

NIRMA UNIVERSITY

INSTITUTE OF TECHNOLOGY

GOONJ

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CONTENT



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Published by:

Editorial Committee

Institute of Technology, Nirma University

INSTITUTE NEWS

INDIAN SOCIETY FOR TECHNICAL EDUCATION (ISTE) NEW DELHI & GUJARAT SECTION ANNOUNCED THE ISTE AWARDS 2020 AND THE INSTITUTE OF TECHNOLOGY, NIRMA UNIVERSITY HAS RECEIVED THE AWARDS IN APRIL, 2022

AWARD CEREMONY

Best ISTE Students Chapter Award (Gujarat Section) 2020 by ISTE New Delhi



ISTE

**SHRI
PRAVINKAKA
RATILAL
MANIAR BEST
KNOWLEDGE
CENTRE
(LIBRARY)
AWARD**



ISTE

**BEST INSTITUTE
FOR
CONTRIBUTING
IN SOCIAL
ACTIVITIES**



PATENT



An Indian patent is granted to Dr. Amita Chaudhary in collaboration with FITT, IIT Delhi for an invention entitled "Aliphatic ionic liquid compound to capture carbon dioxide gas and method of preparation thereof" on 31st March 2022, in accordance with the provisions of the Patents Act, 1970

Design Patent



An Indian design registration entitled "Design of tool wear monitoring and measurement apparatus" was granted to Institute of Technology, Nirma University, designed by Dr K. M. Patel, Dr. M. A. Makhesana and Prof. P. J. Bagga of Mechanical Engineering Department in May 2022. The said design was an outcome of the Nirma University funded minor research project.

Design Patent



An Indian design registration entitled "Design of 6 degrees of freedom feeding robotic arm for aged and differently-abled people" was granted to Institute of Technology, Nirma university, designed by Prof. Reena Trivedi, Prof. Jatin M Dave of Mechanical Engineering Department and Prof. Priyam Parikh in May 2022.

Design Patent



An Indian design registration entitled “Design of Floor Cleaning Robot” was granted to Institute of Technology, Nirma University, designed by Prof. Jatin M Dave, Prof. Darshita J Shah, Mr. Maharsh Shanghvi and Mr. Karan Sharma of Mechanical Engineering Department in May 2022.

Design Patent



An Indian design registration entitled “Design of Telecom Tower Climbing Robot” was granted to Institute of Technology, Nirma University, designed by Prof. Jatin M Dave, Prof. Darshita J Shah, Prof. Mihir M Chauhan and Prof. Bharat A Modi of Mechanical Engineering Department in May 2022.

MoU Signed

MoU with Milacron India

Nirma University and Milacron India has signed an MoU on March 17, 2022 to strengthen the Academy –Industry collaboration. The partnership will benefit Student's internship, Industrial Visits, Project Work, Campus Placement and guest lectures.



MoU With V360 Technology Inc., USA

An Memorandum of Understanding (MoU) between V360 Technology Inc., USA and Institute of Technology, Nirma University (IT-NU) was signed on the day of 10th March 2022.



The MoU is signed with a vision to develop academic and research co-operation in research and development for the advancement and dissemination of technology-based solutions in the areas of mutual interest focusing the application of Data Science in the domain of Machine Learning, AI, VR, AR, Analytics, and Computer Vision etc. It is also planned to organize joint seminars, workshops, symposia, conferences, and meetings on research issues in areas of mutual interest and to carry out joint research and disseminate the research findings through jointly credited research publications.



MoU With B & R Automation Pvt. Ltd

An MoU with B & R Automation Pvt. Ltd., is signed on December 1, 2021. Under this MoU the Institute will plan various activities which will help students to enhance their practical knowledge in the area of Automation Industry.

HIGHLIGHTS

RANKING

- ❖ The institute was ranked 95th among the top 100 Private Engineering Colleges in India by Outlook-ICARE Rankings-2022 India's best colleges.
- ❖ The institute was ranked 17th in the Best Private Engineering Colleges of India by India Today – 2022.
- ❖ **CSR-GHRDC Engineering Colleges Survey 2022 – Competition Success Review. ITNU bagged**

2nd Rank in top Leading Engineering Colleges of Super Excellence

1st Rank in top Engineering Colleges Ranked by State (Gujarat)

7th Rank in top 25 Engineering Colleges Ranked by Faculty, Research, Consultancy, EDP & other programmes.

5th Rank in Top 25 Engineering Colleges Ranked by Placements, USP, Social Responsibility, Networking & Industry Interface.

4th rank among the Top Leading Engineering Colleges of Super Excellence in India and placed at first position among the Top Engineering Colleges ranked by the Gujarat State.

- ❖ **According to The Times of India: Times Engineering Institute Ranking Survey 2022, the institute was awarded**

17th Rank among top 170 Engineering Institute Rankings 2022, Overall Rankings

12th Rank among top 125 Private Engineering Institute Rankings, 2022

4th Rank among Regional Wise Institutes in West Zone

- ❖ **According to Education World – India Higher Education Rankings 2022-23 the institute was accorded**

23rd Rank among Top 100 Private Engineering Colleges

2nd Rank among Private Engineering Institutes in state wise ranking for the state of Gujarat.

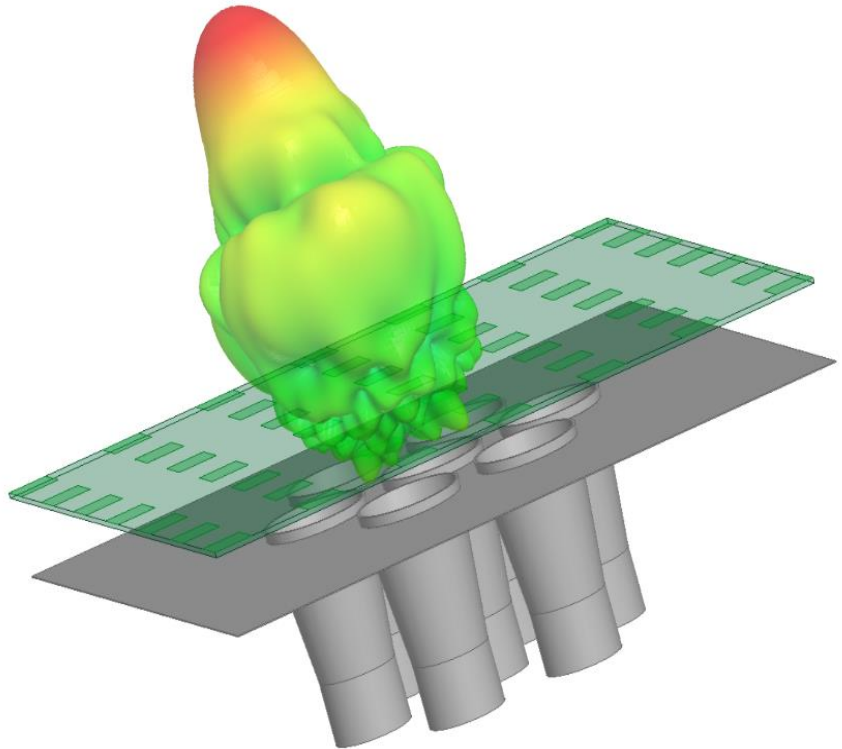
153rd rank by National Institutional Ranking Framework (NIRF) by the Ministry of HRD, Government of India.



**PROF. DHAVAL PUJARA
RECEIVED A SANCTION OF RS.
22.34 LACS FROM THE INDIAN
SPACE RESEARCH
ORGANIZATION (ISRO) TO
WORK ON A PROJECT**



RESEARCH ARTICLE



PROJECT TITLE

Design and Development of Fabry Perot Cavity-based Feed Cluster

The proposed research includes the design, analysis, and realization of a PRS-based feed cluster (septet) with high gain. During the project span of two years, the performance of the individual feed, as well as feed cluster with and without PRS, will be studied. A detailed analysis of impedance matching of individual feed input ports will also be carried out. The performance of the proposed feed cluster with PRS will be measured for important antenna parameters like return loss, gain, radiation patterns, etc. As outcomes of this research, a complete feed-cluster design (with geometrical parameters), a fabricated antenna with test results, and a detailed project report will be submitted to the Space Applications Centre (SAC-ISRO).

INSTITUTE ACTIVITIES

CENTRE OF EXCELLENCE IN
DATA SCIENCE

ACTIVITIES
UNDER

- The flagship event of the CSE Department, MINeD 2022 : a national level hackathon was organized by the Centre of Excellence in Data Science at the Department of Computer Science and Engineering in collaboration with SUNY Binghamton University during March 3 - 5, 2022. More than 500 participants attended the event. Four industry partners (Cactus Communications, D360 Technologies, J K Lakshmi Cement Ltd. and HOPS Healthcare) sponsored track prizes. The grand prize of USD 1000 was sponsored by Binghamton University. Participants worked for 48 hours to solve the problems in the fields of Smart Healthcare, Smart Manufacturing, Image Processing and open innovations.
- Dr. K Srihari, Dean, Thomas J. Watson School of Engineering and Applied Science at Binghamton University visited the department on May 31, 2022 and discussed with CoE team members various opportunities to further extend the collaboration



Interaction with Outside World

The Department of Mechanical Engineering has organized a course on **“Deep Learning: Applications in Engineering”** with **Dr Rahul Rai**, **Dean’s** Distinguished Professor in the Clemson University International Center for Automotive Research (CU-ICAR), **South Carolina, USA** as the faculty. The 40 hours course is being conducted through online mode and involve weekly lectures, tutorials and support sessions between Feb-April 2022. The course beneficiaries include MTech (Mech) students, Research Scholars and faculty members from School of Engineering, IT, NU.



Dr. Rahul Rai earned his doctoral degree in Mechanical Engineering from The University of Texas at Austin USA in 2006 focusing on Sequential Sampling techniques. Sequential sampling is popularly known as “Active Learning” in the machine learning domain. He directs the Geometric Reasoning and Artificial Intelligence Lab (GRAIL).

Dr. Rai’s research is focused on developing computational tools for Manufacturing, Cyber-Physical System (CPS) Design, Autonomy, Collaborative Human-Technology Systems, Diagnostics and Prognostics, and Extended Reality (XR) domains. His research has been supported by NSF, DARPA, ONR, ARL, NSWC, DMDII, CESMII, HP, NYSERDA, and NYSPII (funding totaling more than \$20M as PI/Co-PI). He has authored over 150 papers to date in peer-reviewed conferences and journals covering a wide array of problems.

Dr. Rai has delivered two popular online courses at Coursera on “*Intelligent Machining*” and “*Advanced Manufacturing Process Analysis*”. He has also delivered courses on Deep Learning/ML at many institutes including NITIE, Bombay.

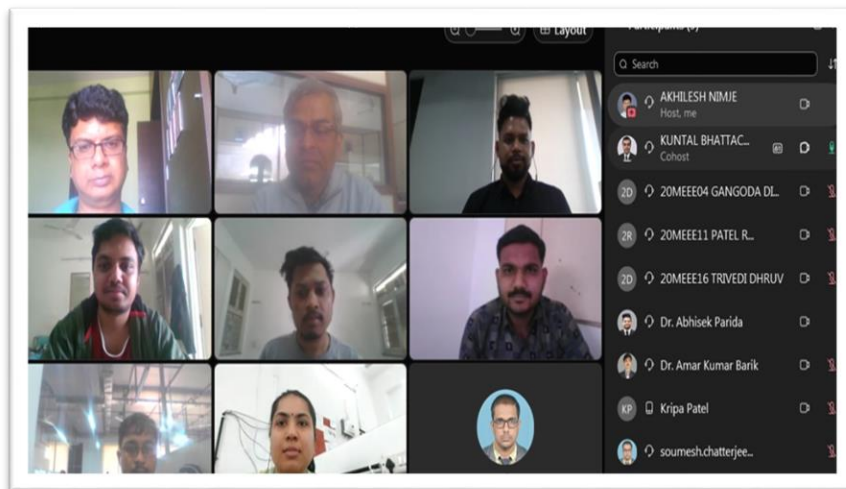


- A one-day workshop on “Role of Optimization Techniques in Power Systems” was organized on 19th February 2022 by the Department of Electrical Engineering, Institute of Technology with Centre for Continuing Education, Nirma University, Ahmedabad. A total of 09 participants included PG students, Research Scholars and Faculty members from Nirma University.

The workshop begin with opening remarks by the Head of Department, Electrical Engineering Prof. (Dr.) S. C. Vora and Head-CCE Dr. Y. N. Trivedi on the current scenario of optimization techniques in various applications. The entire workshop was divided into several sessions.

The sessions on “Introduction to Program”, “Power Transfer Capability through FACTS”, “Introduction to Soft Computing”, “Different Types of Soft Computing Techniques” and “Optimum Compensation Location and Loss Reduction” were jointly conducted by both program coordinators Dr. Kuntal Bhattacharjee and Dr. Akhilesh Nimje.

The programme came to an end leaving fond memories in the mind of program coordinators and a great sense of satisfaction and accomplishment among all the participants, faculty and staff who were associated in its preparation.



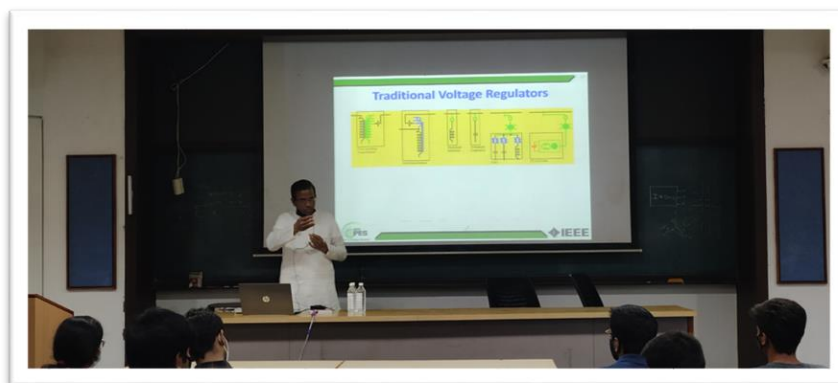
A glimpse of workshop on Role of Optimisation techniques in power systems

- A one-day national seminar on “SMART Power Flow Controllers – A necessity of Future Power Grids” was organized by the Electrical Engineering Department, Institute of Technology, Nirma University on April 02, 2022 from 10.00 am to 3.30 pm.

Dr. Kalyan Sen, Fulbright and GIAN scholar, IEEE Distinguished lecturer and Chief Technical Officer, Sen Engineering Solutions, USA was the speaker for the seminar. Total 31 Participants from Industries including the Utility company (GETCO), Faculty members, Ph.D. Scholars from other institutes and PG students participated in the seminar. Dr. Chintan R. Mehta worked as a coordinator for the national seminar.

The topics covered in the seminar are as follows.

1. Concepts of power flow in power systems
2. Voltage regulators (Concepts and different types including SV, STATCOM etc.
3. Asymmetric and symmetric phase angle regulators
4. Reactance regulators (discussion on TSSC, TCSC, SSSC etc)
5. Impedance regulators (discussion on UPFC and Sen transformer)
6. Discussion on SMART power flow controllers.



- One day online training programme on “LVS” was conducted by the ATC Mitsubishi Electric India Pvt. Ltd., Institute of technology Nirma University, Ahmedabad, Gujarat. On December 29-30, 2021.
- One day Offline training programme on “MELSEC iQ-F PLC” was conducted by the ATC Mitsubishi Electric India Pvt. Ltd., Institute of technology Nirma university, Ahmedabad, Gujarat on January 29, 2022.
- Two days online training programme on “iQR PLC” was conducted by the ATC Mitsubishi Electric India Pvt. Ltd., Institute of technology Nirma University, Ahmedabad, Gujarat on February 18 -19, 2022.

- One day online training programme on “GOT 2000” was conducted by the ATC Mitsubishi Electric India Pvt. Ltd., Institute of technology Nirma University, Ahmedabad, Gujarat on March 5, 2022.
- One day online training programme on “LVS” was conducted by the ATC Mitsubishi Electric India Pvt. Ltd., Institute of technology Nirma University, Ahmedabad, Gujarat on April 20, 2022.
- Two days online training programme on “SCADA MC works 64” was conducted by the ATC Mitsubishi Electric India Pvt. Ltd., Institute of technology Nirma University, Ahmedabad, Gujarat on May 25 -26, 2022.
- Four days Offline training programme on “MELSEC iQ-F and iQ-R series PLC” was conducted by the ATC Mitsubishi Electric India Pvt. Ltd., Institute of technology Nirma university, Ahmedabad, Gujarat on 27 -30 June 2022
- Two days workshop on “IoT and Automation using NodeMCU” was arranged from 26 to 27 March, 2022 Organized by Centre for Robotics and Automation in association with Centre for Continuing Education, Nirma University. Total 48 students of BTech programme from different institutes of Ahmedabad participated in the teams of 4 to 5 students each. During the two days event the participants were provided with a take away kit per team for hands-on learning on usage of NodeMCU control board and its integration with various sensors and actuators for automation and IoT application. The event was coordinated by Dr Jatin Dave (ME) and Dr Mihir Chauhan (ME). The technical session was delivered by Dr Akash Mecwan (EC).





- Department of Civil Engineering, Institute of Technology, Nirma University had organized a national webinar on “Transportation Geotechnics” during December 20 - 24, 2021. The webinar is supported by GUJCOST, Government of Gujarat. The webinar will focus on properties of geomaterials for rational and sustainable design and construction of transportation infrastructures.
- Department of Civil Engineering, Institute of Technology, Nirma University had successfully organized a workshop on "Building Information Modelling (BIM) using Revit" under the banner of Centre for Continuing Education during January 4-5, 2022. Total 29 students and 7 faculty members have participated in the workshop.
- Civil Engineering Department under Centre For Continuing Education (CCE) had organized a one day workshop programme on “Application of Remote Sensing and GIS in Water Resources Management” for B.Tech & M.Tech students, Research scholars and faculty members from Engineering colleges, polytechnic Institutes, and other academic Institutes on April 30, 2022. The proposed workshop had focus on present trends on research work in the field of Water Resources Management. During this workshop the participants learnt the fundamentals of RS and GIS and their applications in water resources field.
- The Civil Engineering Department has organized a Professional Development Course on Building Engineering – Construction, Waterproofing, Maintenance and Repairs for managers of Pidilite Industries Ltd, Mumbai. This training programme is divided into two modules. Module 1 consists of Construction and Waterproofing for new buildings and Module 2 consists of Maintenance, Remedial Water proofing and Repair of old Structures. The third batch of the training programme for Pidilite Managers commenced from May 18, 2022 and the orientation programme was held on May 17, 2022.



Experts Lectures Organised - [Click here](#)

Innovative Initiatives

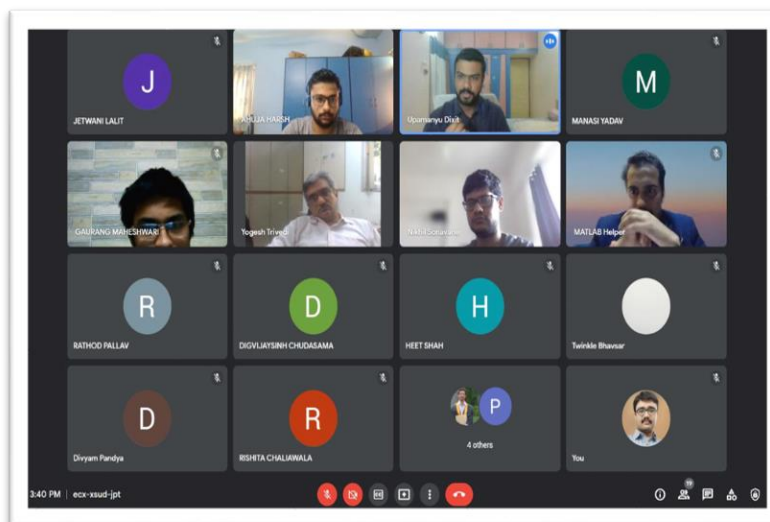
- A three-day training program for the non-teaching staff members of the Institute of Technology, Nirma University was organized by the Department of Electronics and Communication Engineering during Jan 3-5, 2022.



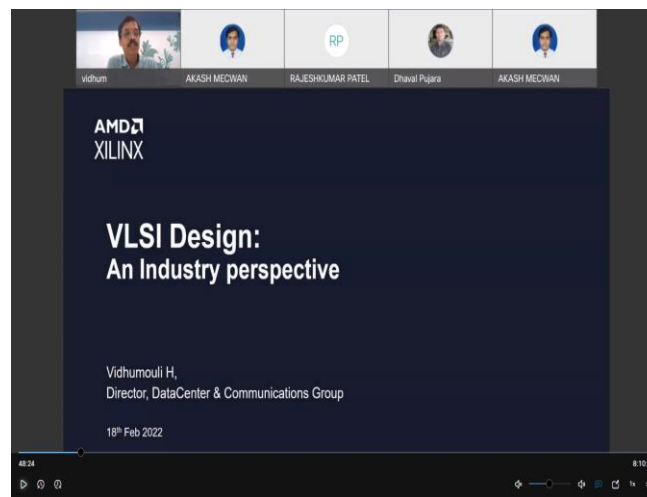
- The Department of Electronics and Communication (EC) Engineering organized a one-day Online Orientation Programme for the students of B.Tech., Semester IV, VI, and M.Tech. Semester II.



- The Department of Electronics and Communication Engineering, Institute of Technology, Nirma University, organized a 48-hour long online event “MATLAB Hackathon”, from January 01-03, 2022.



- The Department of Electronics and Communication Engineering, Institute of Technology, Nirma University organized a national-level webinar on “Research Avenues in VLSI Design”. The webinar has received overwhelming responses from the students, academicians, and industry personnel with more than 110 registered participants.



- The Department of Computer Science and Engineering organized Scopus Indexed, '4th International Conference on Futuristic Trends in Networks and Computing Technologies (technically collaborating with Springer Nature) during December 10-11, 2021. The FTNCT-2021 received an international overwhelming response and had participation from 16 countries with 283 papers in different areas including networking, computing, machine learning, data mining, wireless communications, big data, cloud computing, augmented reality, image processing, mobile and optical communications, cyber security etc. which were divided into four major conference tracks. A workshop on "Speech Processing using Python" under the Centre for Continuing Education (CCE) was organized by the CSE Department. The workshop was conducted by Dr Sapan H Mankad and Prof Dvijesh Bhatt during January 29-30, 2022 .



FACULTY CORNER

AWARDS ACHIEVEMENT

National Award for guided Best M.Tech Thesis in Mechanical Engineering



Certificate of Achievement 2020 Awarded by ISTE to **Dr R N Patel** for guided Best M.Tech Thesis in Mechanical Engineering (Second Prize) titled Alternative Amine Scrubbing utilizing Seawater and Nickel Nanoparticles Catalysts : A Microfluidic Approach submitted by Abhishek Ratanpara



Dr Madhuri Bhavsar received ISTE national level award of Best Women Engineering College Teacher. Nominations for the said award were invited from across the country. Selection criteria consisted of many parameters like research, academic achievements, publications, funded projects, methodologies and various parameters observed during teaching learning, administration contributions and student centric activities implemented.

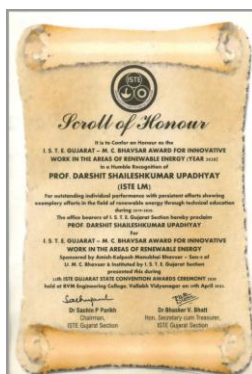
ISTE National Award for Best Women Engineering College Teacher

Dr Sudeep Tanwar has won the Dr. KW Wong Annual Best Paper Prize for the article "Blockchain-based electronic healthcare record system for healthcare 4.0 applications" published in Journal of Information Security and Applications, Elsevier. The award is sponsored by Elsevier (publishers of JISA) and they also announce a prize of US \$750. The paper was selected by an Editorial Board Paper Review Panel from a list of high-quality research papers published in JISA over the past three years (2019-21).



Dr. Sudeep Tanwar has earned 38th RANK (within India) in the 8th edition of "Top Computer Science Scientists for Computer Science" which was published by Research.com, one of the major websites for Computer Science research offering credible data on scientific contributions since 2014. He is the only faculty in the list from Gujarat state and maximum Professors are from IITs, IISC, NITs, and other premier institutes. Very few are from a private university. The ranking contains h-index, publications, and citations values collected on December 6th, 2021.

Dr. Darshit Upadhyay, Assistant Professor, Mechanical Engineering Department, is Awarded for the category "ISTE ISTE Gujarat State Awards 2020, - M. C. Bhavsar Award for Innovative Work in the areas of Renewable Energy" in the month of February 2022



**ISTE GUJ- M. C.
Bhavsar Award for an
Innovative Work in the
areas
of Renewable
Energy**

Research Projects - [Click here](#)

Research Publications - [Click here](#)

Conferences Attended - [Click here](#)

STUDENTS' CORNER

AWARDS ACHIEVEMENT

ROBOFEST - GUJARAT 2.0



Team ITNU Received Rs. 100000/- cash prize in ROBOFEST - GUJARAT 2.0 Competition on 06/04/2022 in category-VII (Four legged robot with Quadrupedal). Its prototype model has been selected for display at Robotic Gallery at Gujarat Science City.

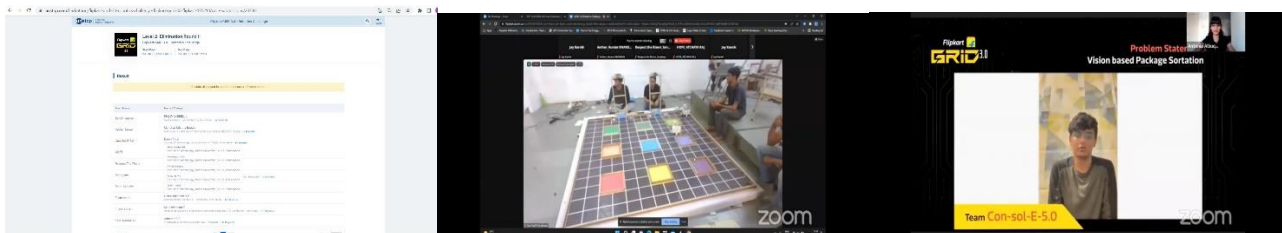
The Team

1. Shekhda Dhrumil (ME)
2. Boda Jigar (EC)
3. Vasjariya Abhay (EC)
4. Kushal Sheth (ME)
5. Garara Parth (ME)

Mentor – Dr. Mihir Chauhan

National Level Competition

A team of the students of Electronics & Instrumentation department secured a rank among top ten in the Flipkart GRiD Challenge 3.0 - Flipkart's Flagship Engineering Campus Challenge event, February 2022.



ROBOCON @ International level

An International Robocon 2021 was hosted by China through online mode on 12 December 2021 wherein Team Nirma Robocon represented India and secured 7th rank at International level out of 21 teams of different countries and also won Nagase Award for excellence. The winner of the international robocon 2021 is Indonesia which is completing the full game in 40 seconds while Team Nirma completed the full game in 45 seconds. So it was a very close competition.

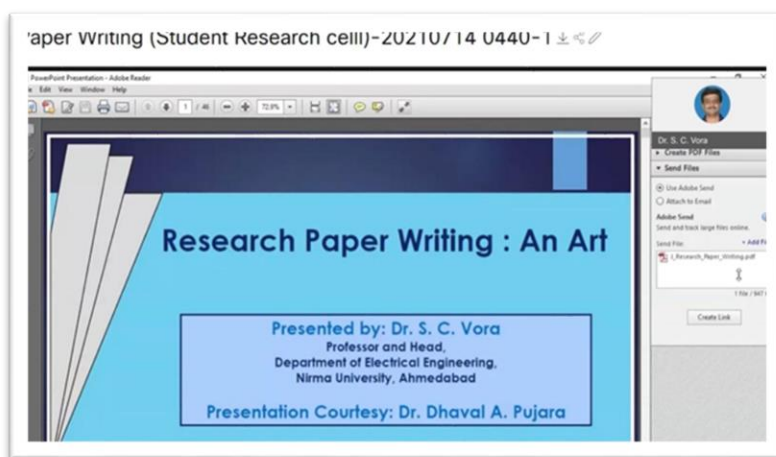
Team Nirma has secured the highest International Rank amongst all the Indian teams who have represented the country so far in all previous competitions of the last 20 years.

Team Nirma Robocon has been participating in the international robotic contest ROBOCON organized by Asia-Pacific Broadcasting Union (ABU) every year since 2002. Having continuous participation of last 20 years, Team Nirma Robocon have won the National Championship 9 times so far and represented India at international event in year 2002 (at Japan), 2003 (at Thailand), 2006 (at Malaysia), 2008 (at India), 2011 (at Thailand), 2014 (at India), 2015 (at Indonesia), 2018 (at Vietnam) and 2021 (hosted by China in online mode).



Research Activities Carried Out By Student Research Cell

To promote the culture of research amongst students, the student research cell (SRC) of Electrical Engineering Department carried out lecture series on various topics viz. How to write a report, research paper; How to carry out literature survey; Introduction to Latex; Introduction to plotting tools etc. Also, an event was organized where the students were demonstrated the usage of very high-end instruments, their features and nuances of setting up the devices before their usage. For many of the instruments, the operational aspects and the theory behind the quantity measurement were discussed. The SRC also invited Dr. Sivaji Chakraborty to deliver an online session on “How to do experimentation”. Many of the students have started using these tools in preparing their reports and project presentations. The photographs of events are as follows:



Mr. Rajesh Gupta and Ms. Tejal Rathod, Ph.D Scholars at CSE Department received a BEST PAPER AWARD in IEEE IAS 6th International Conference on Computing, Communication and Automation (IEEE ICCCA 2021) held virtually during December 17-19, 2021.

Mr. Hetav Modi, Ms. Jigna Hathaliya, and Mr. Rajesh Gupta students of the Department of Computer Science and Engineering presented a paper titled “Deep Learning-based Parkinson disease Classification using PET Scan Imaging Data” in IEEE 6th International Conference on Computing, Communication and Automation (ICCCA) conference proceedings.

Mr. Yogesh Patel student of M Tech CSE participated in a competition titled “Deepfake Image Detection and Reconstruction Challenge” which was part of the 21st International Conference on Image Analysis and Preprocessing, Lecce, Italy. He secured third place in the first task of the challenge and he was invited to present his solution during the conference held on 25th May 2022 at Lecce, Italy (in an online mode).

Mr. Rajesh Gupta a Full-Time Research Scholar along with B.Tech students published a paper titled “Blockchain for IoV in 6G environment: review solutions and challenges” in Cluster Computing, Springer (SCI, Impact Factor: 1.809). [Online Date: 27-Jan-2022] DOI: <https://doi.org/10.1007/s10586-021-03492-0>

Ms. Ishwa Shah, Ms Chelsi Doshi, and Mr. Mohil Patel students of B.Tech CSE published a research paper titled “A Comprehensive Review of the Technological Solutions to Analyse the Effects of Pandemic Outbreak on Human Lives” in *Medicina*, MDPI, 58, no. 2: 311.

Mr. Rajesh Gupta and Ms. Tejal Rathod Ph.D Scholars of CSE Dept., published a paper titled “Optimal Resource Allocation for Quality-of-Service in D2D Communication Underlying Imperfect CSI” in IEEE 6th International Conference on Computing, Communication and Automation.

Chhichhia Chaitanya, Aakarshak Nandwani students of B.Tech EC successfully presented a paper at the National Conference on Communications (NCC) conducted by five IITs, IIT Bombay on Performance Analysis of Vertical Underwater Visible Light Communication System with Cross-QAM during April-2022.

Ayush Mishra M.Tech student (MECV) successfully presented a paper at the 12th International Conference on Science and innovative engineering at Jawahar Engg. college, Chennai on Lightweight Cryptography on FPGA during June-2022.

Akshat Jain and Barun Debnath students of B.Tech EC successfully presented a paper at the 2022 IEEE Sponsored Second International Conference on Advances in Electrical, Computing, Communications and Sustainable Technologies (ICAECT 2022) held at the Department of Electrical and Electronics Engineering, Shri Shankaracharya Technical Campus (SSTC), Bhilai, Chhattisgarh, India on Underwater Visible Light Vertical Communication for Distinctive Chlorophyll during April-2022.

Pujan Vasoya successfully presented a paper at the National Conference on Advancement in Communication, Electronics, Computer and Automation Technology organized by Department of Electronics and Communication Engineering, Institute of Technology, Nirma University, Ahmedabad on Design of Voltage Controlled Oscillator using GDPK 90nm CMOS Technology during April-2022.

Mr. Rajesh Gupta, Ph.D scholar published a paper titled “Optimal Resource Allocation in NOMA-assisted D2D Communication with Imperfect Channel State” in IEEE GLOBECOM 2021.

Ms. Jigna Hathaliya Ph.D scholar published a research paper titled “*Adversarial learning techniques for security and privacy preservation: A comprehensive review*” in *Security and Privacy*, Wiley, Early Access. (doi: <https://doi.org/10.1002/spy2.209>)

Mr. Rajesh Gupta Ph.D scholar along with Prof Anuja Nair, published a paper titled “FAIR: A Blockchain-based Vaccine Distribution Scheme for Pandemics” in IEEE GLOBECOM 2021 (H-index 100). [Online Date: 24-Jan-2022] DOI: 10.1109/GCWkshps52748.2021.9682114

Mr. Nilesh Kumar Jadav and Mr. Rajesh Gupta, Ph.D Scholars published a research paper titled “*A survey on energy-efficient resource allocation schemes in device-to-device communication*” in *International Journal of Communication Systems*, Wiley, Early Access.

Mr. Rajesh Gupta and Ms. Jigna Hathaliya Ph.D Scholars published a paper titled “A Smart contract-based secure data sharing scheme in Healthcare 5.0” in IEEE GLOBECOM 2021 DOI: 10.1109/GCWkshps52748.2021.9681956

Arpit Shukla, student of B.Tech CSE published an article titled 6Blocks: 6G-enabled trust management scheme for decentralized autonomous vehicles in *Computer Communications Journal*, Elsevier (SCI, WoS, IF: 3.167)

Mr. Rajesh Gupta, Ph.D scholar and Ms. Farnazbanu Patel, PG student published a research paper titled “*A Deep-Q Learning Scheme for Secure Spectrum Allocation and Resource Management in 6G Environment*” in the journal *IEEE Transactions on Network and Service Management* (Dol: 10.1109/TNSM.2022.3186725)

A paper titled "Tactile internet and its applications in 5G era: A comprehensive review" by Mr. Rajesh Gupta (18FTVPHDE31) is in the TOP DOWNLOADED ARTICLE IN INTERNATIONAL JOURNAL OF COMMUNICATION SYSTEMS, WILEY (SCI, WoS, Impact Factor: 1.182)

Mr. Rajesh Gupta along with a B.Tech student published a paper titled "*SaTYa: Trusted Bi-LSTM-Based Fake News Classification Scheme for Smart Community*" in IEEE Transactions on Computational Social Systems. [10.1109/TCSS.2021.3131945](https://doi.org/10.1109/TCSS.2021.3131945)

Ms. Riya Kakkar and Mr. Rajesh Gupta, Ph.D scholars presented a paper titled "*Blockchain and Multiple Linear Regression-based Energy Trading Scheme for Electric Vehicles*" in International Conference on Computer, Information and Telecommunication Systems (IEEE CITS) was virtually held at Istanbul, Turkey on 11-13 Nov. 2021.

Vimal Sheoran a student of MTech co-authored and presented a paper titled "*A Review of Non Invasive Blood Pressure Monitoring using Artificial Intelligence based Approaches*" at International Conference on Applied Artificial Intelligence and Computing (ICAAIC 2022). He co-authored this paper with his guides Dr Gaurang Raval and Dr Sharada Valiveti and Dr Saurin Parikh. (16th June 2022).

Mr. Dhairya Jadav B.Tech student and Mr. Rajesh Gupta Full-Time Research Scholar presented a paper titled "*Amalgamation of Blockchain and AI to Classify Malicious Behavior of Autonomous Vehicles*" in International Conference on Computer, Information and Telecommunication Systems (IEEE CITS) was virtually held at Istanbul, Turkey on 11-13 Nov. 2021.

Mr. Rajesh Gupta Full-Time Research Scholar published a paper titled "*A Zero-Sum Game-based Secure and Interference Mitigation Scheme for Socially Aware D2D Communication with Imperfect CSI*" in IEEE Transactions on Network and Service Management in May 2022.

Mr. Aryan Kalariya, a student of Sem-IV, B.Tech in Mechanical Engineering, presented research paper titled "Thermal and Structural Analysis of Barium Hexaferrite Synthesized by Simple Heat Treatment Method" and was awarded as best poster presentation in the conference - Recent Advancements in Materials Science And Nanotechnology, from 4 to 5 Feb 2022, organized by Electronic and communication engineering department, Nirma University



ISA Students' Chapter Nirma University arranged an amazing event- Labyrinth on January 20, 2022 for students to socialize, start networking and make good connections with batch-mates. It provided a chance to interact and participate in some mind-numbing quiz questions during the event. Labyrinth was a platform for everyone and anyone from a freshman to a senior year student to get involved in ice breaker event.

International Society for Automation Students' Chapter Nirma University arranged a webinar on "scholarship opportunities" to provide guidance to students who have outstanding potential and academic achievement in fields related to automation on January 31, 2022.



ISA student' chapter Nirma University organized a "National Level Seminar series on Industrial Internet of things", an opportunity for students to learn about IIoT by eloquent speakers on March 4-5, 2022. It was a 2-day seminar including five erudite experts in the field. The series assimilated topics ranging from the Introduction of IIoT to the transformation that may be introduced by IIoT.

ALL- GUJARAT INSTRUMENTATION

& CONTROL ENGINEERS' MEET 2022 (AGICEM'22)

The third All Gujarat Instrumentation and Control Engineer's Meet (AGICEM'22) was organized at the Institute of Technology, Nirma University on 25th April 2022. The meet brought together all the institutes of Gujarat offering Instrumentation and Control engineering on a common platform. The meet was aimed to provide a stage for discussion and development of the Automation industry. Also, the purpose of the congregation was to unite the departments of instrumentation and control engineering of all institutions over Gujarat. This helped in creating a sense of togetherness bridging our distances and bringing about cognizance and flow of expertise. The meeting saw the participation of many colleges all over Gujarat offering Instrumentation and Control engineering courses in their college having 100+ participants and 10+ faculties.



The ISA Students' Chapter Nirma University organized a charity drive as part of social initiative. The members and visited the Karmyog Foundation, an old age home at Chandkheda for humanitarian work on 25th March 2022. The initiative supported by Dr. H.K Patel and Dr. Ankit Sharma by accompanying the members.



ISA Scholarship Award Winners

Seven students from the Electronics & Instrumentation Engineering Department of Institute of Technology, Nirma University, secured scholarships worth **USD 8725**, from the International Society of Automation (ISA), USA.

Every year ISA grants scholarships to bright minds for their contribution in the field of automation and to the growth of ISA Students Chapter in their institute. It is a global level scholarship and the society receives nominations from across the globe. This year seven students from Nirma University received the scholarship.

Ms Somya Gupta (2000 USD) and Ms Devanshi Parmar (2000 USD) received the prestigious ISA Educational Foundation Scholarship Award 2021. In addition to these, one student, Mr Devansh Rana (825 USD) is received the prestigious ISA Analysis Division's Scholarship. Students successfully achieved a total scholarship of USD 4825.

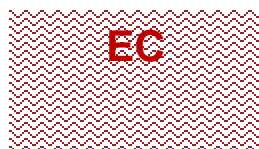
Ms. Urja Patel (1400 USD), Ms. Devasnshi Parmar (1000 USD), Mr. Aditya Mistry (750 USD), Mr. Prashant Somaiya (750 USD) received scholarships from PMCD division of ISA. Students successfully achieved a total scholarship of \$3900.

The Electronics and Communication Students' Organization organised an online event named "Placement Mantra" during March 19 and March 27, 2022.



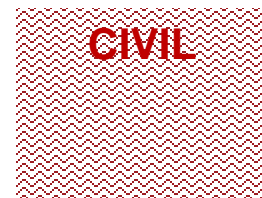
The Electronics and Communication Students' Organisation organised an offline Treasure Hunt competition, "Campus Voyage" on March 22, 2022, from 8:55 am to 11:00 am for all the first-year students of ITNU.

On April 30, 2022, the Electronics and Communication Students' Organization conducted a one-day workshop on PCB Design from 9:30 AM to 6:30 PM.



The Department of Electronics and Communication Engineering, Institute of Technology, Nirma University has organized a national conference on "Advancement in Communication, Electronics, Computers, and Automation Technology" during April 29–30, 2022.

The team of the six students from B Tech and M Tech in Civil Engineering (Foram Shah, Hasmita Mehta, Hetavi Patel, Parthiv Trivedi, Somali Guchhait, Utsav Modh) successfully cleared the hackathon at Nirma

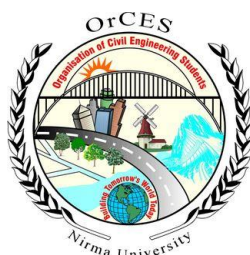
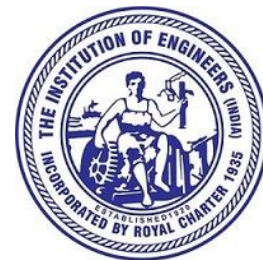


University level in Hardware category on March 17th, 2022 and presented Nirma University at District level competition.

CIVIL

The IGBC Student chapter and Department of Civil Engineering had arranged an online webinar on “Building Services” from January 25, 2022 to January 27, 2022. The first session was conducted by Mr. Nimit Sheth, CEO and Managing director, Ramana Safety Systems (I) Ltd., Ahmedabad on the title “Fire Safety in Buildings” on January 25, 2022. The second session was conducted by Mr. Bhavin Shah, Founder, SQVe Consultants, Ahmedabad on title “Overview of MEP Services for Civil Engineers” January 27, 2022.

IEI Students’ Chapter - Civil Engineering Department, Institute of Technology, Nirma University (IT-NU) had organized a webinar on “Career Talks and Further Studies in US” on February 26, 2022 at 08.15 a.m. through ONLINE mode using webex platform. The webinar was conducted by five expert speakers who are also an alumni member of civil engineering department (i) Mr. Harnish Marwadi (ii) Mr. Dhyey Bhavsar (iii) Mr. Nishit Prajapati (iv) Mr. Aagam Dalal and (v) Mr. Tej Desai. Total of 28 participants including undergraduate students and faculty members of the civil engineering department have attended the webinar.



Organization of Civil Engineering Students club of Civil Engineering Department, Nirma University along with N.S.S; School of Engineering and Institute of Law unit organized a blood donation drive in the University premises on April 29, 2022. The drive was arranged with the help of Prathma Blood Bank. This blood donation drive was arranged for students, faculty and staff members of Nirma University. The drive saw enthusiastic participation from students, faculty and staff members of various institutes under Nirma University. A total of 300 units of blood was collected in this drive. A memento was gifted to all the donors by Prathma Blood Bank.

Department of Civil Engineering, Institute of Technology, Nirma University under the Indian Concrete Institute Student Chapter organized an event Site Practices in Engineering and Construction (SPEC), by Mr. Himanshu Patel, BDH, Nu Vista Ltd on May 02, 2022. The webinar focused on the topic of good site construction practices. It included the three most essential factors: materials, safety, and procedures. The skills which are required by the civil engineer for site efficiency were discussed out of which technical skills and safety skills are of prime importance. The selection of suitable materials is a necessity in the field of construction. The session lasted for 90 mins and 150 participants were present in the webinar including Students, Professors, and industrialists



CIVIL

World Water Day 2022:- On March 22, 2022, Civil Engineering Department, School of Engineering, Organization of Civil Engineering Students, IGBC Student Chapters along with NSS Unit, Nirma University had organized "World Water Day -2022" programme. An Expert lecture session was organized on World Water Day 2022 theme "Ground Water: Making Invisible Visible" from 3:00 pm to 4:00 pm. There were various competitions organized such as Save it Now: Writing Competition, Every Drop Counts: Photography Competition, Leaving water the future: videography Competition was held during this event from 4:00 to 6:00 pm. More than 100 students participated in these competitions. After the completion of the competition, an exhibition was held, in which all the photographs and video of the students were displayed in the exhibition. In addition to this, an awareness drive was also being organized to aware the quality of water for students in which the students had participated enthusiastically.

Ms Bhawna Wadhwani a student of B.Tech CSE has bagged the package of Rs. 88.21 Lakh by Bloomberg (UK Company). The salary is 90% higher than the highest package of last year.

CSE**CSE**

Total 31 students from the Computer Science and Engineering Department have received the summer internship 2022 in reputed industries such as Google, Goldman Sachs, Deutsche Bank, Amazon, Morgan Stanley, Samsung and Northern Trust.

Team Tensorfellow of CSE Department, Nirma University bagged the first grand prize (prize money USD 500) in MINeD 2022 hackathon organized by Centre of Excellence in Data Science, CSE Department at Nirma University during March 3-5, 2022. The team members include Manan Davawala, Harsh Bhatt, Aayush Gohil, Jaynil Vaidya and Harsh Mankodiya.

CSE**CSE**

Team BruteForceForGlory, CSE Dept, IT NU, Nirma University became the first runners up (prize money USD 200) in MINeD 2022 hackathon organized by Centre of Excellence in Data Science, CSE Department at Nirma University during March 3-5, 2022. The team members include Neel Shah, Param Shah, Smit Shah Jigneshkumar, Smit Shah Kiran, Harshwardhan Yadav.

Mr. Maharsh Shah, student of Department of Computer Science and Engineering got recognition and the second runner's up position, at the Global Student Entrepreneurship Awards 2022 organized by the Entrepreneurs' Organization, Gujarat, for his Start up - "NeoFanTasy" - a blockchain based fan engagement platform for sports clubs and franchises.

CSE

Mr. Satkirat Ahuja, 2020 batch passout from BTech Mechanical Engineering Department, IT, NU scored 99.36 percentile in Common Admission Test (CAT) 2021.

ME



Mechanical Engineering Students Association (MESA) has taken an initiative for the personality development of fellow mechanical students. As a part of it a series of free interactive events to prepare the students for placements and interviews by focusing on the personality development of each individual in terms of communication skills, critical thinking, problem-solving, collaboration, and team working, etc. are planned.

Following the same, a group discussion was arranged on 29th January, 2022 where the participants in a group of 9-12 were given a topic and all the participants shared their ideas and inputs regarding the same.

Mr. Vaghela Dipakkumar Dineshbhaimtech sem-IV was declared winner of second prize and got cash prize of Rs. 1500/- in E-Poster Competition 2021 arranged to tribute the great mathematician Mr. Srinivasa Ramanujan on his birth anniversary on 12th January 2022 organized by American Society of Heating Refrigeration and Airconditioning Engineers, Western India Chapter (ASHRAE-WIC). Many educational institutes from India and abroad participated in the event.

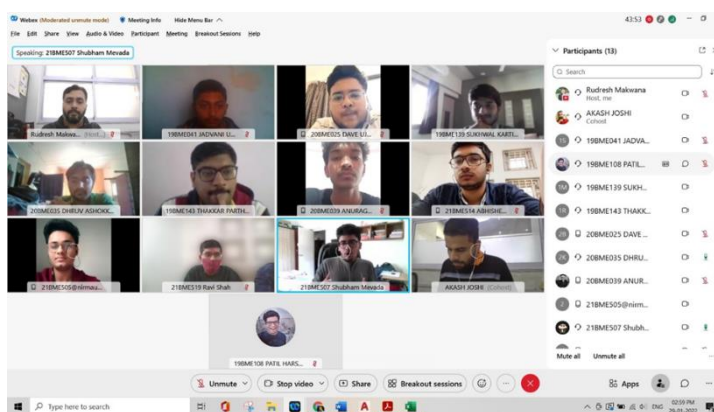
ME

ME

Mr. Aditya Kundal, student of BTech Mechanical Engineering, Semester-VI won 2nd prize along with cash prize of Rs. 3000/- in the national level MATLAB Hackathon hosted by the Electronics and Communication Department of Nirma University. He was team leader along with two more team members, Mr. Akshat Jain and Mr. Barun Debnath, students of B.Tech Electronics and Communication Engineering, Semester-VI. It was a 48 hours long live Hackathon from 1st January to 3rd January 2022.



A Group Discussion competition was organized by Mechanical Engineering Students Association (MESA) on 29th January 2022. The aim of the event was to motivate the students of Mechanical Engineering and prepare them for such activities which are helpful to them in their placements. Prof. Akash Joshi working as Assistant Professor in the Mathematics and Humanities Department at the Institute of Technology, Nirma University remained present throughout the event to judge the participants. A total of 35 students participated in the event. The group discussion was conducted in four sessions with four different topics. The top three performers were given ranks from first to third from each group. All the participants were provided with an e-certificate of participation, the winners were given e-certificates mentioning the rank. All participants participated actively in the event. MESA has received very good feedback about the event from the students.



Mechanical Engineering Students Association (MESA) organized “MESA Day”, the annual event wherein the Mechanical family comes together to celebrate the foundation of the club. MESA Day was organized on 11th of April, 2022. MESA day marks the end of an era for the students of 4th year and gives them a memorable farewell.

It is a day filled with fun, enjoyment and knowledge as students from final year share their experiences in the institute and faculties shed their role as teachers but rather become their friends and share their experiences with students.



The event was inaugurated by Puja Shri Aksharvatsal Swami, BAPS.

Swamiji has enlightened the students with his wise words and guided the young minds to how to be stress free even in the dark part of life through various real life stories. He also elaborated the power of prayer that enables mankind to perform various tasks at its best level and also with joy and happiness.

MESA general body meeting was also held after the inauguration where in Cadre captains and vice captains were declared and handed over the charge of respective cadres by baring the flags of their cadre. During the same meeting, the previous board members were awarded the certificates for their contribution to MESA.

Mr. Sanjay Raval, Motivational speaker, and author, Ahmedabad was invited to deliver the guest talk on stress management.

He delivered a very thought provoking address in his own unique style and taught important life lessons to the youth in a humorous approach. He suggested the youth to do the best in all their life and act with utmost faith in god.

Followed by the guest lecture, a talent show named “MESA’s Got Talent” was held where students of mechanical engineering showcase their talent and best two performers were awarded.

ME

Alumni talk by Mr. Dipen Patel, Technical Lead for Android CameraX team, was arranged for the students of the department on 5th January 2022. He graduated in Mechanical engineering in the year 1998 from the institute and also did graduation as well as master in computer science in 1999 - 2001 and 2001 - 2006 respectively from Florida Atlantic University florida, United States.

Reality?**EE**

The lines of life are fading
 Am I imagining? Is it real?
 What's going on? I don't know
 Everything around seems dark
 I see some people following me
 In the depths of darkness of the street
 Why am I being followed?
 Why are they spying on me?
 I think I have spilled secrets
 Secrets supposed to be confidential
 Might have been sent by someone
 Someone from a top-secret agency.
 I am sure they want to harm me
 Drops of sweat!? Fear is grasping me
 It's terrifying! Must run and hide
 In the horror I stood up...
 Stood up? Where am I?
 There was no one behind me
 I am standing beside the sofa
 What just happened? I sat down
 Damn! Those hallucinations again
 They call it Delusional disorder
 I hope the medicines work soon
 And I can live my life peacefully, again

-Bimal M Nair
 (B.Tech Electrical Engg.)

ALUMNIS' CORNER

ARTICLE FROM ALUMNI



Dr. Hardik Kothadia

**Assistant Professor,
Department of
Mechanical Engineering,
Indian Institute of
Technology Jodhpur.**

Future Technology Trends and Space for Mechanical Engineers

Everyone who is in the field of Engineering has to know the future trends in their fields so that they can shape their present and be market-ready in their own domain.

The Fourth Industrial Revolution was supposed to unfold gradually and slowly, yet the COVID-19 catalyzed it. Businesses who were merely exploring the potential of digitalization realised that it would be difficult to survey in the future by ignoring the advantages of ML, XR, IoT, and AI, among other technologies. While pandemic continues to wreak havoc to the global economy, it also forces extraordinary innovation across different sectors. Companies have discovered innovative ways to sell and service. However, innovation has always been a turbulent process of venturing into the unknown. The recent research can assist businesses to better understand what kind of changes made in the present can help them emerge stronger than before. Some trends that emerged during this pandemic will disappear, but I believe many of them will persist. So which tech trends will become our new reality?

The technologies that rise recently are AR/VR, 5G, IoT, Cloud, VUI, Blockchain. In the world of digitization, what about conventional engineering. Well, Mechanical engineers are at the forefront of developing new technologies for defence, healthcare, transportation, farming, security, safety, food production, housing, environmental remediation, water resources. With advances in technology, there is a requirement for a rapid cooling system. Advances rise the requirement of miniaturization, MEMS, and Microsystem technology. Additive Manufacturing, Bio-Medical Engineering, Nano-technology, Renewable Energy, Smart Materials, Robotics, Scramjet are some examples of future trends. However, interdisciplinary will be the key to future technology trends. Future technology will require Complex Products. Complexity is inherently unstable. That makes sense, as the more degrees of freedom in a system, the more likely something may go wrong. AI, IoT, and sensors will help to minimize the error and improve precision and accuracy. Engineers have traditionally been personally responsible for the projects they worked on. In the future, as products will be grown more complex, engineers must have to work on multidisciplinary teams. Mechanical engineers must collaborate with electronic and electrical engineers to add embedded capabilities, manufacturing engineers to optimize the design for production. Interdisciplinary engineering has already begun to increase

its footprint in conventional engineering. Interdisciplinary engineering has designed objects with 3D printing like artwork for the blind, prosthetic limbs, and edible objects that have made significant contributions to humanity. Mechanical engineering is the oldest branch of engineering but now, it has to accept new trends that align with our future world. Here's what aspiring engineers need to know. The world is facing an exciting new technological revolution, bringing with it a recent surge of new technology trends. Looking towards the new era of technology, engineers are discovering several new technologies, bringing advancements to the world like never before.

(Dr. Hardik Kothadia 2011 passout Mechanical Engineering –PG Thermal)

ALUMNIS' LECTURES

Mr. Karan Shah of 06 batch Chemical Engg. now working as Partner Krishna Enterprises conducted lecture on “Career counselling” on January 1, 2022.

Ms. Mudra Shah of 07 batch Chemical Engg. now working as Shift engineer , Reliance Industries Ltd. conducted lecture on “Bridging the Gap. ” on January 6, 2022.

Mr. Aakash Gandhi of 10 batch Chemical Engg. now working as Assistant Manager - Technical Cell, Rallis India Ltd. conducted lecture on “Managing Innovations ” on January 12, 2022.

Ms. Nishtha Pandey of 05 batch Chemical Engg. now working as Senior Technical Safety Engineer at Shell, conducted lecture on “Plant experience and application in the global team and about her experience in Shell ” on February 28, 2022.

Ms. Viraj Baxi of 08 batch Chemical Engg. now working as Strategy Manager- Reliance Retail, Bombay, conducted lecture on “Campus to Corporate: Navigating the Transition ” on March 7, 2022.

Ms. Mansi Chaubal of 09 batch Chemical Engg. now working as Senior Product Development Manager, CHASM Advanced Materials, Canton, MA conducted lecture on “CNT Hybrids for Printed Electronics Application ”on March11, 2022.

Ms. Vimmi Chokhawala, Field engineer at Arcelor Mittal Nippon Steel guided Major Projects of three students of B.Tech. Semester-VIII Electrical Engineering during January-May 2022.

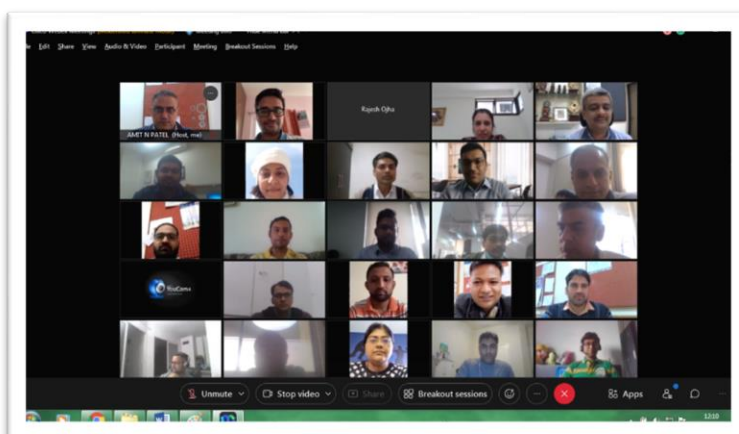
ACTIVITIES FOR ALUMNI

A virtual alumni interaction was organized on January 1, 2022 for alumni of the CSE department.

Department Alumni Meet was arranged by ACES and CSI student clubs of CSE Department on January 29, 2022.

The Department of Electronics & Communication Engineering organised Alumni Meet at eInfochips Ltd. on June 03, 2022, from 5:00 to 7:00 pm at eInfochips (RATNA office campus). In this get together, more than 62 alumni and 11 faculty/staff members have participated. The presence of the Honorable Director General, Nirma University Dr. Anup K Singh had made the whole event memorable.

As per the tradition of NITAA, an online get-together of the alumni of the Electrical Engineering Department was arranged at 11:00 am on January 01, 2022 Saturday. An online meet was organized via the Webex meet platform. The Electrical Engineering Department invited all the alumni and faculty members. Around 55 alumni and faculty members participated in the get-together. Alumni appreciated the role of institute and department towards growth of the students. Alumni appreciated the concept of online meet as they found it more convenient to attend from any place. They have also shown willingness to participate in expert talk, project placement, and etc.



Mr. Aalok Bhatt, Product Marketing Engineer at Little fuse in Semiconductor Business Unit, Germany interacted with B.Tech. Electrical Engg. Semester IV and VI students on the topic of “Q & A Session on Perspectives after B.Tech” on January 06, 2022.

Dr. Pranshu Upadhyay, Sr. Engineer eMachine – Electric Propulsion Systems, Germany had provided suggestions and feedback as a stakeholder on the syllabus of M.Tech. Electrical Vehicular Technology (EVT).

Mr. Lay Vakil, Junior Associate and Entertainment Brand Solutions at OML visited the department on March 23, 2022 and addressed the students of B.Tech. Electrical Engg. Semester IV and VI on the topic 'Navigating your career journey'.



An alumni interaction session with the NAAC peer team was arranged on March 30, 2022 at Nirma University.

