vigni and many more. Jinn Bot (robot which express moods such as joy and anger), Dutch Nao Team exhibits from BRAC University, ETH Zurich were among the highlights of Exhibitions in 2016. Following the **Space Expedition** theme, Exhibitions in Techfest 2016-17 showcased ISRO prototypes, Advanced Military Weaponry, Bebionic hand with **Techconnect**, an exclusive showcase of IIT Bombay research projects and Exhibits. Techfest 2016 also witnessed Auto-show as a part of exhibitions showcasing BMW i8, BMW M4, Hayabusa, Ducati, Triumph Bikes and many more. Techfest 2017-18 provided unparalleled variety and gave amazing experience by showcasing Team Puli (Hungary), KinoMo (UK), GBL robotics(United States), Mini Robot (Korea), Synergy Moon, Neurosky, Universal Robots, Softbank.





Conclusion: We have gain more knowledge on various aspect in field of science and technology and it will be very much helpful in future.



Birla Vishvakarma Mahavidyalaya Engineering College

A Report on visit to Vibrant Gujarat Global Summit 2017

Gandhinagar, Gujarat.

TEQIP Sponsored

Start/ End Date: 12/01/2017

Start/End Time: 8:30 am to 8:30 pm

Overall College Coordinator of Visit:

1. Prof. F. R. Vora

2. Prof. V. A. Arekar

Electronics & Communication Department Coordinator:

1. Dr. Bhargav Goradiya

2. Prof. Robinson P. Paul

Total Number of Students of Electronics & Communication Dept.: 36

Introduction:

The visit to Vibrant Gujarat 2017, Gandhinagar had been initiated by Birla Vishwakarma Mahavidyalaya, Vallabh Vidyanagar on 12th of January.

The event Vibrant Gujarat, as a part of govt.'s journey towards the sustainable long term growth, is being conducted every year in the capital city of Gujarat. It was the 8th edition of Vibrant Gujarat Global summit when this visit took place. The main aim behind this global summit held from 10th to 13th Jan, 2017 was "Sustainable Economic and Social Development".

Vibrant Gujarat is an example of visionary approach of the Govt.of Gujarat towards inclusiveness of global meets by ensuring policy coherence and investment promotion. This summit today has become world famous and also it has become a unique forum for exchanging ideas, sharing knowledge, networking and exploring business opportunities across the globe. This summit is held at Mahatma Mandir, Gandhinagar where many delegates and political personalities make their presence felt.



EC department Students with Faculties (Dr. Bhargav Goradiya & Prof.Robinson Paul)

Details of the halls:

The whole premises consisted of 12 halls in all wherein different stalls of different fields were exhibited. Hall 1 consisted of the international stuffs whereas the 2nd one had stall related to automobile companies and their products, it also had a stall which related to engineering field including the Iot based stall. Also, textile & power were one of the top demanded fields of hall number 2.



BVM Stall at Vibrant Gujarat Global Summit 2017: SMART FARM

3rd hall dealt with all the things relate to skill development and entrepreneurship whereas the 4th one had everything being showcased regarding education.

The rest of the halls were full of stalls including the fields such as Urban infra, mega projects, Ports, Transportation, Logistics, Innovation & IT, Banking etc.. Where all the companies around the country related to the respective fields came under one roof and helped people to guide them thoroughly.

Also, industries related to chemical, oil and gas mining, heavy engineering, tourism, etc..took part in the 4 day summit. This year, this summit also had a huge hall which showcased the aerospace field which included ISRO and its achievement in the field.

Summary:

In all, this summit was a gem of an opportunity for the students & faculties to actually see the real things that we usually watch in advertisements. Vibrant Gujarat global Summit Team & Partners have actually worked hard to make this possible to showcase their innovation and opportunity in all the sectors.

Acknowledgement:

Thanks to our **Principal Dr. I. N Patel sir** and Team for providing the platform to interact with industry and educational experts. It was indeed a pleasurable experience.

List of the Students Attended Industrial Visit:

BVM ENGINEERING COLLEGE EC ENGINEERING DEPARTMENT List of Students participating in Visit to Vibrant Gujarat, Gandhinagar				
Sr. No.	Enrollment Number	Name	Sign	
DIVISION- 9			Mor.	Eve.
1	Henil Dasondi	130080112021	Henil	Henil
2	Samriddhi	130080112048	Samriddhi	Samriddhi
3	Vidhyut Prajapati	130080112040	Vidhyut	Vidhyut
4	Shweta K Thacker	130080112056	Shweta	Shweta
5	Parsana Vaibhav Ghanshyambhai	140083112009	Vaibhav	Vaibhav
6	Amandeep Jangra	130080112004	Amandeep	Amandeep
7	Shrey Anjaria	130080112005	Shrey	Shrey
8	Sarvaiya Pratik Batukbhai	130080112050	Pratik	Pratik
9	Pratik Vaswani	130080112058	Pratik	Pratik
10	Shubha Pandey	130080112055	Shubha	Shubha
11	Vidhi bipinbhai sailor	140083112014	Vidhi	Vidhi
12	Vatsal Bediwala	140083112002	Vatsal	Vatsal
13	nikunj dineshbhai rathod	130080112043	AB	AB
14	Divyesh Rathod	130080112041	Divyesh	Divyesh
15	Dhruvaj Suryavanshi	130080112016	Dhruvaj	Dhruvaj
16	Vidhi bipinbhai sailor	140083112014	Vidhi	Vidhi
17	Aditya Thanvi	130080112002	Aditya	Aditya
18	Shivika singh	130080112053	Shivika	Shivika
19	Aditya Thanvi	130080112002	Aditya	Aditya
20	Siddharaj Gogre	130080112018	Siddharaj	Siddharaj
21	Urvi Patel	120080112044	Urvi	Urvi
22	Aliraza Hasan	130080112020	AB	AB
23	Palash Gandhi	130080112034	Palash	Palash
24	Vidhyut prajapati	130080112040	Vidhyut	Vidhyut
25	Disha Ashokkumar Rashtrapal	140083112013	Disha	Disha
26	AAMIR MANSURI	130080112030	Aamir	Aamir
27	Vivek Chandrakant Tank	140083112023	Vivek	Vivek
28	Bhalodia charmi mansukhbhai	140083112001	Bhalodia	Bhalodia
29	Ronak rabari	130080112046	Ronak	Ronak
30	Aeshwarya Jain	130080112003	Aeshwarya	Aeshwarya
31	Viral Jyantibhai Rabadiya	140083112013	Viral	Viral
32	Kansara jainika Nileshbhai	140083112005	Kansara	Kansara
33	Mohit agarwal	130080112052	Mohit	Mohit
34	Krusha Jani	130080112026	Krusha	Krusha
35	Abhishek singh	130080112001	Abhishek	Abhishek
36	MAHAK KOTHARI	130080112028	Mahak	Mahak

BVM ENGINEERING COLLEGE
EC ENGINEERING DEPARTMENT
List of Students participating in Visit to Vibrant Gujarat,
Gandhinagar

Gandhinagar

Sr. No.	Enrollment Number	Name	Sign	
DIVISION- 9				
37	Mugdha jain	130080112033	Mor	Eve
38	Shaikh mahammadayaz		<u>Agar</u>	<u>Agar</u>
38	muntajiroddin	130080112052		
39	nikunj dineshbhai rathod	130080112043		
40	Busa ankurkumar bipinbhai	130080112011	<u>ABusa</u>	<u>ABusa</u>
41	Megha Patel	140083112011	<u>Patel M</u>	<u>Patel M</u>
42	Khushboo Desai	130080112014	<u>K.A. Desai</u>	<u>K.A. Desai</u>
43	Rushi savani	140083112015	<u>Rushi</u>	<u>Rushi</u>
44	Shloka Naudiyal	130080112054	<u>S. Naudiyal</u>	<u>S. Naudiyal</u>
45	Sanchit Puranik	130080112049	<u>Sanchit</u>	<u>Sanchit</u>
46	Jinish Brahmhatt	140083112021	<u>Jin Bhatt</u>	<u>Jin Bhatt</u>
47	Pushkar Shelar	140083112016	<u>Pushkar</u>	<u>Pushkar</u>
48	Pariniti Doshi	130080112017	<u>Parini</u>	<u>Parini</u>

Industry Visit Report of Zydus Hospital Of D.S.P & Bio-Medical Instrumentation

Date: 26/09/2016.

From:

Prof. Robinson P. Paul

Prof Ghansyam B Rathod

To,
Dr. Mehul Shah ,
HoD, EC Dept.,
BVM,Anand

Respected Sir,

We , Prof. Ghansyam B Rathod and Prof. Robinson P. Paul , are happy to inform you that on the 17/09/2016 , Industry visit at “Zydus Hospital ” was successfully organized. The students have enjoyed and learnt the medical instruments designed with Digital Signal Processing concepts. The Expert Mr. Jerrin & Mr. Shrinath (Engineer at Zydus) have explained in details regarding the instruments of labs .

We have attached few clicks of photographs and attendance & permission.

- **Venue:** Zydus Hospital
- **Target Audience:** 4th Year ET Students.
- **Experts:** Mr. Jerrin & team
- **Department Coordinator:** Prof Ghansyam B Rathod , Prof. Robinson P.Paul
- **Student Coordinator:** Shrey.

Prof . Ghansyam Rathod

Prof. Robinson Paul

- **Photographs**



Fig1 : Faculties and students at Zydus Anand

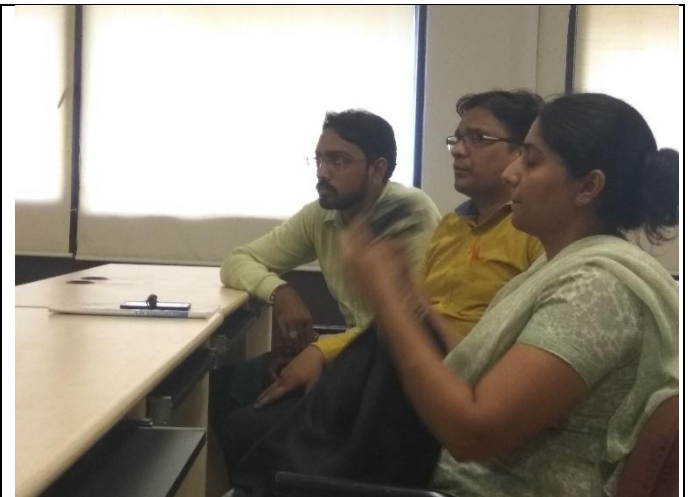


Fig2: EC and EL Faculties at seminar hall



Fig3: Mr. Jerrin Explaing the instrument

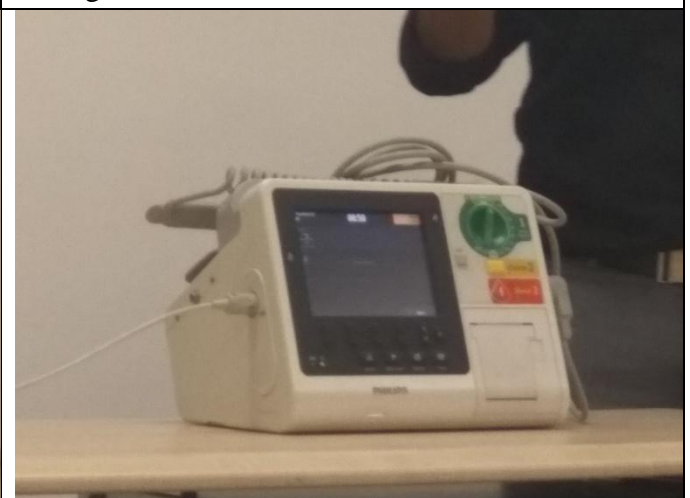


Fig4 : Digital Signal Instrument

- **Brief Introduction**

The departments shown to students were Radiology department and the laboratory department respectively. Radiology department included various huge machines like CT scan, mammography machine, X-Ray, MRI scan machine, etc. The function and working of each were shown in a perfect manner with fundamental of Digital Signal Processing. The laboratory department included various instruments which are used for blood samples related tests, urine related tests, etc. All the instruments were shown in a working condition with a special permission from the hospital management. Also, machine and instruments like Ventilator were also shown.

The explanation of instruments with signal processing concept is useful for the both subject, Digital Signal Processing and Bio-Medical Instrumentation.

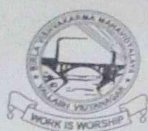
Attendance Sheet

Industry Visit at ZyduS , Anand

Attendance Sheet of Electronics & Communication students

Subject: Bio-Medical & Digital Signal Processing

Sr. No	Enrollment Number	Name	Sign	Sr. No	Enrollment Number	Name	Sign
1.	130080112005	Shrey Anjaniz	<i>Shrey</i>	2.	140083112007	Gunav Maheta	<i>GM</i>
3.	140083112013	Disha Roshtrapal	<i>Disha</i>	4.	120080112046	Prayushi Samkoti	<i>S.S.B</i>
5.	120080112063	Pooja Vishnu	<i>Pooja</i>	6.	140083112020	Rohit Vardgand	<i>R.V.V.</i>
7.	140083112019	Thakur Vipul	<i>Vipul</i>	8.	140083112010	Parth Ashit	<i>A.R. Ashit</i>
9.	130080112046	Rachari Kankul	<i>Rachari</i>	10.	130080112013	Chheta Mukesh	<i>Chheta</i>
11.	130080112049	Sanchit Purohit	<i>Sanchit</i>	12.	140083112002	Balwade Vardh	<i>V.N. Vardh</i>
13.	130080112043	Nikunj Rathod	<i>Nikunj</i>	14.	130080112020	Aliza Hasan	<i>Aliza</i>
15.	130080112041	Divyesh Rathod	<i>DR Rathod</i>	16.	130080112025	Vasim Parthel	<i>V.P. Parthel</i>
17.	130080112011	Ankur Kusy	<i>Ankur</i>	18.	130080112033	Mugdha Jain	<i>Mugdha</i>
19.	140083112011	Megha Patel	<i>Megha</i>	20.	130080112007	Sulman	<i>Sulman</i>
21.	130080112030	Amit Mannar	<i>Amit</i>	22.	130080112032	Yohit	<i>Yohit</i>
23.				24.			
25.				26.			
27.				28.			
29.				30.			



ELECTRONICS & TELECOMMUNICATION DEPARTMENT
BIRLA VISHVAKARMA MAHAVIDYALAYA
An Autonomous Institution
BVM (Engineering College)
Managed by – Charutar Vidya Mandal
Vallabh Vidyanagar – 388120
Gujarat, India

To,
Dr Abhishek Soni,
Manager-Operation,
Zydus Hospital, Anand

Respected Sir,

We, undersigned, are thankful for your kind gesture for allowing students of B.V.M. Engineering College of final year engineering (EC Branch) to visit Zydus Hospital, Anand for the academic purpose.

We would also like to thank you and your Team of Zydus Hospital, Anand for spending their valuable time and explaining the practical aspect of Bio-Medical Instrumentation and Digital Signal Processing.

Prof. Ghansyam Rathod

Asst. Professor, BVM

Dr. M.B. Shah

(Head- EC, BVM)

Prof. Robinson Paul

Asst. Professor, BVM

Date: 15/09/2016

To,
Dr. Mehul Shah
HoD- Electronics Communication Dept.,
BVM Engineering College, Anand.

Subject: Regarding Permission for the Industry Visit (Zydus Hospital)

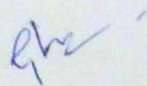
Respected Sir,

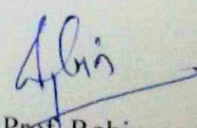
We, undersign, Prof. Ghansyam Rathod and Prof. Robinson Paul is planning for the Industry visit for final year subjects Bio-Medical Engineering and Digital Signal processing on 17/09/2016 at 4:30 pm.

We assure you that no teaching load will be affected due the industry visit.

Kindly permit for the same. We welcome your valuable suggestion.

M. B. Rathod
[HOD, EC, Dept.]


Prof. Ghansyam Rathod
Assistant Professor, BVM-EC


Prof. Robinson Paul
Assistant Professor, BVM-EC



**A Report
On
Technical Visit at
“Zydus Hospital,
Anand, under IEEE Students Branch”
On
Date: 26/03/2020
By
4th Year EC Department
Students of**

BVM Engineering College
(Affiliated to Gujarat Technological University)
(An Autonomous CVM Institution)

Contents

Summary Table	3
Main group photo at Visit Place.....	4
Brief introduction of company/organization.	5
Objective	6
Outcome	6
Few of the roles of biomedical engineer	6
Visit of Various Section of Zydus Hospital	8
SYRINGE PUMP.....	8
INFUSION PUMP	8
ECG MACHINE	8
X-RAY	9
BONE DENSITOMETRY	10
CT SACN/MRI:.....	10
STUDENTS LIST	12
Figure 1: Entrance of the Zydus Hospital, Anand	4
Figure 2: ECG Machine.....	9
Figure 3: X-Ray Machine	10
Figure 4: MRI Machine.....	11

Summary Table

Name of Industry/Organization Visited:	Zyodus Hospital, Anand		
Address of Industry/Organization Visited:	Anand Lambhvel Road, Anand-388120		
Information of Industry Person:	Name:	Dr Abhishek Soni	
	Designation:	Manager-Operations and Hospital Services	
	Department:	Operation and Hospital Services	
Contact Information of Industry Person:	Contact No:	8128663224	
	Email Id:	abhisheksoni@zydushospitals.com	
Name of Principal of the Institute:	Dr. I N Patel		
Department Name of the Institute:	EC Engineering Department		
Name of Head of the Department:	Dr. B C Goradiya		
Year/Semester of the Students	8 th - Sem-2020		
Specific Subject under which visit organized:	Biomedical Instrumentation		
A professional body under which visit organized:	IEEE Student Branch, BVM, V V Nagar		
Date and Time of Departure:	26/03/2020, 2:45 pm		
Date and Time of Arrival:	26/03/2020, 3:00 pm		
No of Days for Visit:	1		
Accompanying Staff Name:	1	Dr. Bhargav Goradiya	
	2	Dr. Darshan Dalwadi	
	3	Prof Ghansyam B Rathod	
Contact information of Staff:	No	Contact No:	Email Id:
	1	9624398770	ghansyam.rathod@bvmengineering.ac.in
	2	NA	NA
	3	NA	NA
Mode of Travel:	Personal Vehicle		
No of Boys Students:	17		
No of Girls Students:	7		
Total No of Students:	24		
Accommodation Venue Name and Address:	NA		

Main group photo at Visit Place



Figure 1: Entrance of the Zydus Hospital, Anand

Brief introduction of company/organization.

Zydus Hospitals has very selectively appointed the best of American / Europe Trained Medical Specialists, Paramedics, Nursing & Administrative Staff. This would be amongst the handful of hospitals in its league which has dedicated full-time medical specialists. This shall ensure complete round the clock care and availability.

Please be reminded that at Zydus, we are committed to Spreading Smiles, along with our quality of personalized care our pricing too shall bring smiles.

At Zydus Hospitals, we are committed to LIFE.

We, at Zydus Hospitals, are committed to excellence and quality with an established focus on the well-being of our patients. We provide the right mix of cutting edge technology, warmth, and compassionate care. Backed by the best team of medical professionals and procedures, we offer the best in private healthcare in a cost-effective way.

We provide the highest standard of clinical skills and nursing care across an extensive range of specialties and attract world-class doctors and surgeons from leading hospitals.

Located in Anand, Gujarat, the hospital offers locational advantage and world-class infrastructure for the patients and their visitors and is one of the most modern private hospitals in India, equipped with state of the art technology.

Delivering an array of medical services, we offer in-patient, out-patient, daycare treatment, surgery, emergency and trauma care in the finest surroundings. What's more, these services can be provided as a part of your own private health insurance scheme or self-finance as the case may be.

We believe that focusing on the comfort of our patients helps in their recovery. We cater to individual tastes and requirements to ensure that patients feel as relaxed and comfortable as possible during their stay.

We bring you details about our facilities and the extensive range of medical specialties available at Zydus Hospitals.

At Zydus Hospitals they are committed to excellence and quality with an established focus on the well-being of patients. They provide the right mix of cutting edge technology, warmth, and compassionate care. Backed by the best team of medical professionals and procedures, they offer the best in private healthcare in a cost-effective way.

They provide the highest standard of clinical skills and nursing care across an extensive range of specialties and attract world-class doctors and surgeons from leading hospitals.

Located in Anand, Gujarat, the hospital offers locational advantage and world-class infrastructure for the patients and their visitors and is one of the most modern private hospitals in India, equipped with state of the art technology.

Delivering an array of medical services, they offer in-patient, out-patient, daycare treatment, surgery, emergency and trauma care in the finest surroundings.

They believe that focusing on the comfort of patients helps in their recovery. They cater to individual tastes and requirements to ensure that patients feel as relaxed and comfortable as possible during their stay.

Objective

The main objective of this visit was to make the students realize the importance of biomedical engineering and the role of biomedical engineers in hospitals. Along with this the students also got to see the latest technology used in hospitals for various vitals measurements and for diagnosis of fluid samples.

Outcome

- The students have able to understand the basic parameters of the measurements used in hospitals for the Biomedical Potential.
- They also understand the troubleshooting and precautions taken at the time of the procedure of such potential measurements.

Few of the roles of biomedical engineer

- Purchase of equipment (which includes inviting quotations/tenders for purchasing new equipment's/machines & preparing comparison chart for the same).
- Writing specifications for all the new equipment & machinery.
- Evaluating the equipment & machinery on the basis of its initial cost as well as its operating cost: since many times, the high maintenance & operating cost of the equipment turns out to be much higher than the initial cost.
- Inspection of incoming equipment & machinery and doing pre-acceptance checks before official acceptance & payment.
- Maintaining records; for e.g. equipment history.
- Setting standards & ensuring their compliance.

- Arranging for training programs for personnel in the clinical engineering department as well as the end-users.
- Maintaining the equipment to the best of its performance by organizing a planned maintenance program for all equipment and attending to emergency breakdowns and repairs.
- Advising & providing expertise to the medical staff & administration
- Maintaining equipment inventory for all existing & incoming equipment's

Visit of Various Section of Zydus Hospital

SYRINGE PUMP

It is a programmable pump that provides an affordable solution to the sophisticated dispensing and flows control applications.

INFUSION PUMP

An external infusion pump is a medical device used to deliver fluids into a patient's body in a controlled manner. There are many different types of infusion pumps, which are used for a variety of purposes and in a variety of environments. Infusion pumps may be capable of delivering fluids in large or small amounts and may be used to deliver nutrients or medications – such as insulin or other hormones, antibiotics, chemotherapy drugs, and pain relievers. Some infusion pumps are designed mainly for stationary use at a patient's bedside. Others, called ambulatory infusion pumps, are designed to be portable or wearable.

ECG MACHINE

Electrocardiography (ECG or EKG*) is the process of recording the electrical activity of the heart over a period of time using electrodes placed on the skin. These electrodes detect the tiny electrical changes on the skin that arise from the heart muscle's electrophysiologic pattern of depolarizing during each heartbeat. It is a very commonly performed cardiology test. In a conventional 12-lead ECG, 10 electrodes are placed on the patient's limbs and on the surface of the chest. The overall magnitude of the heart's electrical potential is then measured from 12 different angles ("leads") and is recorded over a period of time (usually 10 seconds). In this way, the overall magnitude and direction of the heart's electrical depolarization are captured at each moment throughout the cardiac cycle. The graph of voltage versus time produced by this noninvasive medical procedure is referred to as an electrocardiogram.

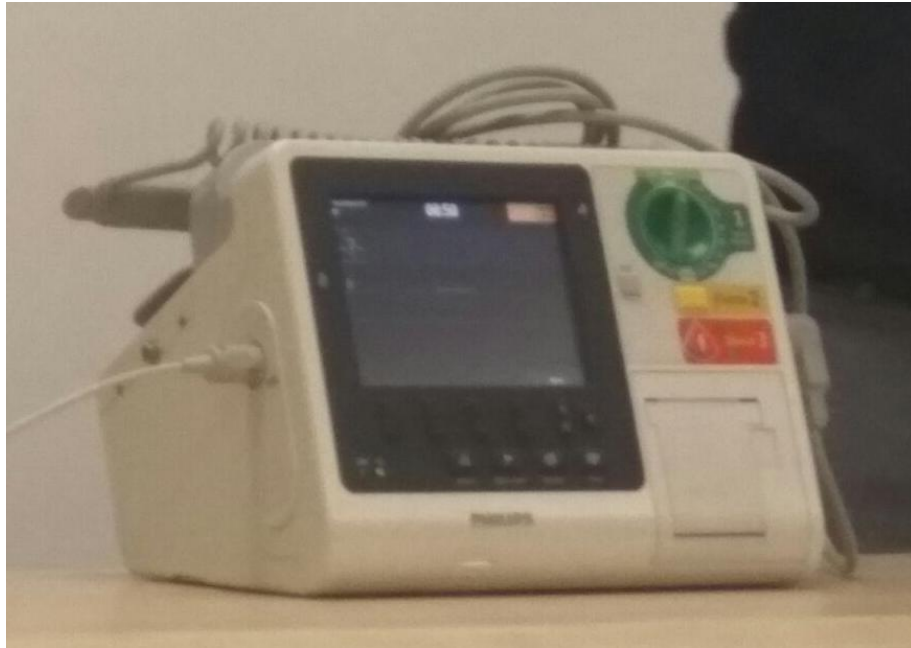


Figure 2: ECG Machine

X-RAY

An **X-ray generator** is a device used to generate X-rays. It is commonly used by radiographers to acquire an x-ray image of the inside of an object (as in medicine or non-destructive testing) but they are also used in sterilization or fluorescence.

An x-ray machine is composed of a control console which enables the x-ray technician to select various x-ray techniques suitable for that specific exam, an x-ray generator that creates and produces the desired KV (kilovoltage), MA (milliampere) and an x-ray tube. The X-ray tube, like any vacuum tube, contains a cathode, which directs a stream of electrons into a vacuum, and an anode, which collects the electrons and is made of tungsten to evacuate the heat generated by the collision. When the electrons collide with the target, about 1% of the resulting energy is emitted as X-rays, with the remaining 99% released as heat.



Figure 3: X-Ray Machine

BONE DENSITOMETRY

Bone densitometry, also called dual-energy x-ray absorptiometry or DEXA, uses a very small dose of ionizing radiation to produce pictures of the inside of the body (usually the lower spine and hips) to measure bone loss. It is commonly used to diagnose osteoporosis and to assess an individual's risk for developing fractures. DEXA is simple, quick and non-invasive. It's also the most accurate method for diagnosing osteoporosis.

CT SCAN/MRI:

A CT Scan (or CAT Scan) is best suited for viewing bone injuries, diagnosing lung and chest problems, and detecting cancers. An MRI is suited for examining soft tissue in ligament and tendon injuries, spinal cord injuries, brain tumors, etc. CT scans are widely used in emergency rooms because the scan takes fewer than 5 minutes. An MRI, on the other hand, can take up to 30 minutes.

- An MRI typically costs more than a CT scan. One advantage of an MRI is that it does not use radiation while CAT scans do. This radiation is harmful if there is repeated exposure.



Figure 4: MRI Machine

STUDENTS LIST

Sr. No	ID No.	NAME
1.	16ET409	OZA MRUDANG JAYESHBHAI
2.	16ET410	SAKSHI JAIN
3.	16ET411	SHRUTI JAIN
4.	16ET415	SHIKHAR MAHESHWARI
5.	16ET417	GAUTAM VIVEKANANDAN
6.	16ET419	PATEL MEET BINOYKUMAR
7.	16ET421	GUPTA MUSKAN RAVI
8.	16ET427	MANGUKIYA RUSHABH PRAVINBHAI
9.	16ET429	PARSANA DHRUVIN RAMESHBHAI
10.	16ET436	JAIN DHARMIKKUMAR PARESHKUMAR
11.	16ET440	PATEL AKSHAR RAJESHBHAI
12.	16ET444	D. ATCHAYA NADAR
13.	16ET447	DUBEY ASHISH VIJAY
14.	16ET449	SHAH JINISHKUMAR VIRENKUMAR
15.	16ET450	KOSTA URVISH NIRMAL
16.	16ET452	GONDALIYA SWETA NITINBHAI
17.	16ET454	JARIWALA ZEEL ASHISH
18.	16ET455	JOSHI SOHAM
19.	16ET456	INDERJEET SINGH SEHRA
20.	16ET457	KUMARI DHWANI AGRAWAL
21.	16ET460	ODEDRA PRAKASH ARJANBHAI
22.	16ET466	MAKWANA HERRY CHETANBHAI
23.	16ET468	AKASH N SACHAN
24.	17EC601	BANTHIA PUNITA KAMLESHKUMAR