



## **DON BOSCO INSTITUTE OF TECHNOLOGY**

**Department:** Mechanical and EXTC Engineering

**Event:** e-INNOVEX 2020 Exhibition and Closing Ceremony Phase II

**Date of Event:** 22<sup>nd</sup> - 25<sup>th</sup> & 28<sup>th</sup> June 2020

**Section:** Co-curricular activities- Event - Technical- Innovex

### **e-INNOVEX 2020 Phase II Report**

The FOURTH edition of the Final year Project Exhibition '**Innovex 2020**' presented by the B.E. undergraduate students were conducted in lines of DBIT's vision of producing employable engineers who can ideate and design solutions for problems relevant to both the society and industry.

Innovex is a platform for the students to showcase their year long effort and help in encouraging open-ended discussions and deliberations for improving the scope of the project. It also encourages the students to pitch their ideas & solutions in front of the judges from the Industry, Academia and Alumni. Due to the COVID-19 Pandemic across the country, we were on the verge of losing this opportunity. However, our students and faculty figured out a way to use technology to give the BE students the experience of displaying their project to industry experts, faculty and peers, albeit in a virtual world. Instead of having Innovex in physical space this time it was hosted virtually on **Our Learning Management System - Moodle**. Innovex was conducted Phase wise, Phase I with software oriented projects by IT and Computer Engineering Department on 30<sup>th</sup> and 31<sup>st</sup> May followed by the closing ceremony on 7<sup>th</sup> June 2020 and followed by Phase II on hardware oriented projects of Mechanical and EXTC department on 22<sup>nd</sup> and 23<sup>rd</sup> June and was extended upto 25<sup>th</sup> June for the viewers with closing ceremony on 28<sup>th</sup> June, 2020.

A separate course was created per department on Moodle for this purpose. All the project demonstration videos along with the project posters were posted on the course which were viewed by judges and other visitors. It was followed by a live Q&A Session through video calling or exchange of emails between the judge and Students. For other visitors, Discussion forum on Moodle was used for Q&A.

Feedback form and viewer choice award questionnaire was available to the users to fill. A special Award was given for "Viewer's Choice Project" which was selected based on Feedback from all the Students.

19 projects were exhibited on the Moodle course of electronics and telecommunication engineering department named as, INNOVEX 2020-EXTC as separate groups with links for poster, video presentation and discussion forum. These projects were broadly categorised as

- i. Emerging Technologies
- ii. Sustainability
- iii. Research
- iv. Product Development

## **EXTC DEPARTMENT PROJECTS FOR ACADEMIC YEAR 2019-20.**

1. Development of real time solar spectrum measurement tool using opto-electronic sensors
2. Design and Development of Assistive Device for the Elderly
3. LoRaWAN based Geofencing tracker for Asset Management
4. Development of Water Quality Testing System
5. Development of LoRaWAN Gateway and Endnodes
6. Implementation and Evaluation of 6LOWPAN
7. Design of low power SAR-ADC using 180nm CMOS technology
8. Televoting for Rural development using VSAT
9. Person identification in low resolution CCTV footage
10. Person identification based on voice recognition
11. Autonomous pick and place robot with PID controlled line following algorithm and pneumatic subsystems
12. Low cost data-logger
13. DSP Laboratory Kit using ARM Cortex-M4
14. Design & Development of Rectenna for Wireless Energy Harvesting
15. Multicarrier Modulation for 5G Networks
16. Design & Development of Water Flowmeter-II
17. Real-time object tracking, Semi-Autonomous, pick and place robot and pneumatic subsystems
18. Audio Steganography
19. Qi Wireless Charger

In the EXTC department, the projects were evaluated by 3 judges,

Judge 1 : Dr. Nitin Kale , Chief Technology Officer NanoSniff Technologies Pvt. Ltd

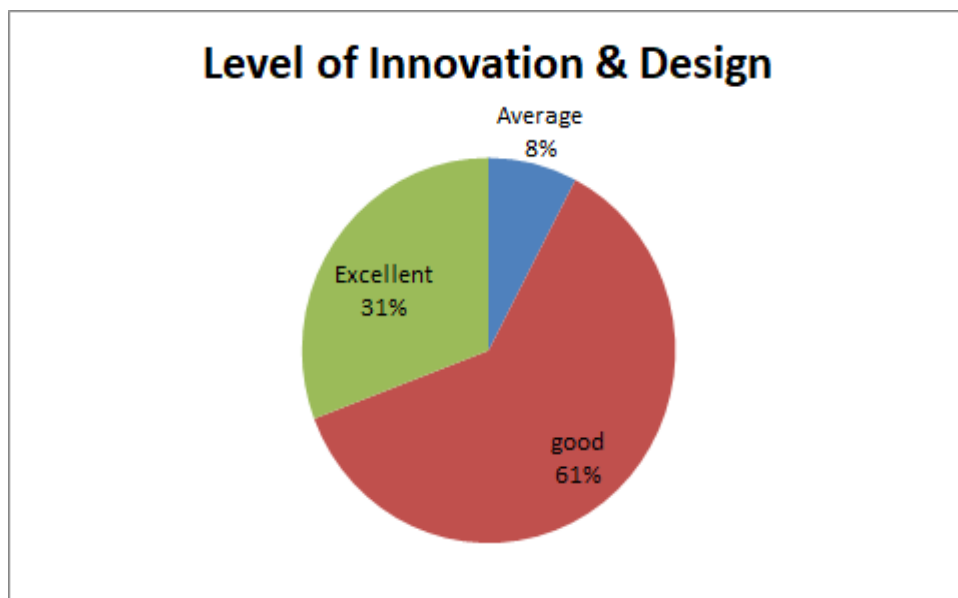
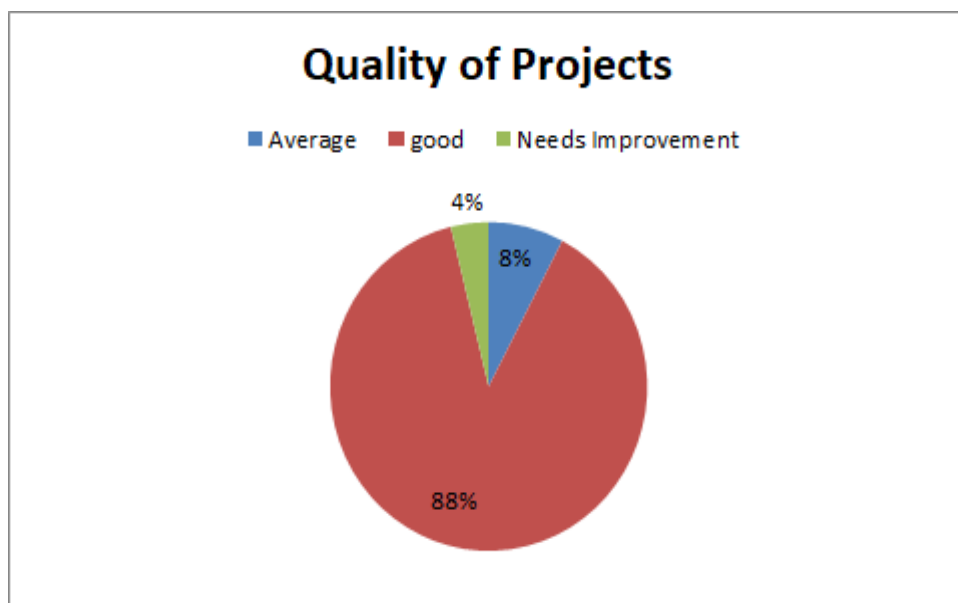
Judge 2 : Mr. Rajib Gupta, Technical Lead, IIoT Promethean Energy Pvt. Ltd

Judge 3 : Mr. Manjesh Salian, Senior Engineer, L & T Technology Services Ltd.

*Total Number of Visitors on the Moodle Course of Electronics & Telecommunication Engineering Department (Innovex 2020- EXTC ): 145*

**Feedback obtained from visitors in Moodle course, Innovex 2020-EXTC:**

**26 Responses**



36 Mechanical projects were displayed on Moodle in the form of a discussion forum with the poster and video presentation link of each group embedded in the discussion forum. Projects were categorised in 5 categories in the Mechanical Engineering department Moodle course INNOVEX 2020 as.

- i. Community Welfare
- ii. Sustainability
- iii. Product development
- iv. Research
- v. Laboratory Development

In the mechanical engineering department projects were evaluated by 6 judges, 3 panels were formed:

Panel 1 (12 Projects) : Mr. Ajay Pillai (Senior Vice President, Thyssenkrupp India Private Limited) & Mr. Iqbal Nasir (Director Technical, Technotalent Engineering India (P) Limited)

Panel 2 (11 Projects) : Mr. Narayan Kulkarni (Senior General Manager, Toyo Engineering India Ltd. Mumbai) and Mr R.N. Joshi (Founder, ARKK Consultancy)

Panel 3 (13 Projects) : Dr. B. Vaidhyanathan (Founder Director Interface Design Associates Pvt. Ltd.) and Mr. Srinivasan Iyer (Managing Director, Interface Design Association, Pvt. Ltd.)

Judges started the evaluation on 17<sup>th</sup> June, 2020, question and answer session was communicated with the student project group and project guide through exchange of emails. The evaluation was completed and received by on 27<sup>th</sup> June, 2020.

Details of Viewers participated in the exhibition from 22<sup>nd</sup> to 25<sup>th</sup> June 2020 in the mechanical engineering course INNOVEX Moodle platform is as below:

***On 22<sup>nd</sup> June the no. of users participated in the exhibition were 255***

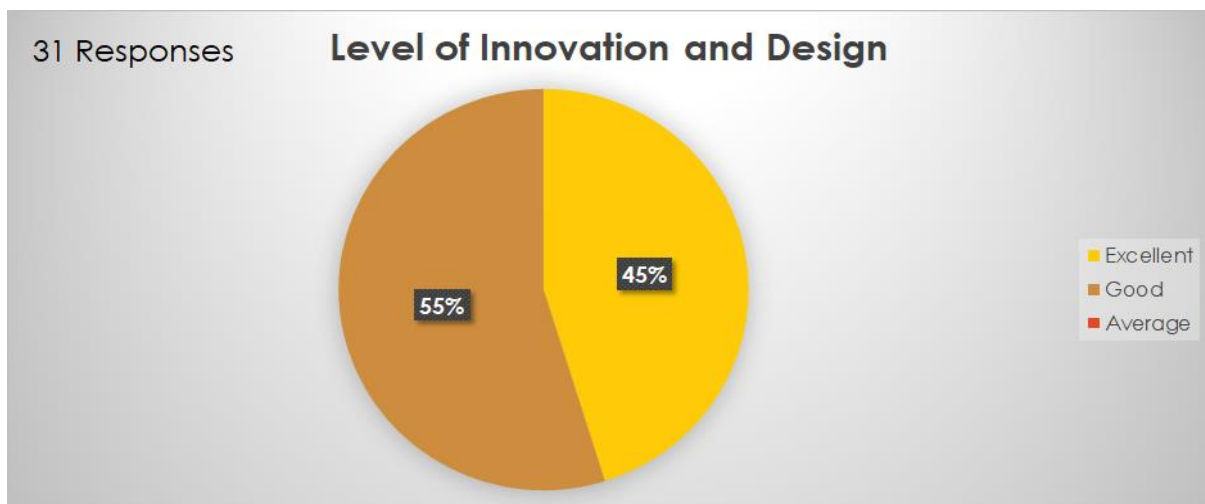
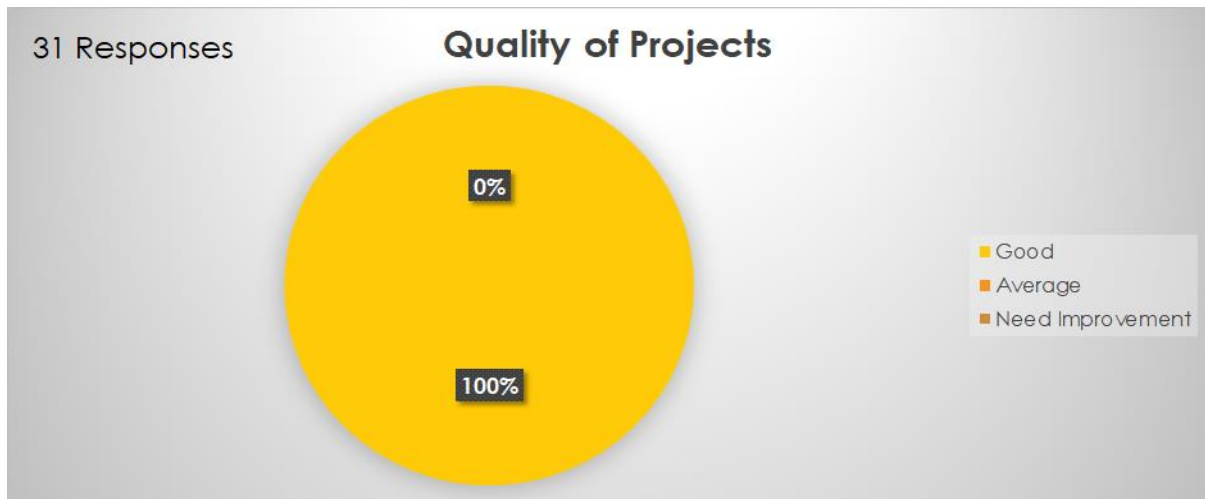
***On 23<sup>rd</sup> June the no. of users participated in the exhibition were 170***

***On 24<sup>th</sup> June the no. of users participated in the exhibition were 126***

***On 25<sup>th</sup> June the no. of users participated in the exhibition were 119***

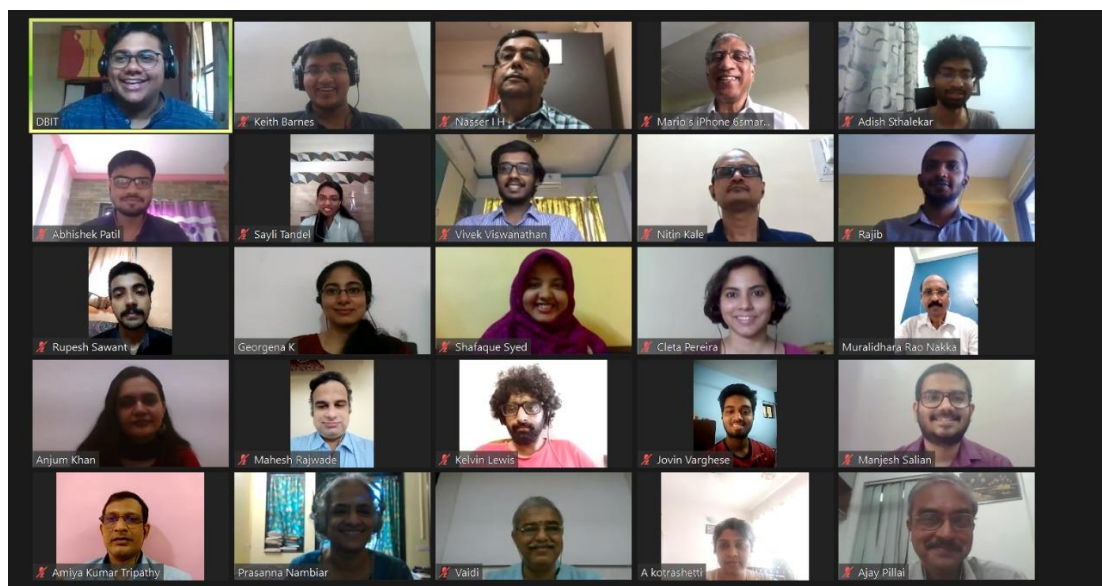
***The total number of users who have attended the exhibition is 344.***

Feedback obtained from visitors in Mech INNOVEX Moodle course:



The closing ceremony was organised on 28<sup>th</sup> June, 2020 on the zoom platform with live streaming on Youtube link - <https://youtu.be/fesj1-9KqAg>.

The participants on the zoom app for the closing ceremony Phase II.



The ceremony started with a welcome note by Ms. Anjum Khan, Project coordinator EXTC.

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**Ms. Anjum Khan**  
**(Project Coordinator - EXTC)**



Anjum Khan




zoom


Followed by a note by Principal, Dr. Prasanna Nambiar.

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**Dr. Prasanna Nambiar**  
**(Principal)**



Prasanna Nam...



zoom

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Next the judges from EXTC and the Mechanical Engineering Department shared their feedback and experience. First three judges of EXTC, Mr. Manjesh Salian, Dr. Nitin Kale, Mr. Rajib Gupta gave their feedback followed by three judges from the Mechanical dept, Mr. Iqbal Nasser, Mr. Ajai Pillai and Dr. B. Vaidhyathan gave their feedback on the projects evaluated and gave inputs on how the projects can be improved and what kind of projects are sought after in today's world.

## Judges of EXTC Engineering Department



**Dr. Nitin Kale**  
Chief Technology Officer  
Nanosniff Technologies Pvt.  
Ltd



**Mr. Rajib Gupta**  
Technical Lead, IIoT  
Promethean Energy Pvt. Ltd



**Mr. Manjesh Salian**  
Senior Engineer, L & T  
Technology Services Ltd

## Dr. Nitin Kale

Nitin Kale

Has worked as a Principal Engineer at TAIWAN Semiconductor Manufacturing Company, on the 32-nm High-K Metal Gate project from 2007-2009.

Joined IIT Bombay Nanomanufacturing Facility as Manager in the year 2009.

Since June 2011, working with **NanoSniff Technologies Pvt Ltd.**, a **technology start-up company incubated at IIT Bombay.**

Dr. Kale is responsible for the R&D in the area of fabricating microcantilever sensors, microheaters; and developing instruments for detecting explosives, proteins and antibodies, using microcantilever based measurements.

Dr. Kale has developed instruments such as Omnicant & Sensimer; has developed, fabricated, characterized NEMS devices such as Piezoresistive microcantilevers and Microheaters; and has also developed a 3- reactor Hotwire CVD Cluster tool for deposition of thin films.



nanosniff  
zoom

# Mr. Rajib Gupta



Working in **Promethean Energy Pvt Ltd.** since April 2017.

Responsible for end to end Industrial automation and IOT projects in various industries like automobile, Textile, Hospitality etc. Uses various industrial protocols, latest wireless technologies to achieve complicated data acquisition from various instruments and machines in an industrial process.

Has also worked as Product Development Engineer in Vulcantronics from June 2015- April 2017. (Product BARSYS.)

Has also worked as technical secretary in Technetronic for the duration April 2013- June 2015.



e-Innovex 2020: DBIT, BE Project Exhibition Closing Ceremony Phase II (EXTC & MECH) on 28 June, 2020



# Mr. Manjesh Salian



**Senior Engineer- L&T Technology Services Limited** since February 2020.

Hardware Design Engineer -Tata Power Company Ltd.  
Strategic Engineering Division (August 2016-January 2020)

Hardware Design Engineer - Acevin Solutions (July 2014-February 2016)



L&T Technology Services





## Judges of Mechanical Engineering Department



**Mr. Ajai Pillai**  
Senior Vice President  
Strategy Markets and  
Development  
Thyssenkrupp India  
Private Limited



**Mr. R. K. Joshi**  
Founder  
ARKK Consultancy



**Mr. Srinivasan  
Iyer**  
Managing Director  
Interface Design  
Association, Pvt. Ltd



**Mr. Iqbal H. Nasser**  
Director Technical  
Technotalent Engineering  
India (P) Limited



**Dr. B. Vaidyanathan**  
Founder Director  
Interface Design Associates Pvt.  
Ltd,



**Mr. Narayan  
Kulkarni**  
Senior General Manager,  
Toyo Engineering India  
Ltd. Mumbai

### Mr. Iqbal H. Nasser

Director Technical  
Technotalent Engineering India (P) Limited



- Mechanical Engineering - VJTI
- 5 yrs in Mafatlal group (plastics manufacturing) & Humphreys and Glasgow consultants - Design Engineer
- 5 yrs Integrated process Automation (IPA) (Indigenous force measurement and strain gauge based load cell technologies for Industrial applications) - Manager Mechanical Design
- Promoted Technotalent as a design and engineering company in 1992, added force transducers, vibration motors and similar products in the marketing range.
- Since 2008: Director Technical with Technotalent Engineering India Private Limited
- Committed to "REDUCE / REUSE / RECYCLE AND UPCYCLE"

## **Mr. AJAI PILLAI**

**Senior Vice President  
Strategy Markets and Development  
Thyssenkrupp India Private Limited**



- Mechanical Engineering - VJTI
- Post Graduate Management - Indian Institute of Calcutta
- 10 yrs in Larsen & Toubro (Chemical Projects & Industrial Valve)
- 5 yrs in Al Anwar Industrial and Trading Co SAOG (Green field Manufacturing business in industries such as glass bottles, ceramic tiles, investment castings, plastics, printing, etc.)
- Introducer of India's first one-hour service concept - Toyota Tsusho Corporation.
- 3 yrs in Batliboi Limited - Machine Tools Business Unit (Strategy Head, Business Head Air Conditioning and CEO)
- 6 yrs in Uni Deritend Ltd, as CEO (Investment castings company)

## **Dr. B. Vaidhyathan**

**Interface Design Associates Pvt. Ltd  
Founder Director**



- Ph.D IIT Bombay - Computer Vision, Computer Science
  - M.Tech - IIT, Mumbai 1st Ranker
  - BE - Anna University 2ns Ranker
  - Taught in Institutes like IIT Mumbai, IISE Mumbai, L&T Training Institute, etc
  - Some of the Development Initiatives :
    - Power drive for motors requiring triangular current waveforms
    - Developed CNC Lathe with image processing for part program generation
    - Developed a novel solar power optimization for agricultural pumps by directly relating available solar power and flow delivery.
    - Developed three axis translational parallel kinematic machine for investigating milling operations based such structures.
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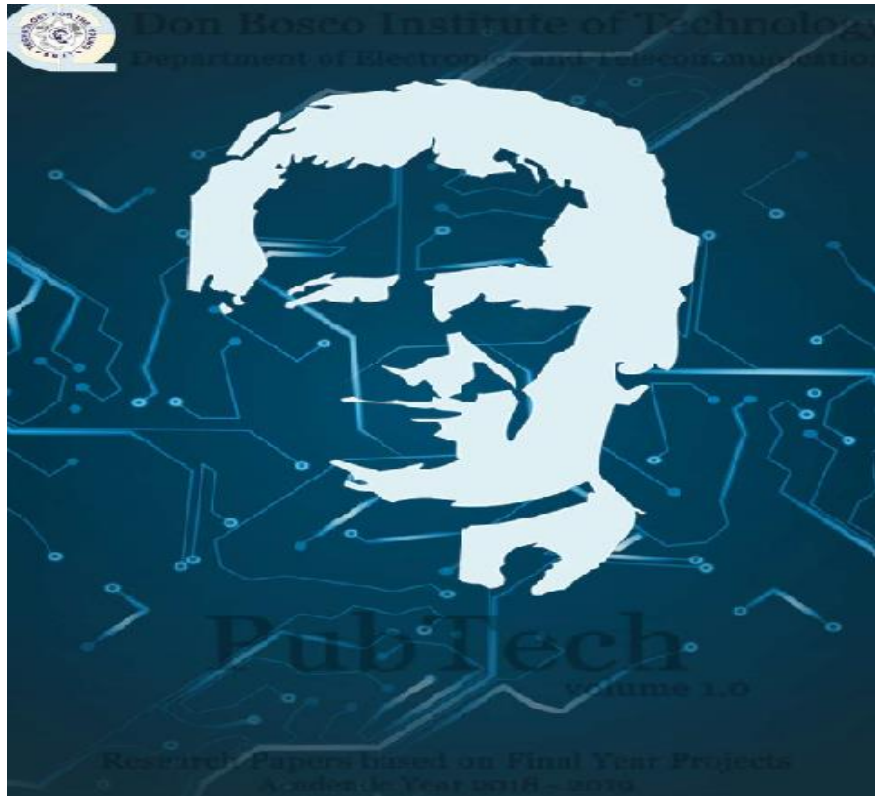
The Executive director DBIT Rev. Fr. Mario Vaz shared his views on INNOVEX 2020.



Final year students from each department also shared their experience during their journey to complete their respective projects. The three EXTC students who shared their experience Mr. Vivek Viswanathan, Mr. Brayon Diale, Ms. Sayli Tandel. Next three students namely Mr. Jovin Varghese, Mr. Abhishek Patil and Rupesh Sawant, from mechanical dept shared their journey on how they came up with the idea of the project, their journey with their team to complete the project.

Dr. Ashwini Kotrashetti, Head of the EXTC department spoke about the new initiative, namely PubTech, taken up by the department which was ideated by Principal, Dr. Prasanna Nambiar and persevered by Dr. Satishkumar Chavan. She introduced PubTech, (Publications in Technology). It is a compilation of research papers based on final year Student projects. This first issue of PubTech comprises technical papers based on the work of students of the academic year 2018-2019. This is an initiative to motivate our students and faculties to showcase their research.

Mr. Kelwin Lewis, Junior Embedded System Engineer, Qdnet Technologies, an alumni of EXTC department and 1st prize winner of Innovex 2019 was invited to release PubTech v1.0. He shared his thoughts and learnings, experience of Innovex and released the first issue of PubTech.



The winners were announced by the HOD's of the respective departments.

Dr. Ashwini Kotrashetti, HOD of Electronics & Telecommunication Engineering Department, announced the winners of the EXTC department:



Rank	Project Title	Project Guide	Student Team
1	Autonomous pick and place robot with PID controlled line following algorithm and pneumatic subsystems & Real-time object tracking, Semi-Autonomous, pick and place robot and pneumatic subsystems (ROBOCON Team Project)	Prof. Yogesh Gholap	Vivek Viswanathan Divyashree Rakchonda Arnold Sequeira Vedant Vyawahare Sayli Tandel Pransu Kushwaha Manisha Gupta Nilesh Sharma
2	Design & Development of Flowmeter - II	Prof. Freda Carvalho	Aditya Mukund Anushka Chatha Divya Dwivedi
3	Design & Development of an Assistive device for the Elderly	Prof. Gejo George	Sidharth Pagare Uttam Singh Vaishali Ingale
Viewer's choice award	Televoting System for Rural development using VSAT	Ms. Aparna Telgote	Brayan Dialle Kevin D'Souza Ryan Fernandes.

## e-Innovex 2020 EXTC Winners



**Project Title : Autonomous pick and place robot with PID controlled line following algorithm and pneumatic subsystems & Real-time object tracking, Semi-Autonomous, pick and place robot and pneumatic subsystems (ROBOCON PROJECT)**  
**Project Guide : Mr. Yogesh Gholap**



Divyashree  
Rakchonda



Arnold  
Sequeira



Vedant  
Vyawahare



Vivek  
Vishwanathan



Pransu  
Kushwaha



Sayli  
Tandel



Manisha  
Gupta



Nilesh  
Sharma

# e-Innovex 2020 EXTC Winners



**Project Title :** *Design & Development of Water Flowmeter - II (in collaboration with Qdnet Technologies)*  
**Project Guide :** *Ms. Freda Carvalho*  
**Project Members :** *Anushka Chatha, Aditya Mukund , Divya Dwivedi*



Aditya



Divya



Anushka

# e-Innovex 2020 EXTC Winners



**Project Title :** *Design & Development of Assistive Device for the Elderly*  
**Project Guide :** *Ms. Gejo George*  
**Project Members :** *Siddharth Pagare, Uttam Singh , Vaishali Ingale*



Siddharth



Uttam



Vaishali

# **e-Innovex 2020 - ETXC Winners Viewer's Choice Favourite Project"**

*Project Title : Televoting system for Rural development using VSAT (in  
Collaboration with BSNL, Yeur )  
Project Guide : Ms. Aparna Telgote  
Project Members : Brayan Dialle, Kevin D'Souza, Ryan Fernandes*



**Brayan**



**Kevin**



**Ryan**

Dr. Nakka Muralidhara Rao, HOD of Mechanical Engineering Department, announced the winners of the mechanical engineering department.

**Dr. Nakka Muralidhara Rao  
Head of Mechanical Engineering Department**



The winners for INNOVEX 2020 from mechanical Engineering Department are:

<b>Rank</b>	<b>Project Title</b>	<b>Project Guide</b>	<b>Student Team</b>
1	Honking Adaptive System	Prof. Buddhipriy. S. Chavan	Mr. Rupesh Sawant, Mr. Chetan Mahajan, Mr. Prajyot Baitand Mr. Shubham Gadage
2	Prosthetic Arm with 3-D Printing Technology	Prof. Hemant Hogade	Mr. Preet Kutaphale, Mr. Ashutosh Mendes, Mr. Justin Varghese and Mr. Randell Pinto
2	Mechanising RASA KALPA Process	Prof. Shreeprasad Manohar	Mr. Abhishek Rao, Ms. Priyanka Ladole, Ms. Bhagyashree Ingle, Mr. Nevron Albuquerque
3	Floral Waste Management	Dr. Prasanna Nambiar	Mr. Aakash Mishra, Mr. Om Patil, Mr. Shyam Patil and Mr. Abhishek Patil
3	Sustainable Passive Evaporative Cooling System for Tropical Climatic Conditions	Prof. Cleta Pereira	Mr. Rahul Kowshik, Mr. Anirudh Bhat, Mr. Alfred Chettiar and Mr. Rohit Beniwal
Viewer choice award	Effective Management of Plastic Waste	Dr. Prasanna Nambiar	Mr. Nigel Fernandes, Mr. Mohammed Ayaz, Mr. Sannan Dabir and Mr. Smriti Gondane.



## e-Innovex 2020 - MECH Dept.

### “Honking Adaptive System”

Project Guide : Prof. B. S. Chavan



Mr. Rupesh Sawant



Mr. Chetan Mahajan



Mr. Prajyot Bait



Mr. Shubham

## e-Innovex 2020 - MECH Dept.

### “Prosthetic Arm with 3-D Printing Technology”

Project Guide : Prof. Hemant Hogade



Mr. Ashutosh Mendes  
into



Mr. Justin Varghese



Mr. Preet Kutaphale



Mr. Randell

## e-Innovex 2020 - MECH Dept.

### “Mechanising RASA KALPA Process”

Project Guide : Prof. Shreeprasad



Mr. Abhishek Rao



Ms. Priyanka Ladole



Ms. Bhagyashree Ingle



Mr. Nevron Albuquerque

## e-Innovex 2020 - MECH Dept.

### “Floral Waste Management”

Project Guide : Dr. Prasanna Nambiar



Mr. Aakash Mishra



Mr. Om Patil



Mr. Shyam Patil



Mr. Abhishek Patil

## e-Innovex 2020 - MECH Dept.

### “Sustainable Passive Evaporative Cooling System for Tropical Climatic Conditions”

Project Guide : Prof. Cleto Pereira



Mr. Rahul Kowshik



Mr. Anirudh Bhat



Mr. Alfred Chettiar



Mr. Rohit Beniwal

## e-Innovex 2020 - MECH Dept.

### “Effective Management of Plastic Waste”

Project Guide : Dr. Prasanna Nambiar



Mr. Nigel Fernandes



Mr. Mohammed Ayaz



Mr. Sannan Dabir



Mr. Smriti Gondane

The closing Ceremony Phase II ended with a vote of thanks by Prof. Clea Pereira, Project Coordinator, Mechanical Engineering Department.

**Ms. Clea Pereira  
(Project Coordinator - Mech)**



**Prepared by:**

Prof. Georgena Kannukkadan and Prof. Clea Pereira - Project Coordinators,  
Mechanical Engineering Department

Prof. Anjum Khan - Project Coordinator, EXTC Department

**Enclosed:**

1. [Innovex Booklet](#)
2. [Activity Log Report from Moodle from 22nd to 25th June 2020 and the list of Users Mech Department](#)
3. [List of Projects Discussion Forum Activity Report from Moodle Innovex Course - e Innovex 2020 - Mechanical Engineering Department](#)
4. [Feedback Recieved by visitors e Innovex 2020 Mechanical Engineering Department](#)
5. [Activity Log Report from Moodle from 22nd to 25th June 2020 of EXTC Department.](#)
6. [List of Projects Discussion Forum Activity Report from Moodle Course - e-Innovex 2020 - EXTC Engineering Department](#)
7. [Feedback Recieved by visitors e-Innovex 2020 EXTC Engineering Department](#)
8. [PubTech v1.0](#)
9. Youtube Link of Closing ceremony : <https://youtu.be/fesj1-9KqAg>.