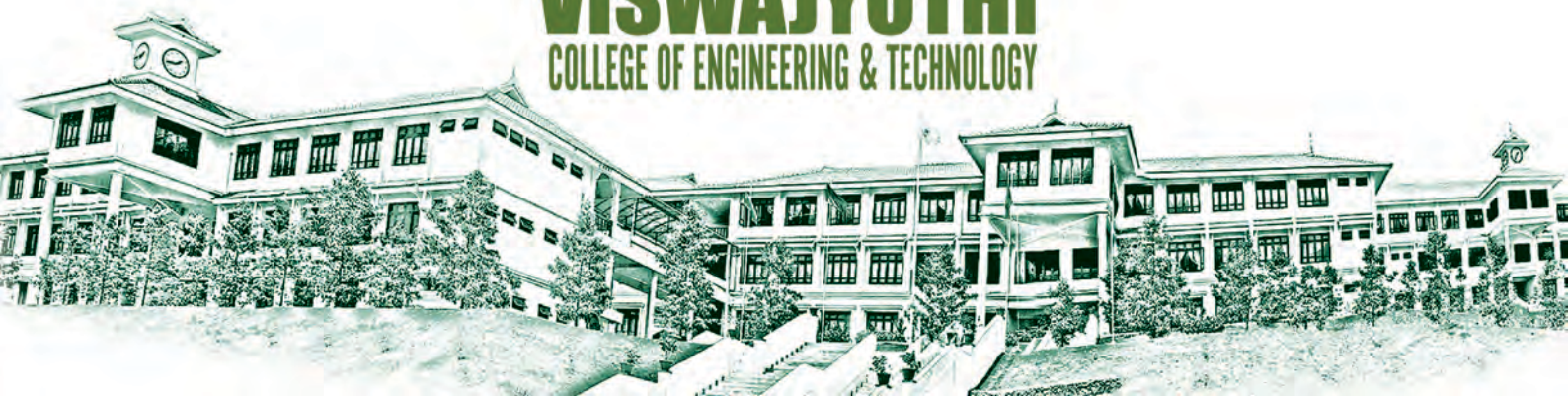




VISWAJYOTHI
COLLEGE OF ENGINEERING & TECHNOLOGY





The Stockholm City Hall in the City of Stockholm in Sweden where the Nobel Prize Award ceremony takes place

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A LINEAGE TO ADD TO OUR STRENGTH



Patron
Mar George Madathikandathil
Bishop of Kothamangalam Diocese



Manager
Msgr. Dr. Cherian Kanjirakombil



Director
Rev. Dr. George Thanathuparambil



Principal
Dr. Josephkunju Paul C



Patron's Message

I am extremely happy to learn that Viswajyothi College of Engineering and Technology is releasing an Annual Report for Industrial Institute Interaction Cell (IIIC). It is the challenging mission of all centres of learning to be more socially committed into the formation of the young, strengthening human relationship in the process. An effective execution of this divine mission is not an easy task. This report shall mark the bold measures taken by Viswajyothi fraternity bringing in desirable changes not mere washing coal to remove its blackness but by burning it into white ashes pure! Imparting value-based holistic training and education we shall sow the seeds of purity of learning and reap wisdom bright. I wish His choicest blessings upon you all.

Mar George Madathikandathil
Bishop, Kothamangalam Diocese
Patron of the College



Manager's Message

The college was started with a dream of providing professional education. Viswajyothi College of Engineering and Technology possesses a state-of-the-art infrastructure with equipped laboratories, well-stocked library and highly dedicated faculty. As the saying goes, "Team work makes the dream work," we at Viswajyothi have a committed team and the team is continuously responsible in achieving the vision and mission of the Institution. The NBA accreditation for the four programmes is the proof of the team work we share. I take this opportunity to express that every effort is made to improve the existing best services to bring out the best to the Institution and for the growth of our students.

Always do your best! What you plant now, you will harvest! The merits of Viswajyothi are laudable to the students' community when they realise their making and preparing for life skills and educational advent was through this prestigious institution.

Msgr. Dr. Cherian Kanjirakompil
Manager



Director's Message

I am happy to share with you the annual report of Industry Institute Interaction cell of VJCET for the academic year 2017-2018. VJCET from its inception was interacting with Industries. Realizing the relevance and importance of Industry Institute Interaction a Cell has been formed in VJCET in the year 2016 and intensified the activities. All interaction activities of the college with Industry and research institutes were brought under its coordination and a Dean was appointed for the Cell. It is indeed happy to note that the cell has performed very well especially in the last academic year 2017-2018. I would like to compliment IIRC coordination committee for bringing the annual report comprehensively and of enhance quality. We appreciate comments and responses from you.

Rev. Dr. George Thanathuparambil
Director, VJCET



Principal's Message

I am happy to note that Industry Institute Interaction cell of Viswajyothi College of Engineering and Technology releasing its Annual report for the academic year 2017-2018. Employability of Engineering graduates coming out of engineering colleges in the country is appears to be on lower side as per the statics. This can be improved only by a strong Industry interaction during course of Engineering education. VJCET has formed and exclusive cell for Industry Institute Interaction and they are effectively functioning since 2016. VJCET has signed MOUs with as many as 23 industries as on Toady. In addition IIC cell of VJCET has successfully organised many activities such seminars, workshops, industrial visits, technical talks etc in the academic year 2017-18. These programmes were very useful to the student community. This effort should continue in the coming years. I would like to congratulate IICC coordination committee for bringing out a comprehensive annual report covering all their activities .

Dr Josephkunju Paul C

Principal VJCET

VISION

**“Moulding Engineers par Excellence with
Integrity, Fairness and Human Values”**

MISSION

- **We commit to develop the institution into a Centre of Excellence of International Standards.**
- **We guide and mould our students in the attainment of intellectual and professional competence for successfully coping with the rapid and challenging advancements in technology and the ever changing world of business, industry and services.**
- **We help and support our students in their personal growth shaping them into mature and responsible individuals.**
- **We strive to cultivate a sense of social and civic responsibility in our students, empowering them to serve humanity.**
- **We promise to ensure a free environment where quest for the truth is encouraged.**

INDUSTRY INSTITUTE INTERACTION CELL



Better interaction between Technical Institutions and Industry is the need of the hour. Realizing the relevance and importance of Industry Institute Interaction (IIIC) a Cell has been formed in 2016 in VJCET and intensified the activities. IIIC was looking for interaction between industry, research organizations and institute so as to improve the quality of technical education to meet the needs of the industry and enhance the

employability of engineering graduates. Industry Institute Interaction would provide input to better teaching-learning processes, create awareness among the students about the environment of industry, provide real practical knowledge and self confidence to students. IIIC of VJCET has organized many activities in VJCET from its inception and this report summarizes the activities carried out in the academic year 2017-2018.



OBJECTIVES



- To evolve educational programmes which are consistent with the broad requirements of the industry and which can give rise to engineering personnel capable of coping-up with the accelerating pace of the technological development
- To learn the industry practices and to create innovations and experiential learning environment for students
- To strengthen Industry partnership for the students so as to expedite the process of beginning technology business Incubator for start ups
- Establish contacts with international agencies, industries and research organizations and follow up for arranging joint interaction programmes
- Identify industries for internship, training and placement for students in the emerging areas of energy, Industrial automation and recycling.
- To identify and facilitate Guest Lectures, Interactive Workshops, Conferences, Seminars, Brain Storming Sessions, Technical Discussions, Industrial Training, Orientation Courses, Industrial Visits with members of the Industry, outside experts and eminent personalities at regular interval.
- To facilitate joint research work and consultancy involving faculty and students.
- To identify continuing education opportunities, short term programmes and training needs of the industry, which the institution can provide.

COORDINATION COMMITTEE of IIIC

Following coordinating committee was responsible of IIIC activities in Viswajyothi College of Engineering and Technology in the academic year 2017-2018

Mr Jacob Mathai	Assistant Professor, IT
Mr Jiby Peter D'Cruz	Assistant Professor, ECE
Ms Nimmy George	Assistant Professor, CSE
Mr Rakesh Jose	Assistant Professor, ME
Mr Daniel A V	Assistant Professor, CE
Shri Jibil Joseph	Assistant Professor, EEE
Mr C Mavin ,	Placement officer, VJCET
Mr Jinit James	School of Management

MEMORANDUM OF UNDERSTANDING WITH INDUSTRIES

VJCET was interacting with many industries in Kerala and southern part of India in the last one decade. Realizing the need for formalizing the interaction and continue in a systematic manner memorandums of understanding (MOUs) were

signed with industries. MOU's are for a period 5 years and it clearly mentions the areas of mutual exchange and responsibilities. In the current academic year MOUs were signed with 9 more industries and the total number of MOUs industries increased to 22 and the list is given below. .

18.08.2016

M/s Progressive Cybernetics Pvt.Ltd,
41672/A1, II nd Floor, Lovely Avenue, Puthiya road,
Kaloar, Cochin – 682017,Kerala, India

18.08.2016

M/s Jocyf Aerospace, Olamattom, Thodupuzha,
Idukki Dist, Kerala, India, PIN-685584

20.08.2016

M/s Pepperpot Systems and Solutions Pvt. Ltd,
Devadaram, Infopark Thrissur, Nalukettu Road,
Koratty, PIN – 680 308

03.09.2016

M/s C T Control Technology (India) Private Ltd.
Srishti, #7, Sharada Colony, 8th Main Road,
Basaveshwara Nagar, Bengaluru, Karnataka

08.09.2016

M/s Infra Housing Pvt. Ltd, CLS Building, M G
Road,Cochin, Kerala,PIN- 6820 11

04.10.2016

M/s Renaisoft Solutions Pvt. Ltd, 1st Floor,
Puzhakkarayil Building, SH15, Thalayolaparambu,
Kerala, PIN- 686605

07.10.2016

M/s G & G Constructions, Georgetown, Adam Star
Complex, Thodupuzha, Kerala ,PIN-685584

11.11.2016

M/s Lunars Rubbers Pvt. Ltd., Post Box No: 34,
Matha Shopping Arcade, Thodupuzha,Kerala ,
India,PIN : 685584

23.11.2016

M/s Bitsforge Technologies (P) Ltd.7/570k,
Chithranjali Studio Building, NGO Quarters,
Kakkanad, Thrikkakara P.O. PIN-682021

08.12.2016

M/s Antonal Group of Companies ,Pulinattu
Properties, Muvattupuzha, Cochin, Kerala, India,

10.01.2017

M/s Suvire Electric P ltd, G-12, SIPCOT, Industrial
park, Sriperumbadur, Kancheepuram, Tamil nadu

01.07.2017

M/s Metrolla Steels mltd, Pezhakkapilly P O,
Paipra, Muvattupuzha- PIN 686674

10.07.2017

M/s Zixent Technologies, Plathinkl building, EEC
market Road, Muvattupuzha, Cochin, Kerala

09.8.2017

M/s Intercad system Pvt Ltd , 2 nd floor,
Balakrishna Pillai Building, Opp st. Ignatius
Knanaya Church, Trivandrum Kerala

13.10.2017

M/s Amaze logistic Pvt ltd , Third floor, Sreevalsam
Complex, Thodupuzha, Idukki, Kerla, India

20.10.2017

M/s Supertech Tools & Components Pvt Ltd.
Aiswarya Colony, Madakkathanam,
Muvattupuzha, Kerala

22.12.2017

M/s BIMIT CAD and BIM Training services
Ernakulam

09.02.2018

M/s Reecco Energy India Pvt. Ltd
Bldng. No. IV/219, Pala Road, Chunkam,
Thodupuzha

20.06.2018

M/s Technopower Engineering Company
First Floor, Trangent Torker
Seaport Airport Road, Kakkanadu, Ernakulam

MOU by Department of Management Studies

2/03/2018

Adlink India (P) Ltd 91C, Thekkanatu Arcade,
MC Road, Kottayam Kerala

31/1/2018

Celebrus Commodities Ltd 27/540, 3rd Floor
EAK Towers, Main Avenue, Panampilly
Nagar, Kochi, Kerala, India-682036

27/04/2018

Grandmas Food Products Peringuzha,
Perumpalloor P.O., Ernakulam, Kerala 686673

30/5/2018

Kannikkattu Technocraft, Muvattupuzha
Ernakulam (Dist), South India Kerala, India -
PIN 686661

05/1/2018

Lunars Rubbers Pvt. Ltd. Post Box No: 34,
Matha Shopping Arcade, Thodupuzha, Kerala,
India. Pin : 685 584

02/02/2018

Manco Foods (Fresio), Vazhakulam P.O,
Muvattupuzha, Kerala, India, 686670. Phone :
+91 485 645 0111 E-Mail : Info@Fresio.In

25/09/2018

Madukkakuzhy Ayurveda, Madukkakuzhy
Ayurveda Parathodu, Kanjirappally Kottayam,
Kerala – 686 51

31/1/2018

Metrolia Steels Ltd Payipra Cheruvattoor Road,
Pezhakkappilly, Kerala 686673

11/06/2018

Progressive Cybernetics Pvt. Ltd. Tech Floor,
Koyas Tower P O Junction, Muvattupuzha,
Ernakulam Dist, Kerala Pin: 686 661

5/09/2018

White Mart 31/1036 B, Above M/s White Mart
Showroom, Subash Chandra Bose Road,
Chettichira, Vyttila, Kochi - 682019.
Kerala, India.

29/08-2018

International Pilgrimage Revolution Pvt. Ltd.,
Pushpavihar, Saket, New Delhi - 110007

INTERNATIONAL COLLABORATIONS

11/6/18

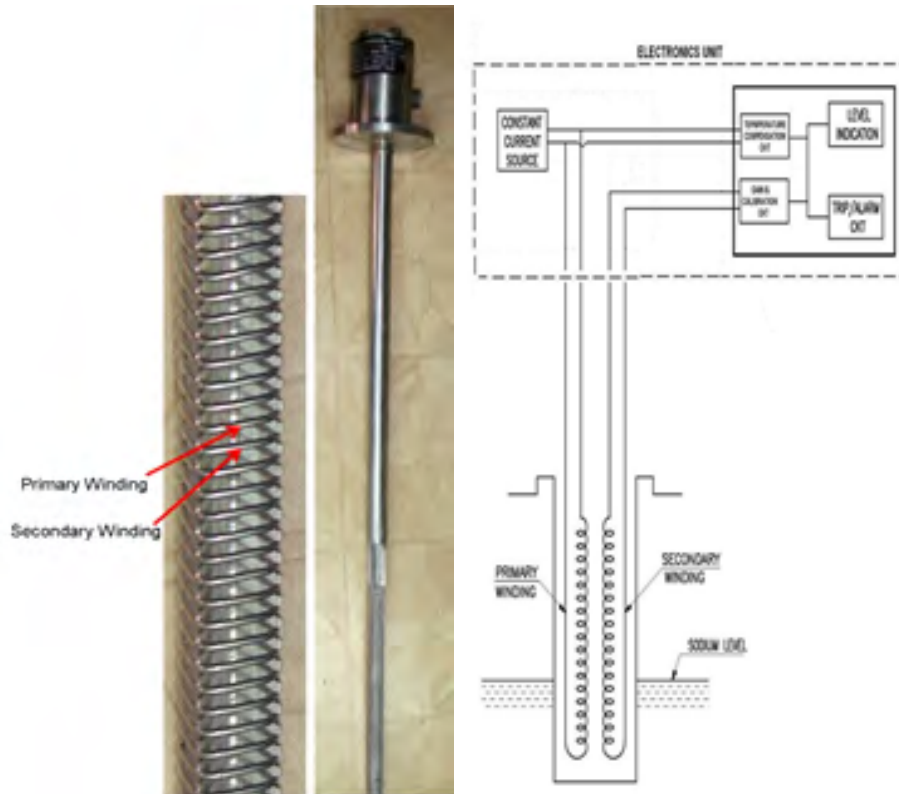
HKT-Haus Konzept Thadathil
Hauptstr.1, 58332 Schwelm Germany

12/6/2018

Inxpire Gmbh Inxpire Gmbh Erkrather
Strape.401 40321 Dusseldorf, Germany



RESEARCH AND COLLABORATIONS



Mutual Inductance type level sensor for lead Lithium alloy being developed as part of Retch Project awarded by BRNS

Research Projects

Development of Level sensor for Lead-Lithium Loop system

Board of Research in Nuclear Sciences (BRNS), Department of Atomic Energy, Govt. of India has awarded the research project (No. 39/14|0312017-BRNS/3430) entitled "Development of Level Sensor for Lead-Lithium Loop System" to Electrical and electronics department of Viswajyothi College of Engineering and Technology, Vazhakulam. This project will be carried out in collaboration with institute for Plasma Research (IPR), Gandhinagar. The project involves design, modeling, development and testing of mutual inductance type continuous type level sensor for Lead- Lithium system. The project has to be completed in two years and a JRF is appointed for the project. The cost of the project is Rs 34 lakhs. Project activities are in progress and the design

modeling and analysis of the level sensor is completed and the manufacturing is under process. High end digital multi-meter and oscillator has already procured for the testing level sensor.

Project on Heat exchanger and heater development

Proposal for a new R&D project titled Development of Heat Exchanger and Heater Development is formulated in consultation with Institute for Plasma Research, Gandhinagar, Ahmedabad. IPR has cleared the project for submission to Board of Research in Nuclear Sciences (BRNS). The Principal Investigator for the project is **Dr. B Aruna**, HOD, EEE Department. This is a multidisciplinary project and hence the co-investigators are Dr. K K Rajan from EEE Dept, and Dr. Vinoj K, HoD, Mechanical Dept.



Consultancy Works

M/s CT Control Technology Bangalore has requested for technical support to design and manufacture of permanent magnet type sodium flow meter required in nuclear industry. They were asking for the guidance and technical support for design manufacturing, testing calibration of permanent magnet sodium flow meters required for nuclear industry. VJCET has accepted the request and Dr K K Rajan Prof. EEE department is involved in the job. He had visited M/s CT Control Technology Bangalore few times and participated in technical discussions. Preliminary design of permanent magnet circuit is carried out and vendors are being identified for manufacturing the magnet blocks as per our design.

Membership in Board Of Directors

Dr K K Rajan, Prof EEE and Dean industry institute interaction was appointed as Independent director and member board of directors of Nuclear power corporation of India Ltd (NPCIL) from January 2017 for 3 years. Cabinet committee for appointments has selected him for this post. He is also appointed as Chairman of the board subcommittee for monitoring ongoing projects of NPCIL and as member of different sub committees. He is regularly attending board meeting and sub committee meetings.



INDUSTRY INTERACTIONS AT COLLEGE LEVEL

Discussion Meet With Farmers and BARC Scientists

A two day discussion meet was held on Tuesday 27.06.2017 and 28.06.2017 Wednesday with BARC scientists, VJCET team, pineapple and rubber farmers and merchant representatives at VJCET conference room to discuss the Application of Nuclear Energy in the area of Pineapple and Rubber cultivation and other related issues.

Increasing shelf life of fresh pineapple whole fruit is the requirement of pineapple farmers and merchants. This will help in exporting pineapple to European countries. BARC has carried out some studies on minimally processed pineapple. However BARC has not done any studies on the whole pineapple fruit so far. The farmers and merchants requirement is extension of shelf life of 25 % ripe whole pineapple fruit to a minimum of 4 weeks without affecting the quality or any of the other the fruit attributes. BARC scientists informed that they will take up this study and try to establish a technology to meet this requirement. VJCET has agreed to arrange Vazhakulam variety of pineapple samples

through their Bombay traders for experimental studies to be carried out at Food Technology Division (FTD) BARC.

BARC Outreach Programme

Bhabha Atomic Research Centre, Trombay has organized an outreach Programme at Viswajyothi College of Engineering & Technology (VJCET), Vazhakulam, in association with Industry Institute Interaction Cell (IIIC) of VJCET. The Outreach Programme was organized on February 1st, 2018 at VJCET Campus on the theme "Atomic Energy for Brighter Future". The programme consisted of Inaugural Session, Keynote Address, Technical Talks, and Exhibition on various BARC technologies. A team of scientists and officials from BARC had arrived on VJCET as a part of the programme. Students and faculty were encouraged to interact with them. This outreach programme was unique in a way that it was the first of its kind in this part of Kerala. The students, faculty, and staff of the institution fully utilized this opportunity.



VJCET management team along with BARC scientists



Pineapple farmers and merchants along with VJCET and BARC team



Presentation by Dr. Sunil K Ghosh Head, Food Technology Division Bhabha Atomic Research Centre, Mumbai On Application of Nuclear Sciences in Food Security and Safety in the discussion meet

Shri K A David, Technical Advisor Chairman Atomic Energy commission Inaugurating the BARC outreach programme



Shri R K Singh Explains the Nuclear Reactor Model in the exhibition as part of BARC outreach programme



Students watching the model of actinide separation facility in BARC in the exhibition as part of the outreach programme

Dr Sexena Food Technologist BARC
Delivering a talk in the BARC
Outreach Programme



Dr B Babu, Senior Scientist IGCAR
addressing final year students on
Career Opportunities in Atomic Energy

INDUSTRY INTERACTIONS AT DEPARTMENTAL LEVEL





IIIC Activities of Department of CIVIL ENGINEERING

The major activities of IIIC in Civil Engineering Department in the academic year 2017-2018 include Industrial Visits, Rural Housing Project, Expert Talks with Industry experts and Workshops.

Industrial Visits

The 8th semester students and 4th semester students has undergone one day industrial visit and the 6th semester students has undergone a four day industrial visit in the academic year 2017-2018. The industrial visits helped in exposing students to the latest construction practices prevailing in the different domains of civil engineering like irrigation, hydraulics, transportation, construction management and even retrofitting of existing civil engineering structures.

Rural Housing project

An industry institute interaction initiative was taken by the civil engineering department in association with "Avoly Grama Panchayath" for "Pradhan Mantri Awas Yojana - Gramin". A group of final year students making use of their technical expertise got involved by preparing detailed estimates for Low Income Group Housing project.

Expert Talks

Following Expert Talks and discussions with Industry experts were organized in this academic year



Ms. Sandra Anna Baby delivering the talk

Talk on "Building a greener home" on 28/02/2018 by Ms. Sandra Anna Baby is an alumni of Viswajyothi College of Engineering and Technology. The talk briefed the necessity of incorporating the concept of green architecture and sustainability in the construction industry which can make our buildings truly sustainable and green.

Talk on "Quality Assurance, Quality Control and NDT methods in concrete" by Mr. Sajan Varghese, TISAT, Technician Inspection Service, Ernakulam. The talk enabled the students to acquire the basic knowledge about Quality Control and Quality Assurance for various Civil Engineering constructions. The uses of modern tools such as NDT and Total station that can aid the structural engineers in the industry were also discussed.



Mr. Sajan Varghese Delivering the talk

- ➡ An expert talk on "Construction Engineering & Management" on 16/02/2018 By Ms. Smitha Mariam (M.Tech Structures) is a trainer in Institutes of Construction Management in Ernakulam. The session introduced the students to basic understanding in the principles of functional planning of buildings and exposed them to the various mechanization possibilities in construction industry.
- ➡ Talk on "Interior Design and new software-Lumion" on 09/02/2018 by Mr. Joseph Denny Pindis is the co coordinator of Pindis learning centre. The talk enabled the students to acquire basic knowledge to plan healthier and aesthetic space and will be able to have basic idea of new 3D software like LUMION.
- ➡ Talk on "Employability skill development and scholarships provided by Kerala State Rutronix" on 25/01/2018 By Mr. Amal Ashokan is currently working as Technical coordinators in CADD Centre. The talk enabled the students to face an interview of an industry with their developed skills. The talk also highlighted various scholarships and courses at Kerala State Rutronix.
- ➡ Talk on "Quantity surveying and Estimation" on 25/01/2018 By Mr. Sandeep the Branch in-charge of Matrix, IES, Muvattupuzha. He is an expert in Quantity surveying and Estimation. Through the talk the students were introduced to the rate analysis, valuation of properties and preparation of reports for estimation of various items. The talk enabled the beneficiaries to estimate the material quantities, prepare a bill of quantities, make specifications and prepare tender documents.



Mr. Sandeep the Branch in-charge
M/s Matrix delivering the talk



Ms. Theres Charly delivering the talk

- Technical Talk on "Geospatial Technology and its Applications" on 18/08/2017 by Mr. Bony Raju is the Chief Executive Officer of Tresreis Technologies Pvt Ltd, Ernakulam, Kerala. The talk was intended to make the students aware of Geographic information system to learn about the interpretation of satellite images and understanding of the applications of remote sensing.
- Technical talk on "carbon footprint concepts, methods, control measures and case study" – on 11/08/2017 by Ms. Theres Charly is a Civil Engineer currently working as an Asst. Professor in Vimal Jyothi Engineering College, Chemperi Kannur. The need and relevance of carbon footprint and different Green House Gas accounting methods and the relevance of Life Cycle Assessment and Embedded Carbon were also discussed.
- Technical talk on "Activity based Model in Urban Transportation Planning" on 08/08/2017 by Mr. Vishnu B is currently pursuing his Doctoral program in MIT Portugal Program. The talk elaborated the concept of activity based model in Transportation Engineering for sustainable development of transportation system.

Workshops

Hands on workshop on Autodesk fusion 360- 3D modelling software by BIMIT, Kochi- 09/08/2017. The hands-on workshop was meant to aid the students to acquire the knowledge needed to complete the process of designing models from conceptual Sketching through Solid Modelling.



IIIC Activities of Department of COMPUTER SCIENCE & ENGINEERING

Expert talks

Industry-Institute Interaction cell of CSE department has organized an expert talk on "Recent trends in IOT based on python and Raspberry" S7 CSE students on 01/08/2017 By Mr. Fayiz, CTO, Bits forge solutions ,Info Park Koratty. The resource person had given an overall idea about the current trends in the emerging field, in which the developers are on demand and had pointed out the various programming environments on which the students has to acquire knowledge. He had also discussed about the key concepts in these areas.

Industry-Institute Interaction cell CSE department has organized a Motivating talk on Career guidance and counselling Support for S7 CSE students on 30/08/2017. Mr. Muhammad Farooque, Rubix Academy, Muvattupuzha was the resource person for the lecture.



Industry-Institute Interaction cell of CSE department organized a talk on the topic "Trends in IOT for a start up" for S1 CSE students on 16/11/2017. Mr. Julian P Thomson, PCPL, Muvattupuzha was the resource person for the workshop.



Mr. Julian P Thomson, PCPL, Muvattupuzha
Delivering the talk



S5 CSE Students Attending
"Career Guidance and certification course"

Industry-Institute Interaction cell of CSE department has organized a workshop on "Ethical Hacking" for S5 CSE students on 27/09/2017. Mr. Binol, CEO, Livewire Solutions, Muvattupuzha was the resource person for the workshop. From the students' perspective the lecture was very informative and they have got some new ideas about what are all the skills the industry is looking for and how to focus on them.



Students attending the workshop on Ethical Hacking



IIIC Activities of Department of ELECTRICAL & ELECTRONICS ENGINEERING

Expert Talks

The Technical talk on the topic "Experience In Manufacturing Testing And Qualification of Instrumentation System for Special Applications" was delivered by Shri A Dineshkumar, Managing Director M/s Control Technology to department of EEE students on 29.08.2017.



Managing Director M/s Control Technology Bangalore along with Students



Managing Director M/s Control, Technology Receiving memento from HOD EEE

Dr B Babu, Senior Scientist BARC has delivered talk on "Data Acquisition and Control System In Industries" to second year students department of EEE

Industrial Visit

Regular industrial visits were arranged for students. The industries visited recently include, Hydraulic power stations at Edamalar, & Pallivasal, Nuclear power stations at Koodankulam, the transformer manufacturing industry M/s TELK Angamaly, M/s Traco cables Ltd etc. Reports on each industry visits were prepared and is retained in the department.



VJCET Faculty member at M/s Instrumentation Ltd Palakkad

Interaction with Industries

Based on an invitation Dr K K Rajan visited M/s Instrumentation Ltd. Palakkad. He has seen various types of valves developed by the firm for sodium system applications and could interact with senior officials of the firm.



Dr K K Rajan, Dean IIIC addressing Engineers of M/s Instrumentation Ltd Palakkad



IIIC Activities of Department of ELECTRONICS & COMMUNICATION ENGINEERING

Expert talks

Department of ECE conducted a technical talk for the third year students on 'Artificial Intelligence' by Mr. Jasim from Bits Forge Technologies Kochi on the 26th of September 2017.

An expert talk on the topic, 'Recent Advancements in Embedded Systems' was conducted for S8 ECE students on 5th March 2018 in the college. The talk was delivered by Mr. Deepu Paul.

Workshops

A 3-day add-on course on 'Embedded System Design Using PIC & AVR' was conducted under the Embedded Research & Development Division of Rhydo Technologies Pvt. Ltd. from 24/02/2018 to 26/02/2018 for the students of S6 EC in the college.

A 3-day add-on course on 'Raspberry PI & PYTHON' was conducted under the Embedded Research & Development Division of Rhydo Technologies Pvt. Ltd. from 24/02/2018 to 26/02/2018 for the students of S4 EC in the college.

Industrial Visit

An industrial visit to Ingenious Power & Control System (IPCS) Automation (Kozhikode) and All India Radio Station (Mysore) was organised on 10/02/2018 and 12/02/2018 respectively for the students of S6 EC A. A one-day industrial visit to Pallivasal Hydro-Electric Plant was organised on 18/04/2018 for the students of S4 EC A. Another one-day industrial visit to ITI Limited (Palakkad) was organised on 24/02/2018 for the students of S8 EC.

Industrial visit to
Ingenious Power & Control System (IPCS) Automation



Mr. Jasim from Bits Forge Technologies Kochi delivering a talk



Industrial visit to Pallivasal Hydro-Electric Plant



IIIC Activities of Department of INFORMATION TECHNOLOGY

Expert talks

Students are Industry Institute Interaction cell of Information Technology department organised a

technical Talk on "Span of IT in Business Field" by Mr. Athil Farook, Business Development Executive, Think Palm Technologies, Kochi for S8 IT students on 1st March, 2018.



Mr. Athil Farook Delivering the Talk



Industry Institute Interaction cell of Information Technology department organised a technical Talk on "To Become an Entrepreneur in IT Industry" by our Alumni Mr. Joji M Chemparathy, B.Tech IT 2011-2015, Managing Director, Ezek Digital, Thodupuzha, for S4 IT students on 24th February, 2018

Mr. Joji M Chemparathy, delivering the talk

Organized a technical talk on "Career Opportunities and in IT Industry - In perspective of Talent, Skills and Responsibilities" by our Alumni Mr. Rolbin Tom Software Engineer, Geojith technologies, Kochi, for S2 IT students on 21st February, 2018.

Mr. Rolbin Tom delivering the talk

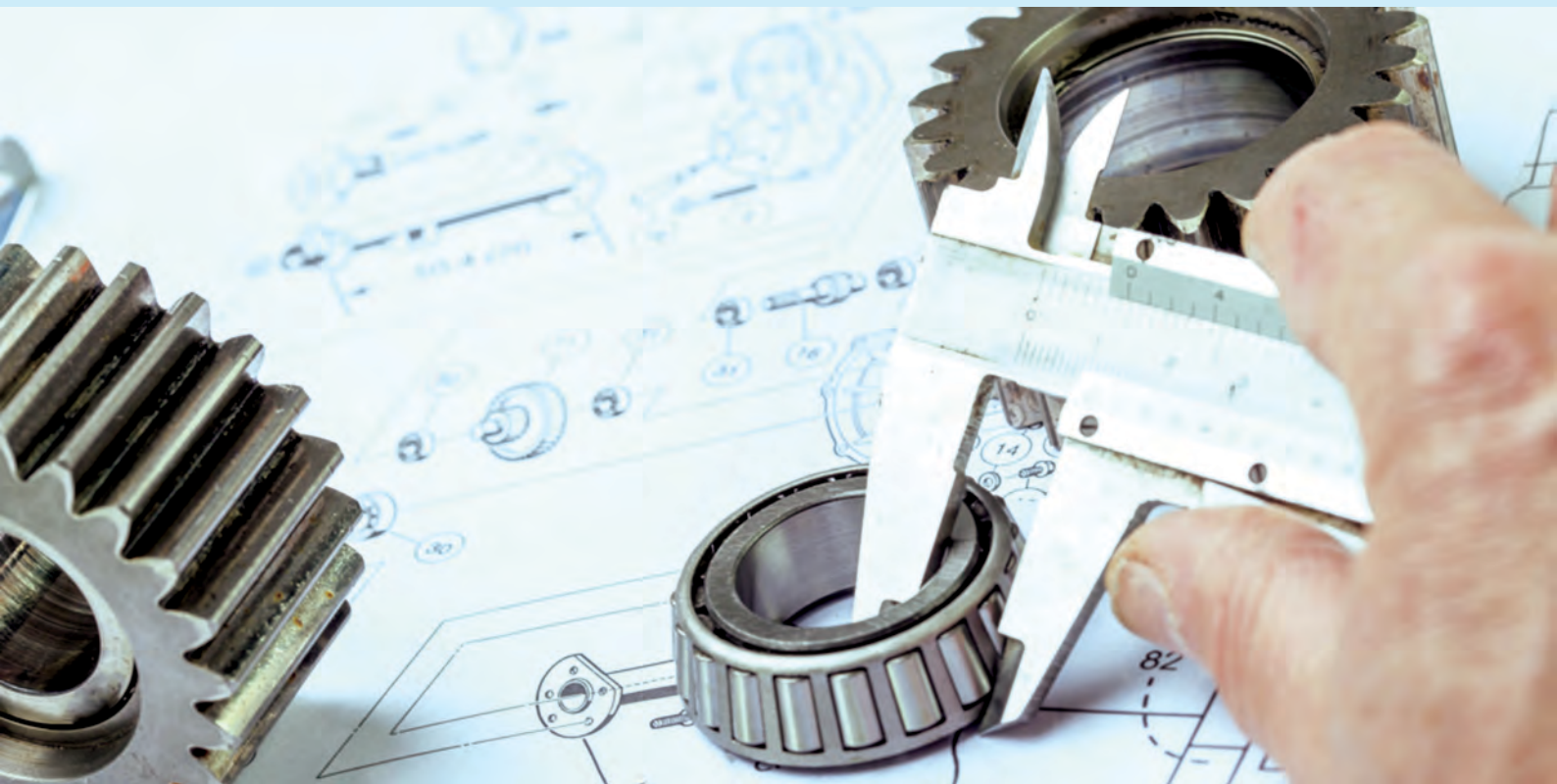


Training programme

Organized a Training Program on "Lets raise to an Entrepreneur" by Mr. Bino K Benny, Senior Android Developer, Web and Crafts for S6 IT students on 21st February, 2018

Mr. Bino K Benny, delivering the talk





IIIC Activities of Department of MECHANICAL ENGINEERING

Expert talks

- Expert Talk on Moulding Mechanical Engineering Career towards Industrial Demands by Mr. Joseph T Cyriac, Managing Director, Jocy Aerospace & Jocy precomp Thodupuzha 09-11-2017.
- Expert Talk on Role of Mechanical Engineers In Building Services Engineering (BSE) Mr. George Jacob DC MEP Infra, Engineer, Mannai corporation, Qatar 03.11.2017
- Expert Talk on Role of Mechanical Engineers towards the energy Security of the Nation Dr. K. K. Rajan Dean Industry Institute Interaction Cell Of VJCET and Independent Director of Nuclear Power Corporation of India Ltd. on 03.03.2017
- Expert Talk on Introduction To Ship Building , Mr. Finz George Deputy Manager, Ship repair Commerce and Business Dept, Cochin Shipyard Ltd, on 27.10.2017
- Expert Talk on "Aligning your career aspirations with the needs of the Industry Mr. A Nandakumar Senior Project Manager BARC Mysore on 09.10.2017

Industrial Visits

M/s Five Star Steel, Thrissur (on 9.9.17) Kaiga Nuclear Power Plant (on 11.9.17) M/s Pure Solutions, Kozhikode (on 13.9.17) are the main Industries visited by students this report period.

There is an evident gap, reported by numerous studies, between the academic standards in engineering colleges and the actual operating conditions in the industry. The most basic ingredient that identifies you as an engineer is the knowledge in your field of study. An awareness of the latest technological developments in your own field of study, will build your identity as an engineer further. Good knowledge on any subject does not warrant the ability to apply it to solve real-time problems. Employers are keen for engineers, who prove that they can call upon the relevant skills as and when required. Information literacy is the ability to identify the need for information and find resources to start and finish a project from scratch. Engineers are expected to be creative enough to come up with innovative ideas and analytical enough to link knowledge from different areas to solve problems. Tinker with every new idea you encounter. Experiment!



Shri A Nandakumar
Project Manager RMP Mysore Addressing Students



Mr. Finz George, Deputy Manager,
Ship Repair Commerce and Business Development,
Cochin Shipyard Limited

The talk aimed at giving awareness to the students about an introduction to ship building. Basically it was be a brief description about the process flow involved in ship building, right from design and planning phase to delivery of a new built ship. Also, the talk gave the students an overview about the different job prospects and higher studies in ship building industry.

"Role of Mechanical Engineers in Building Services Engineering (BSE)" on 3rd November, 2017.

The session was be handled by Mr. George Jacob, DC MEP Infrastructure Engineer, Mannai Corporation-Qatar, The talk aimed at giving awareness to the students about an introduction of role of mechanical engineers in the field of Building Services Engineering (BSE). Basically it was a brief description about the process flow involved in the field of BSE, right from design and planning phase to testing and commissioning stage. Also, the talk aimed at giving the students an overview about the different job prospects and higher studies in this field.



An expert talk on
'Moulding mechanical engineering career
towards industrial demands
by Mr. Joseph T Cyriac, Managing Director,
Jocy Aerospace & Jocy precomp, Thodupuzha.

UNITED NATIONS academic impact

Sharing
a Culture
of Intellectual
Social
Responsibility

chapter @ VJCET

The United Nations Academic Impact is open to all institutions of higher education granting degrees . The initiative was formally launched on 18 November 2010 by United Nations Secretary-General at UN Headquarters in New York City. Now there are over 1000 member institutions in more than 120 countries that reach millions of people in the education and research sectors around the world. VJCET has become a UNAI member recently. The United Nations Academic Impact encourages higher education institutions to actively support the UN's ten universally accepted principles.

1. A commitment to United Nations Charter
2. A commitment Human Rights
3. Education for All
4. Access to higher education
5. Capacity Building in higher education
6. Global Citizenship
7. Peace and Conflict Resolution through education
8. Addressing issues of poverty through education
9. Promoting sustainability through education
10. Intercultural Dialogue and understanding

VJCET has got membership in UNAI fraternity with effect from 16th June 2017. Formal inauguration of United Nations Academic Impact (UNAI) VJCET Chapter was held by Rev. Fr Dr. George Thanathuparambil Director, Viswajyothi College of Engineering & Technology Vazhakulam, Muvattupuzha on 23.11.2017, Thursday at 11.00 am in the R&D Seminar Hall. Dr. Milind Thomas Themalil Dean, Research & Development and Corporate Affairs Believers Church Caarmel Engineering College, Ranni was the Chief Guest of the function.



Inauguration of UNAI VJCET chapter



Members of UNAI VJCET chapter along with chief guest on inauguration day



INTERNATIONAL INTERACTIONS & COLLABORATIONS



As a part of Industry Institute Interaction cell activities in VJCET, a decision has been taken to undertake a visit of a multidisciplinary team to Hannover Messe 2018, the international technical trade fair in Germany and also visit industries, research centers and universities abroad to understand the nature of activities and look into the possibility of collaborative work at international level. Accordingly a team consisting of the following members of VJCET had visited various Institutes, Universities, Industries and Hannover Messe 2018.

OBJECTIVES

- To strengthen industry partnership and internship by participating in Hannover Messe
 - Encourage students to visit Trade Fair to learn industry practices to create experiential learning environment for the students
 - To collaborate with the Association of German Industries and its Indian chapter by starting multifunctional labs for industry use and collaboration
 - Visiting Technological universities and Research centres (IBM Research Zurich) ETH Zurich, DTU Denmark, IBM Stockholm to establish academic contacts for international collaboration, seminars and conferences.
 - Improve Faculty Development programme by bringing Industry experts from Germany in association with SES Bonn and to begin Technology Incubation Centre and Startup
-





They pioneered the International Mission from VJCET



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1. **Dr. George Thanathuparambil, Director VJCET**
2. **Mr. Luckachan Olickal, Treasurer, VJCET Trust**
3. **Dr. K. K. Rajan Prof. EEE and Dean Industry Institute Interaction Cell**
4. **Mr. Vinoj K, HOD, Mechanical Engineering**
5. **Shri Devasia K J, Prof. Mechanical Engineering**



Ms. Jessy Mathew
International Co-ordinator, IIIC

The team left India on 18.04.2018 morning. Three members of the team, Dr. K. K. Rajan, Shri. Devasia K. J. and Mr. Vinoj K returned on 01.05.2018 and Mr. Luckachan Olickal and Dr. George Thanathuparambil returned on 10.05.2018 and 16.05.2018 respectively.

Visit to Waste Water Treatment Plant

The team reached Frankfurt on 19.04.2018 afternoon and stayed in Frankfurt for a day. On 19.04.2018 the team left to Karlsruhe to visit the Reutlingen waste water treatment plant. Mr. Claus D Hagenhoff of Carpe Diem GmbH, Engineering and Project Development accompanied the team during the visit. The city

authorities of Reutlingen, is in charge of the urban sewage treatment plant to treat the wastewater in northern part of the district. The plant is receiving waste water from areas of Altenburg and Oferdingen-Pliezhausen under development and treat waters through removal of nitrogen and phosphor in line with the wastewater treatment requirements. On the basis of detailed waste water investigations and an intensive preliminary

process design planning of the plant was carried out. Reutlingen North sewage treatment plant is equipped with an aeration tank for biological phosphor elimination, nitrification and de-nitrification. Additionally, the relevant facilities, such as the secondary settlement tank, the sludge storage and digestion tanks were included in the operating system.



An overview of the waste water treatment plant at Reutlingen in Germany

Technical details, of the plant

Capacity 79,000 PW (for persons)

In feed rate

Dry weather flow, 250 l/s

Storm water flow, 465 l/s

Required discharge value limits

COD $\leq$ 90 mg/l

BOD $\leq$ 20 mg/l

NH₄-N $\leq$ 5 mg/l

Nanorg $\leq$ 18 mg/l

Pges $\leq$ 1.5 mg/l

Energy supply

Electrical energy demand 750 kW

Thermal energy demand 980 kW

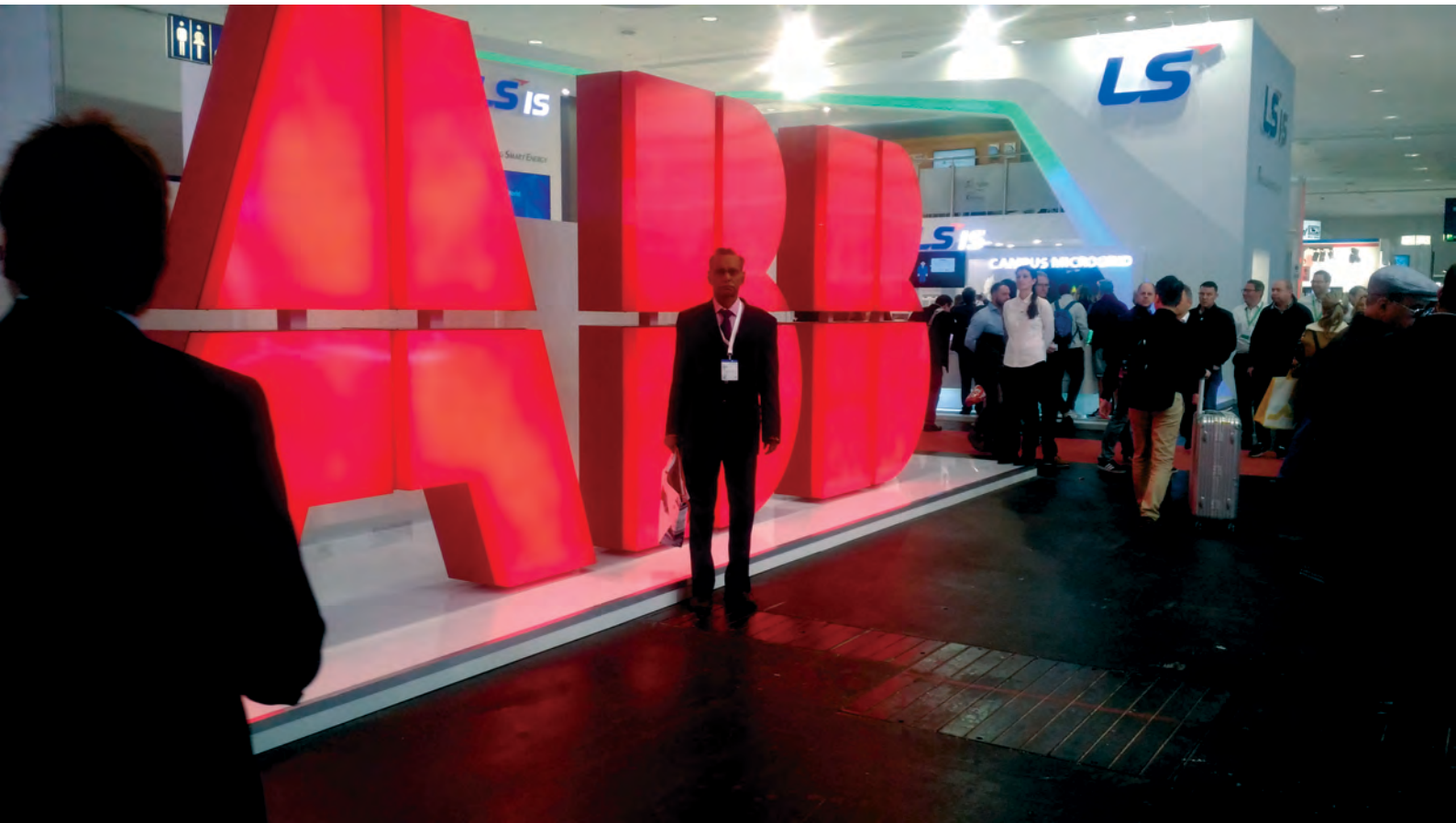
Project cost: 15,000,000 €

Project Period: 1998- 2006

Plant is producing electricity from the methane gas extracted. The capacity of generator is 100kW. Plant is mostly automated with state of art sensors and instruments. The industrial atmosphere maintained in the surrounding of the plant was note worthy. Based on the experience gained possibility of making improvements in the plant at VJCET may be explored.



With the Engineers of Reutlingen Waste Water Treatment Plant in Germany



Visit to ABB

ABB (ASEA Brown Boveri) is a Swedish-Swiss multinational corporation headquartered in Zurich, Switzerland, operating mainly in robotics, power, heavy electrical equipments, and automation technology areas. ABB is one of the largest engineering companies in the world. The substation automation division of ABB at Badan near Zurich was visited by Dr K K Rajan on 20.04.2018 afternoon. Shri E P Krishna Prasad coordinated the visit. The entire process design, manufacturing, testing, packing and delivery of substation automation equipments and systems for Asia and Asia pacific region is carried out from ABB Badan. The level of automation incorporated in control panel assembly wiring and testing was

amazing and could be witnessed. Substations are the building blocks for any grid. ABB has been automating substations ensuring highest interoperability as per international standards like IEC 61850, and providing grid operators and owners with highest efficiency and increased productivity. Modern automation is digital based. Digital substations can increase controllability, facilitate the integration of intermittent renewable energy sources and improve safety by replacing copper cabling with fibre optics. ABB Grid Automation enables the digitalization of the grid so that customers can improve reliability and ensure safe and clean energy supply to their consumers.

Dr K K Rajan Interacted with Shri E P Krishna Prasad, Head of Sales, Asia & Asia Pacific ABB Switzerland. He

is responsible for Strategy formulation, implementation & development of markets in Asia & Asia Pacific region. He has agreed to visit VJCET during January 2019. He has also agreed to arrange technical experts from Bangalore office of ABB for technical talks on the subject.



Visit To IBM RESEARCH, ZURICH

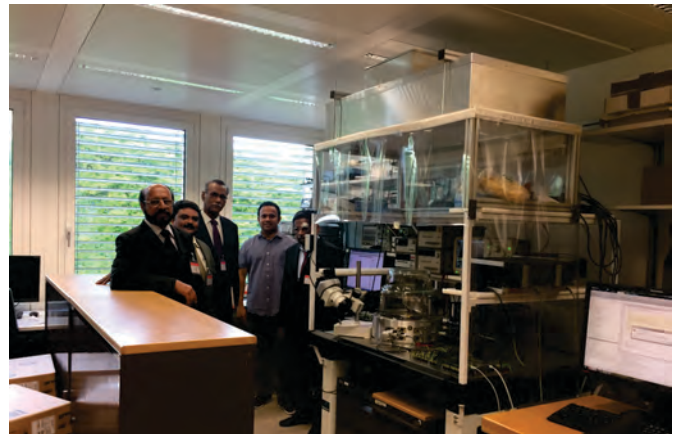
On 20.04.2018 the team visited IBM Research Centre Zurich, which is one of IBM's 12 global research labs. IBM has maintained a research laboratory in Switzerland since 1956. As the first European branch of IBM Research, the mission of the IBM Research – Zurich Lab, in addition to pursuing cutting-edge research for tomorrow's information technology, is to cultivate close relationships with academic and industrial partners, be one of the premier places to work for world-class researchers, to promote women in IT and science, and to help drive Europe's innovation agenda. Worldwide interaction and collaboration with internal partners in research, development, industry sectors, and with IBM customers play a vital role in the Zurich Laboratory's activities. IBM researchers are active members of the international scientific community by participating in seminars, conferences, and professional associations in

a variety of functions. IBM Research – Zurich is also involved in many joint projects with universities throughout Europe, in research programs established by the European Union and the Swiss government, and in cooperation agreements with research institutes of industrial partners. IBM Q is an industry-first initiative to build commercially available universal quantum computers for business and science. Today, quantum computing is a researcher's playground. In five years, it will be the mainstream. In five years, the effects of quantum computing will reach beyond the research lab. It will be used extensively by new categories of professionals and developers looking to this emerging method of computing to solve problems once considered unsolvable. Quantum computers are incredibly powerful machines that take a new approach to processing information. Built on

the principles of quantum mechanics, they exploit complex and fascinating laws of nature that are always there, but usually remain hidden from view. By harnessing such natural behaviour, quantum computing can run new types of algorithms to process information more holistically. They may one day lead to revolutionary breakthroughs in materials and drug discovery, the optimization of complex manmade systems, and artificial intelligence. Dr Abu Sebastian a member of the Advisory board of our college, a highly dedicated and knowledgeable Scientist from Kerala took as around and shown the research work being carried out by him. Ms Maria explained in detail about the various research activities progressing in the centre. This centre produced four Nobel Prize winners in the recent past. The visit to this centre was an amazing experience.



Listening to Scientists of IBM Zurich Research Laboratory



With Abu Sebastian research lead at IBM research, Zurich

**Visit To ETH :
Swiss Federal Institute of Technology, Zurich**





In the 2018 edition of the Quacquarelli Symonds (QS) World University Rankings ETH Zurich is ranked 10th in the world. In the 2018 QS World University Rankings by subject it is ranked 4th in the world for engineering and technology (2nd in Europe), and 1st for Earth & Marine Science. As of now, 32 Nobel Prizes winners have been affiliated with the Institute, including Albert Einstein.

We have interacted with Dr Sijo Mathew. Dr Sijo is doing his PhD at ETH. He has shown his laboratories to the team and explained about his work in the area of material science. A dedicated and highly knowledgeable scientist he has agreed to support VJCET activities and visit us and deliver talks.

On 21.04.2018 the team visited ETH Zurich. Dr Sijo Mathew from Muvattupuzha, Kerala arranged the visit. (Swiss Federal Institute of Technology in Zurich; German: Eidgenössische Technische Hochschule Zürich) ETH is a science, technology, engineering and mathematics (STEM) university in the city of Zürich, Switzerland. Freedom and individual responsibility, entrepreneurial spirit and open-mindedness, ETH Zurich stands on bedrock of these true Swiss values.

This university for science and technology dates back to the year 1855, when the founders of modern-day Switzerland created it as a centre of innovation and knowledge. At ETH Zurich, students discover an ideal environment for independent thinking, researchers a climate which inspires top performance. Situated in the heart of Europe, yet forging connections all over the world, ETH Zurich is pioneering effective solutions to the global challenges of today and tomorrow. 19,800 students, including 4,000 doctoral students, from over 120 countries are in the campus. There are around 500 professors. Full-time equivalent Personnel are around 9,100. Twenty one Nobel Prize winners, including Albert Einstein and Wolfgang Pauli are from ETH. On an average 90 patent applications and 200 invention reports are produced from this institute every year.



UN Head Quarters at Vienna

The United Nations Office at Vienna (UNOV) is one of the four major UN office sites where several different UN agencies have a joint presence. The office complex is located in Vienna, the capital of Austria, and is part of the Vienna International Centre, a cluster of several major international organizations. The UNOV was established on 1st January 1980.

The UN agencies Headquartered at Vienna are

1. International Atomic Energy Agency
2. International Money Laundering Information Network
3. International Narcotics Control Board
4. Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty
5. United Nations Commission on International Trade Law
6. United Nations Industrial Development Organization
7. United Nations Office for Outer Space Affairs

8. United Nations Office on Drugs and Crime

At the United Nations Office in Vienna there are many artistic works which are placed in the yard and in the corridors. VJCET team visited UNOV on 22.03.2018. Shri Kurian Jacob Maniyanipurathu, Document Management Assistant in United Nations Office for Outer Space Affairs and Smt Jasmine Kurian working in health care and first aid unit was instrumental in arranging the visit. Shri Kurian Jacob introduced to us Mr Umesh Menon who belongs Ahmadabad, Gujarat who regularly conducts entrepreneurship training programme with the support of UN.

The team visited Boltzmann's grave in Vienna. Boltzmann made great contributions in statistical mechanics, which connected properties and behavior of atoms and molecules with large scale properties of substances. Boltzmann's entropy equation $S = k \log W$, the simplest equation in statistical thermodynamics, is engraved on his gravestone.





In front of Vienna International Centre



In front of the Cemetery of Nobel Laureate and Scientist Boltzmann at Vienna



At IAEA Publication Division, UN headquarters



GÖTTINGEN UNIVERSITY

Göttingen University is one of the famous universities located at Göttingen Germany. Famous aerodynamicist and scientist Ludwig Prandtl and about forty Nobel Prize winners worked in this University. Prandtl had great contributions in fluid dynamics and aerodynamics. All aerodynamic problems related to flight, during his time, was solved by him and his students. He is really the father of modern aerodynamics. A visit to his place is really motivating. Right in the heart of Göttingen the German Aerospace Center (Deutsches Zentrum für Luft- und Raumfahrt; DLR) is located



Institutes and establishments at the site DLR Göttingen are

- Institute of Aerodynamics and Flow Technology
- Institute of Aeroelasticity
- Institute of Propulsion Technology
- Technology marketing
- German-Dutch Windtunnels
- DL School Lab Göttingen

The main activity of the DLR at Göttingen is aerodynamics related to aviation and traffic engineering. DLR Göttingen employs more than 400 experts in the foundation- and application-oriented field of aviation research. DLR commissions a vacuum chamber to test electric propulsion systems for spacecraft. High-performance ground and test flight carriers and flying simulators, air traffic simulation facilities, wind

tunnels in the European DNW foundation (German-Dutch Wind Tunnels), mobile rotor test stands and test stands for material and noise tests are available for experimental research. Together with the French Aeronautics and Space Research Centre ONERA, DLR Göttingen operates the largest mobile ground vibration test facility in Europe.

Test equipment for extremely sophisticated, experimental technology is manufactured in highly modern workshops of the Model Building Center. The certified railway laboratory provides DLR with the competence to help partners in the industry with the certification of their system components. For example, DLR consults users in the application of composite fiber technologies and new materials for all possible areas of application in the industry.

Focal points of the covered subject areas at DLR are

- improvement of the dynamic aircraft behavior and the operational safety of aircraft and helicopters
- increase in the performance, safety and reliability of air, road and railway traffic
- intelligent assistance systems for human operators of air and ground traffic
- development of design processes for low-resistance and quiet air equipment
- development and realization of adaptable, damage-resistant and cost-efficient, high-performance structures for aerospace and ground traffic

The VJCET team visited the University and DLR sites on 23.04.2018. Preliminary discussion on the possibility of DLR scientists visiting VJCET to deliver talks were carried out and it has to be flowed up further. The VJCET team also visited the house where Prandtl stayed and his cemetery. Mr. Jens Wcherpfenning, of DLR, coordinated the visit.



In front of Founder Scientist and Nobel Laureate Prandtl's house along with a DLR Scientist



**HANNOVER
MESSE**



Hannover messe is the world's leading Trade Fair for industry and technology, regularly conducted every year. This year it was from April 23 to April 27. Around 5000 leading exhibitors participated in the Messe this year. Displays related to all key technologies and core areas of industry such as research and development, industrial automation, IT, industrial supply, production technologies, services, energy and mobility technologies were found in Hannover Messe. This is where synergies are made between industries and between production and intra logistics. The world's leading trade show for intra logistics and supply chain management CeMAT also took place at Hannover exhibition grounds at the same time.

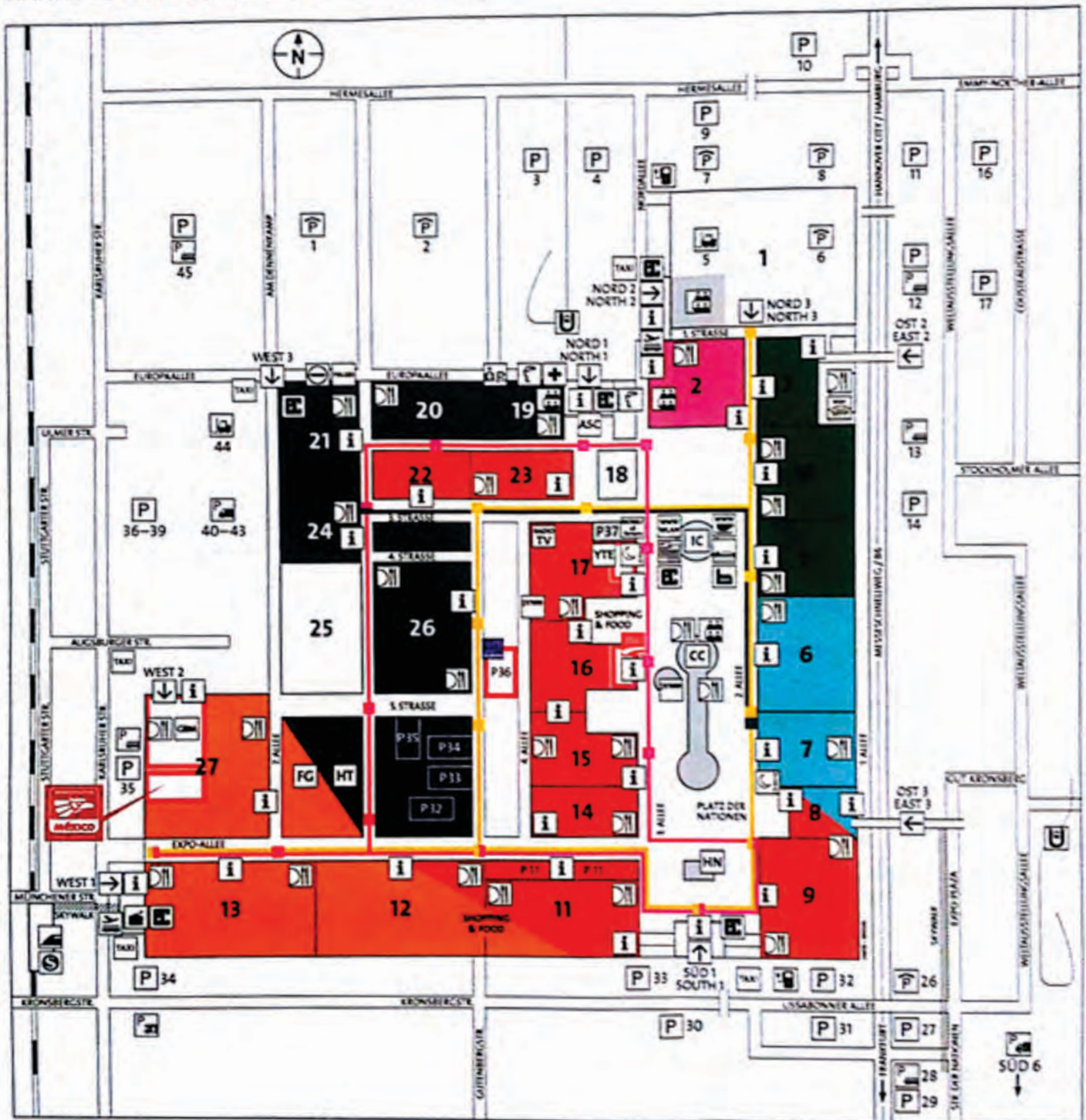
Hannover Messe 2018 and CeMAT was conducted in the a large exhibition ground at Hannover in 36 halls in 10 groups.

They were

1. Integrated automation motion and drives: Halls 9,11,12,13,14,15,16,17,22,23
Leading trade show for integrated Automation, Industrial IT. Power transmission and control
2. Digital factory : Halls 6,7,8
Leading trade show for integrated process and IT solutions
3. Energy : 11,12,13,27
Leading trade show for integrated energy systems and mobility
4. Industrial supply : Hall 3,4,5
Leading trade show for innovative subcontracting solutions and light weight constructions
5. Research and technology: Hall 2
Leading trade show for Research, developments and technology transfer
6. Ce Mat : Hall 19,20,21,24,26
World's leading trade show for intra logistics and supply chain management
7. Job and career: Hall 16
8. Robotation academy : Hall 36
9. Young tech Enterprises: Hall 17
10. Global business markets: Hall 27

Four days, from 10 AM to 4.30 PM the entire VJCET team spent in the Hannover Messe Exhibition grounds. First day all the five members of the team together went around the research and technology section. It took more than 4 hours to complete. Realizing the magnitude an size of the show we have formed three groups and separately visited different pavilions on the next three days. Product catalogue and business cards were collected from the exhibitors

HANNOVER MESSE / CeMAT, 23 – 27 April 2018



Exhibition Halls layout



Integrated Automation Motion and Drives

A great deal of intensive engineering goes into designing future-proof machinery and systems. Baumüller provides a complete range of services to help mechanical engineers speed up development times and get fully functioning machinery to market as quickly as possible.

Baumüller GmbH is a leading manufacturer of electrical automation and drive systems. It employs a workforce of around 1,850 at six production sites and more than 40 branches worldwide for the development, production and assembly of intelligent system solutions for mechanical engineering and e-mobility - ranging from user interfaces, motion control software, PLC open software modules and controls right through to converters and electric motors. And it goes even further - to offer an extensive range of services for automation solutions, using innovative software tools for simulations to help companies speed up the development process and get fully functioning machinery to market as quickly as possible. At HANNOVER MESSE 2018, the company showcased the example of servo presses to

demonstrate how modeling and simulation can be used to design the optimum automation and drive components for various kinds of machinery.

The process involves creating a digital twin during the development phase to anticipate how the machine will behave before the real version even exists. This not only speeds up the development process, but should also significantly reduce the outlay for commissioning machinery. The virtual machines can be used to try out software functions and control algorithms early on. As a result, design and system errors can be detected more quickly and eliminated in advance. Baumüller can also provide manufacturers with data for new machinery during the configuration stage to assist with the model-based design of electric drive trains. These innovative services all add up to make the company an excellent partner for all stages of mechanical engineering projects. HANNOVER MESSE shows how IT, machines, and people are collaborating more closely together. Many exhibitors brought show-stopping displays with them.

Digital Factory

Integrating data from all processes of the value chain is the deciding factor in gaining the competitive edge in the manufacturing industry. At Digital Factory, you will discover IT solutions that enable the exchange of data between development, production, and distribution. The trade fair also showcases software for virtual product development, for production planning and control, and for predictive analysis.

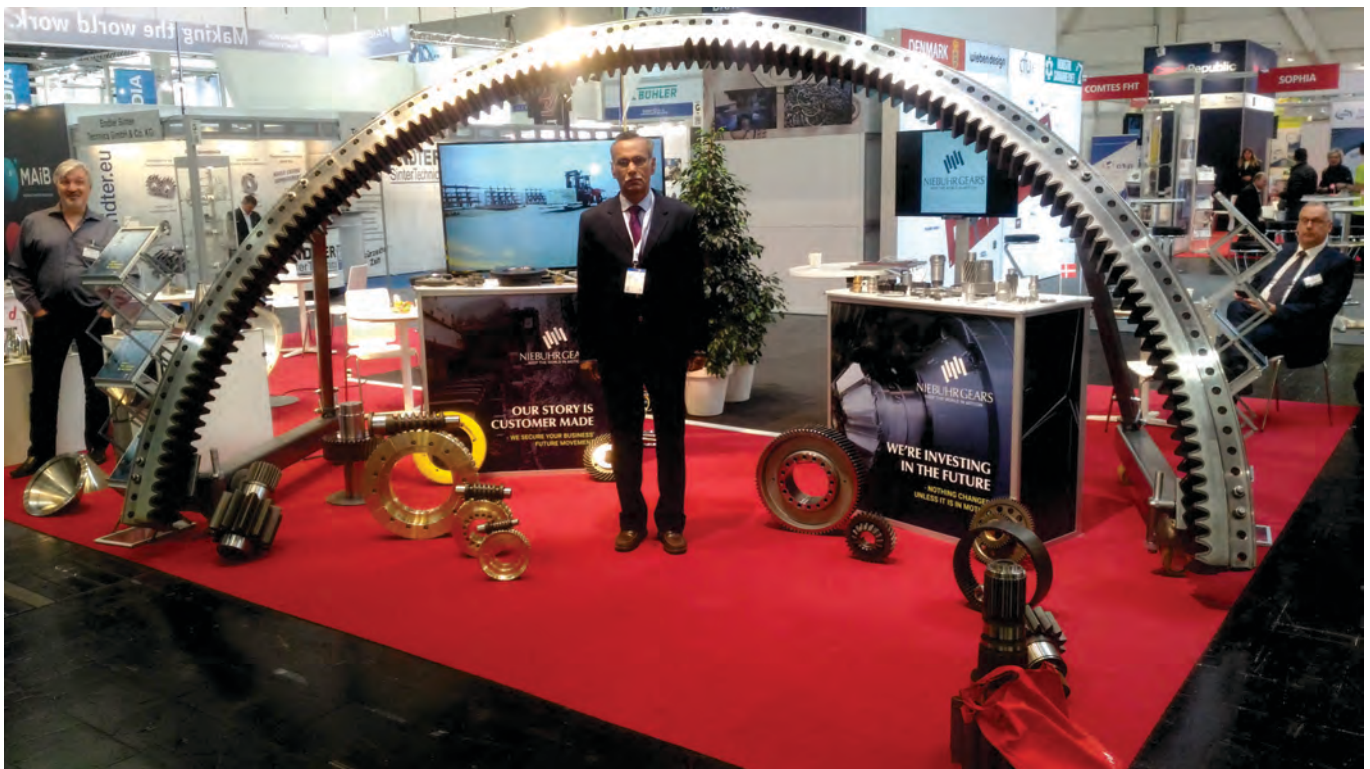
Energy

In an increasingly decentralized energy market, innovative technologies are needed in order to make electric power systems more flexible, to intelligently connect sectors, and to engage new market participants. At the Energy trade fair, industry players meet solution providers and decision makers in politics and economics. Together, they discuss how to lead a

successful energy transition, how to develop the changing infrastructure of tomorrow, and how industrial companies can significantly cut costs by using energy more efficiently.

Industrial supply

Suppliers are a key driver of industrial digitization. After all, the smart factory can only be as smart as its individual components and systems. With their innovative solutions, suppliers are becoming increasingly involved – both physically and digitally – in adding value to their customers' business. The display includes from materials and processes to key topics such as lightweight construction. At the Industrial Supply trade fair, international suppliers exhibit the entire range of solutions and present themselves as reliable development partners.



In an exhibition pavilion of Industrial Supply Group



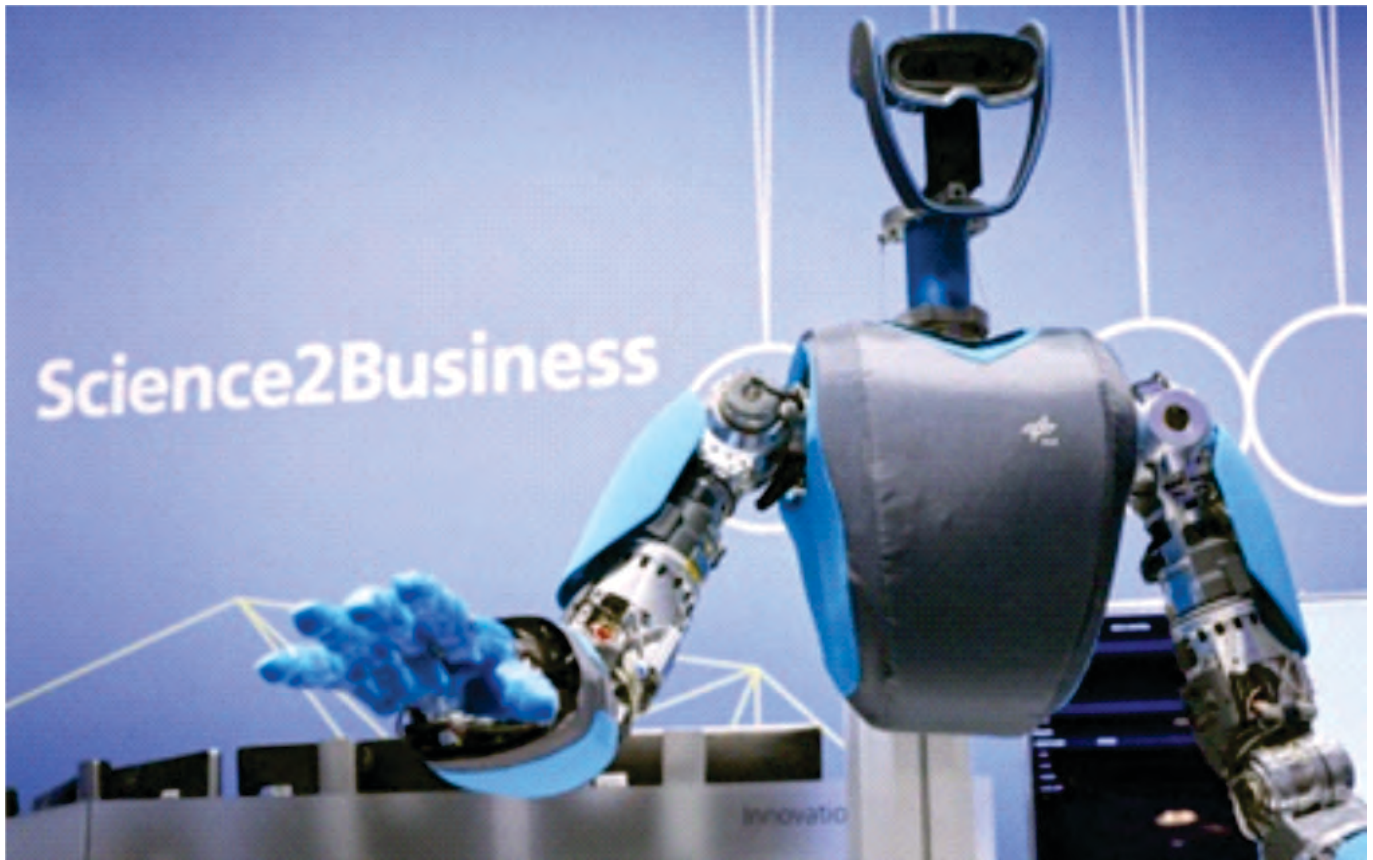
From Hannover Messe

Research & Technology

In Research & Technology, where ideas from visionary researchers become real-life applications. Experts in science and economics provide an insight into what the industry could look like in the future and which solutions are about to hit the market. From cognitive systems for quality inspection to completely new methods of production, at Research & Technology you will find the solutions that will shape the industry of tomorrow.

The sensors and measuring technology

Sensors and sensor systems are a key technology with good growth rates in Germany. A German Association for Sensor Technology and Measurement Technology revealed that this industry is booming. In 2017, it recorded an increase in sales of 9%. Further growth by another 8% is expected for the current financial year. In view of the positive forecasts, many companies plan to increase their technical personnel resources. Although sensors and measurement techniques are now used in almost all areas, including mechanical engineering, safety technologies, and Industry 4.0, the potential is far from exhausted.



A Robot under display in the Hannover Messe

Artificial Intelligence Drives Automation

Artificial intelligence plays a crucial role in more than just robotics. Artificial intelligence (AI) is sure to be one of the biggest trends over the next few years and a crucial factor in international competition. Germany's chancellor, Angela Merkel made this clear in her opening speech at Hannover Messe. With regards to the American and Chinese markets, Merkel stated, "We want to be part of the competition and be at the forefront of it." To make this happen, Germany will be backing many activities in artificial intelligence. EU commissioner, Günther Oettinger also promised further funding into AI during his visit to the trade fair. The exhibition showed how companies in many industries

can already optimize their processes using AI. For example, the Fraunhofer Institute for Digital Media Technology (IDMT) presented an acoustic condition-monitoring system for axial piston pumps that is based on machine learning. Sensors record the sound of the pumps and compare the data it collects with typical levels in order to check for anomalies. In this way, possible failures are detected as early as possible and operators can see where a bearing has too much play or where the supply of lubricant is wrong. With early detection, a service technician can intervene promptly and prevent further damage being caused to the drive train or hydraulic system.



IoT Platforms Combine Data with Business

Digitizing and connecting devices, components, and processes will enable new paths for collaboration, even across company borders. Digital platforms and the internet of things (IoT) will play a significant role in this for the future. These platforms will allow data on components and devices to be collected and evaluated centrally. In addition, companies will be able to create much closer partnerships and business networks. Siemens were among many exhibitors at Hannover Messe who demonstrated the opportunities that an IoT platform can offer. In order to improve pitch maintenance at Allianz arena, Munich, Siemens installed sensors in the lawn that are connected to its cloud-based "Mind Sphere" IoT platform. Information on irrigation, wind, light times, and fertilization all work together in real time. The software also takes the current weather forecast into consideration in order to derive the best recommendations for soil care. The information is sent directly to the smart phone of the lawn attendant.

The case demonstrates a principle that is currently revolutionizing the entire industry. More and more machine manufacturers are offering pay-per-use models where they sell usage time to customers rather than devices like they used to. This is recorded directly by the machine and sent to a cloud platform where it is calculated and directly billed to the customer via an ERP system. This type of model also provides additional services that relate to machine operation, such as predictive maintenance. Based on anomalies in data patterns, the manufacturer can detect remotely when and where a machine is about to fail. A central component to many of these models is digital twin technology which provides a detailed and accurate representation of a machine or system. This helps operators to monitor their assets from conception, to production, to customer support. Manufacturers and operators have access to the same data throughout the entire lifecycle of machinery.



From Hannover Messe

Augmented Reality (AR) offers a new perspective to the manufacturing industry.

Augmented Reality (AR) offers a new perspective to the manufacturing industry. An increasing number of companies today are training their employees with the use of augmented reality (AR). In contrast to virtual reality, where a user is fully immersed in a virtual world, AR enhances reality with additional information. This is ideal for training employees on how to use equipment: Smart glasses project instructions

directly onto a machine. A trainee is guided step by step on how and where a specific component should be installed. The significance of AR was underlined by the jury's pick for the Hermes Award this year: Among the finalists was the company Upskill with its "Skylight" solution. This software platform enables companies to develop, test, and implement AR applications centrally. Data about production processes can be integrated directly into the AR application.



From Hannover Messe

CeMAT

The leading trade fair CeMAT Germany is the most important global meeting-place for the entire Materials Handling/ intralogistics and logistics technology sector. This year CeMAT also took place at the same time as Hannover Messe at the Hannover Exhibition Grounds. Logistics 4.0 will meet Industries 4.0 in Hannover was the slogan. In the current era of integrated production, intralogistics is becoming increasingly important thanks to the key role it plays in optimizing the industrial value chain. Companies have shown how digitalization is set to change the supply chain in an international context and which new business models could emerge as a result. Apart from production, the focus will be on e-commerce and the online retail sector, where double-digit growth rates are creating major challenges that can be tackled successfully only by switching increasingly to automated

and digital processes. The move towards complete integration of all logistics processes is being systematically driven forward. Key technologies such as cloud computing, mobile applications, real-time communication, the Internet of Things and Big Data are becoming more and more important. Manufacturers, retailers and sales experts came to CeMAT to gain an overview of innovative ways of managing the flow of goods even more intelligently. Exhibitors in CeMAT 2018 got the advantage of a wide range of synergies resulting from the proximity of CeMAT to Hannover Messe. Exhibitors at CeMAT were focusing on costs & efficiency, process optimization, robotics & automation, IT & technology, data interchange and the entire field of mobile applications. Smart logistics solutions are increasingly becoming a critical success factor in virtually all areas of modern industry.



Discussion with VDMA officials in Hannover Messe

Discussion with VDMA office bearers

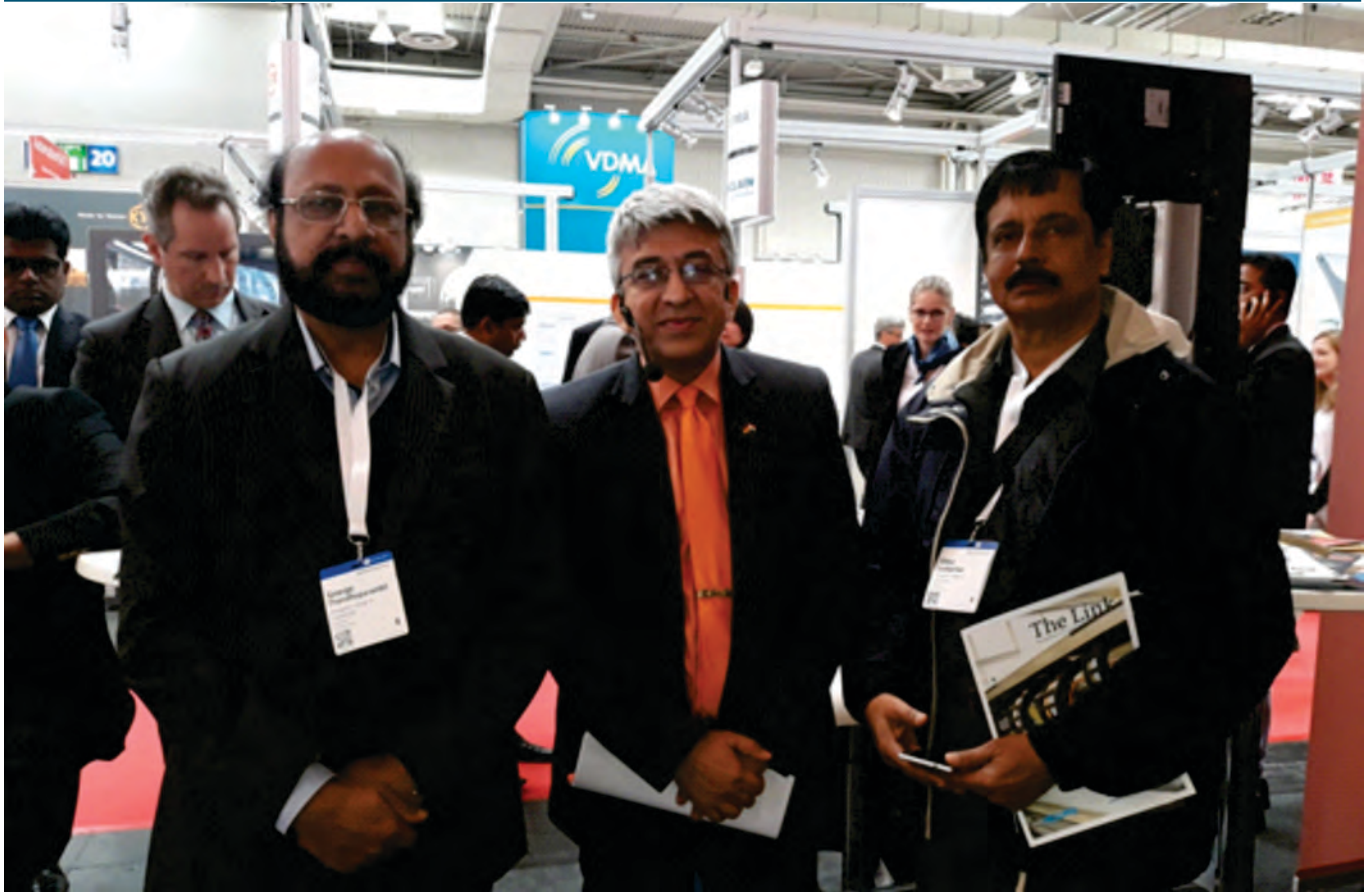
The Mechanical Engineering Industry Association (Verband Deutscher Maschinen- und Anlagenbau – VDMA) has its headquarters in Frankfurt, Germany, and represents around 3,200 members, making it the largest industry association in Europe. VDMA had arranged its stall in Hannover Messe. We had an appointment with Mr. Fredrick Wagner, person responsible for international co operation, and had discussion with the possibilities of collaboration. Since almost 20 years, VDMA has established an office in India which acts as a bridge-head between the German and Indian Industry and shares expertise and experience with its member companies from different industrial sectors. The VDMA India also had a pavilion at Hannover Messe. VJCEI team have visited the pavilion and also attended the discussion

meet and the presentations held in the pavilion on different aspects of collaborative industrial development in India. The team had discussion with Shri Rajesh Nath, Managing Director VDMA India and other senior personalities present in the discussion meet.

VDMA represents the interests of the predominantly medium-sized companies in the mechanical engineering industry towards policymakers and society, as well as towards business, the scientific community, public authorities and the media. With more than one million employees and a turnover of around EUR 218 billion, mechanical and plant engineering is Germany's largest employer in the industrial sector. German machinery production is valued at EUR 201 billion and Germany's mechanical and plant engineering sector is extremely

export-oriented (with an export rate of 77.4 percent) In addition, VDMA sees itself as a platform that provides its member companies with various networks where they can discuss technological challenges, interdisciplinary issues and many other topics. The association was founded in 1892.

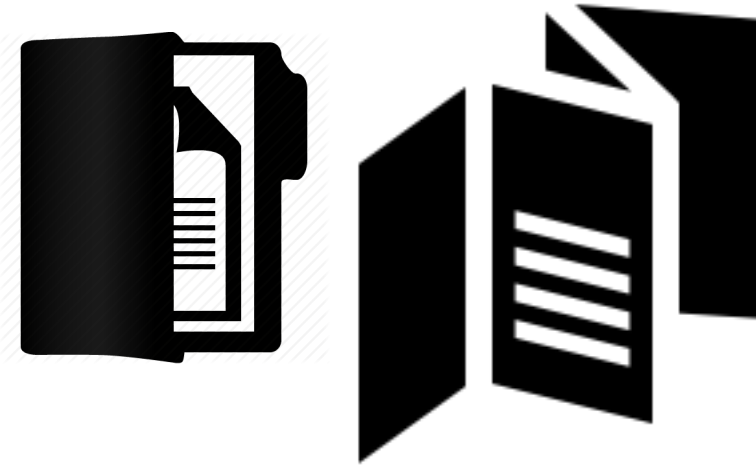
It successfully accompanies its members in global markets. Its technical expertise, industry knowledge and straight forward positioning make it a recognized and valued point of contact for companies as well as the general public, science, administration and policy makers. The mechanical and plant engineering sector is developing solutions to meet today's major challenges day after day. The mechanical and plant engineering sector is Germany's largest employer, and it is the backbone of the German economy.



With Shri Rajesh Nath VDMA, India, Managing Director



With Shri Rajiv Chawla, Chairman, Jairaj Group



Catalogs and Documents

Visiting cards, Documents and Catalogs were collected from Industries, Research Institutes, Universities and from the exhibitors of Hannover Messe. All these catalogs and documents are sorted and grouped under following five headings and are filed in box files.

- General
- Mechanical
- Electrical and Electronics
- Instrumentation
- Computer Science and Information technology

These box files of catalogs and documents are available in library for reference.



Visit to SEZ

On 02.05.2018, morning 10.00 hrs Dr George Thanathuparambil and Shri Luckachan Olicckal visited Stiftung Entwicklungs-Zusammenarbeit Baden-Württemberg (SEZ) Foundation for Development Cooperation an organization run by State of Baden Wuertemberg. German state of Baden-Württemberg created the Foundation for Development Cooperation in 1991. The SEZ's main focus lies on education and public relations with regards to the relationship between the northern and the southern hemispheres. SEZ is as an advisory center for individuals and groups that have taken an interest in the so-called "Third World". The main objective of SEZ is to support exchange and networking between individuals and groups involved in development policy, and to assist private, communal

and regional initiatives working in the context of the Third World. In the educational sector, the foundation acts as an information center for global learning in Baden-Württemberg. While offering advice, SEZ help schools to design workshops and establish contacts with guest speakers and artists. SEZ offer assistance in all aspects and stages of projects such as exchange programs or the twinning of schools. In addition, they advise those who are interested in gaining work experience abroad, for example as an intern. They see themselves as a forum for exchange and continuing education, and cooperate with higher state departments of education in order to hold seminars and workshops on a regular basis. A meeting was held with Mr Novak, person in charge for Asia for project funding. They are also ready to support us.



SES

Senior Experten Service

**Seguir con éxito
mañana
requiere**

prepararnos *hoy!*



SES

Senior Experten Service

DER WELT EXPERTEN DIENST

Visit to SENIOR EXPERTEN SERVICES



Visita SES

On 03.05.2018 Dr George Thanathuparambil and Shri Luckachan Olickal visited Senior Experten Services(SES), Bonn, Germany. The SES is Germany's leading volunteering organization for experts and executives who are either retired or taking some time off work. The SES has been helping people to help themselves since 1983 – all around the world, in every industry and sector.

Mission statement of SES

Key idea: the future needs experience

- We actively put the huge potential of voluntary experts and executives who are either retired taking some time off work to use in society.
- We have a special commitment to post-occupational volunteering. We see demographic change as an opportunity.
- We facilitate the sharing of knowledge and experience and promote solidarity between people from different generations, cultures and nations.
- We strengthen societal, economic and social development and thereby contribute towards raising the standard of living.

Mission: helping people to help themselves in the interests of sustainable development

- We offer our experts all sorts of different ways to volunteer. Their expertise improves other people's opportunities.
- We enable our clients to shape their own future in a better, sustainable way.
- We support all levels of training for experts and executives in Germany and abroad.
- We strengthen the social and professional skills of young people in Germany.

Guidelines: employees and volunteers working hand in hand

- We utilize the synergies which arise when employees and volunteers work together, both within our organization and beyond. That is one of the keys to our success.
- We work on the goals agreed with our clients in a demand-led, needs-based fashion.
- We safeguard quality and sustainability. We use our partners' satisfaction as a benchmark for measuring our performance.
- We treat the resources available to us responsibly and carefully.
- We take an individual approach to fostering our employees' development. Our managers lead by example. Their leadership style is hallmarked by esteem and respect.

Values: responsibility and respect

- We are committed to upholding the principles of free democracy and the free economic and social order. We see entrepreneurial initiative as a driving force for sustainable development.
- We maintain neutrality and independence and respect third parties' rights.
- We value fairness and respect above all, and always seek to maintain an open, trusting dialogue.
- We act responsibly towards society. We comply with international legal standards and reject any form of corruption as a matter of course.



Foundation and limited company

The SES Foundation and the limited company SES GmbH are based in Bonn. Both entities use the name 'Senior Experten Service – Stiftung der Deutschen Wirtschaft für internationale Zusammenarbeit' (Foundation of German Industry for International Cooperation) and both are non-profit organizations. SES GmbH is responsible for the operating business of the SES. Its executive bodies are the SES Foundation, which is its sole shareholder, and the Executive Director. The executive bodies of the SES Foundation are the Board of Directors, the Committee and the Executive Director of SES GmbH. The Board of Directors and Committee are made up of prominent representatives of the German business community. They all act in a voluntary capacity. The foundation supports the work of the limited company: it funds strategically important initiatives with revenue from its assets and conducts fund-raising activities for special projects by targeting firms and foundations with strong business links.

The SES organization is supported by Federation

of German Industries (BDI), 'Confederation of German Employers Associations (BDA), German Association of and Chambers of Industry and Commerce (DIHK) and German Confederation of Skilled Crafts (ZDH). The organization receives funding from German Federal Ministry for Economic Cooperation and Development (BMZ) and German Federal Ministry of Education and Research (BMBF).

Expert Assignments

At present, the SES has access to the knowledge and experience of over 12,000 experts from all professional spheres. Since 1983, the SES has completed more than 40,000 voluntary expert assignments in over 160 countries, with approximately a third of the placements being in Germany. We have to submit our request for expert requirement. Based on our requirement they will suggest the services of experts available with them. The identified expert will visit our institution and train the trainers in the area selected. We need to provide food accommodation and local transport. A nominal pocket money is also requested



Roman Catholic Diocese of Rottenburg-Stuttgart



Visit to ROTTENBURG DIOZESE

Dr George Thanathuparambil and Shri Luckachan Olickal also visited Rottenburg Diocese and had meeting with Mr Wolf Reichert head of the department of project financing of the Diocesan initiative Wlet Kirche (World Church). They are ready to support the project for Solar power generation. The income generated from the project should be utilized for projects on societal development, which will create employment opportunities for poor people. We need to develop a business proposal and submit.





Visit to TECHNOLOGICAL UNIVERSITY DENMARK (DTU)



Founded in 1829 with the mission of creating value for the benefit of society, Technological University Denmark (DTU) is an international elite technical university where education, scientific advice, and innovation rest on a solid foundation of world-class research. The University is at the academic and multidisciplinary forefront of the technical and the natural sciences—with new initiatives in a number of demanding engineering disciplines, including sustainable energy technology and life science. The mission of DTU is to develop and utilize the natural and technical sciences to benefit society. Accordingly, collaboration with external parties is a very important task in order to ensure the transfer of technology and knowledge to society. DTU has a long tradition of research collaborations with small and large businesses, Approved Technological Service Institutes, other research institutions, and universities in Denmark and abroad.

In DTU knowledge generated through research is

disseminated to society through the publication of the results in leading international scientific journals. This way we ensure that knowledge generated at DTU is implemented in industry. Companies can also gain access to DTU's technologies and knowledge through consulting, licensing agreements and the purchase of intellectual property.

Access to facilities at DTU

DTU's many research facilities and equipment are available to external parties - whether it is small or large businesses. The extensive collaboration between DTU and industry is, among other things, expressed through the use of the facilities at DTU. Laboratories, equipment and processing facilities, which place high demands on the resources and technological know-how, are available to external parties. The use of the facilities is often conducted as part of collaborative projects between companies and DTU or companies that pay for using the facilities.

International collaboration

International collaboration is an integrated part of DTUs activities and a prerequisite for DTUs status as an international elite university. A status that is consolidated, and continuously developed, through the work done by researchers, students and the administration. Internationalization and international collaboration is actively supported to give researchers, educators, employees and students the best possible terms entering into collaborations with leading technical universities from all around the world. DTU takes actively part in many different networks and project around the world. The aim of DTUs international collaborations is to make use of joint complementary strengths within education, innovation and research. This is achieved through the development of common practices, facilitation of external funding, international public sector consultancy, collaboration with the industry and through increased mobility among students, scientific staff and the administration.

Meeting with Dr Rajan Ambat

Dr George Thanathuparambil Director VJCET had meeting with Dr Rajan Ambat professor Mechanical engineering DTU on 7 .05.2018. Dr Rajan Ambat obtained doctorate in corrosion science and engineering from India institute of Science Bangalore India. Presently Dr Rajan Ambat is professor of corrosion and surface engineering at Technical University of Denmark. He has published more than 200 scientific publications an two patents. His research interest presently include Macro, micro- and nano-scale corrosion, electrochemistry, and degradation of engineering materials, climatic reliability of Micro-electronics, high-resolution electrochemical techniques, nano-scale functionalized surface on light alloys, and metal and human body interaction.



With Dr. Rajan Ambattu
at Technological University Denmark



Director VJCET and Dr Johnson Chittilappilly

Conclusion



Industry Institute Interaction Cell of VJCET has started functioning since 02.05.2016. In the academic year 2017-2018 the cell has made significant progress in the activities to achieve its objectives. MOUs were signed with industries from different disciplines of engineering to ensure effective collaboration between the industry and the institute to equipping students with the proper skill set to become competent industry ready engineers. An R & D project costing rupees 34 lakhs for developing lead lithium level sensor awarded to VJCET by BRNS. As part of the social commitment activities a discussion meet was organised with BARC scientist, farmers, pineapple merchants and VJCET representatives to study the application of nuclear and allied technologies in the agricultural and food processing field. The project on shelf life extension for pineapple fruit is in progress at BARC under our constant follow up. The BARC outreach programme on theme "Atomic Energy for Brighter Future" has attracted the attention of students and was appreciated. At Department level many activities such as technical talks from industrial expert, Industrial visits and internships for students etc were organised regularly.

VJCET management has taken a wise decision to depute a high level delegation to visit research centers & universities abroad and Hannover Messe. The team could visit reputed universities and research centers in Europe and the largest international industrial trade fair in the world as envisaged. The experience gained and exposure obtained to research activities, modern technologies and manufacturing processes were really inspiring and encouraging. Creating opportunities for students and faculty members to do

research, projects, higher studies, internships etc in Germany and other European countries will lead to a paradigm shift to the engineering education at VJCET. Visiting Hannover Messe was a marvelous engineering experience. Dates for Hannover Messe 2019 and 2020 have already been announced. The possibility of VJCET students and faculty members visiting the Messe in 2019 has to be explored early and planning has to be done well in advance. The visits of professors and scientists from universities abroad to VJCET to deliver lectures will be beneficial to the students and faculty. Collaboration with German industries and exploring the possibility of conducting modeling studies, engineering experiments, proto type product testing and establishing manufacturing units in India can be attempted through VDMA. Services of SEZ and SES Germany can be utilized for the benefit of institution. Solar power generation project proposal can be submitted to Rottenburg Diocese for financial support. Establishing startups in India based on German technologies through IEDC can be considered. Contacts established by the VJCET team with reputed personalities will be very useful for the college. Sustained effort and continued follow up in this area will definitely yield desired result in long run.

Acknowledgements

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