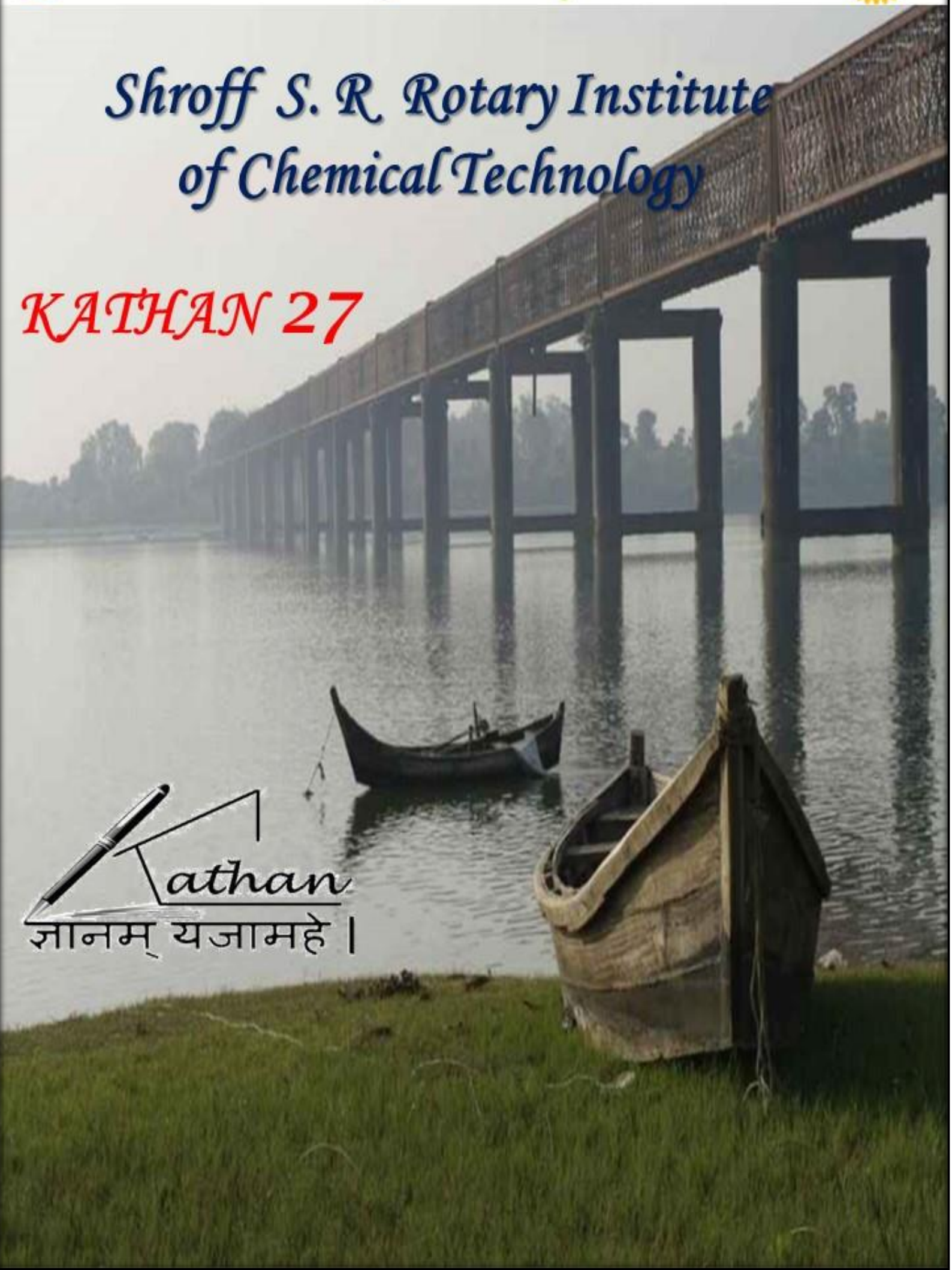
UPL SRICT Rotary

Shroff S. R. Rotary Institute of Chemical Technology

KATHAN 27



Kathan
ज्ञानम् यजामहे ।

Editorial Team

EDITORIAL BOARD MESSAGE

It is with great pride we present the 27th issue of Kathan to you. Lot has happened since last issue and SRICT has added many great achievements to its bag which is ever increasing. The biggest news of them all is that Chemical Engineering Department of SRICT is now NBA accredited. Further, SRICT was able to get recertification of 5S with flying colours. There are many other things that have happened in SRICT in past few days about which you will find inside the issue.

Now coming to the issue, the theme of current issue is Water. One of the P*anch Mahabhoot Tatva,* water is not just vital for us but for the survival of life on the earth. Yet man has, while focusing on his own development, neglected the impact on water. Today we are standing at the brink of time where our steps will not just affect the future of mankind but also the future of life itself on earth. We are already aware about acute shortage of drinkable water in many areas of the world. Unfortunately, these areas are increasing rapidly. Many places in the world have already started rationing of water to the citizens. The situation of water shortage in Indian villages is no exception. Time has come for us to take the necessary steps and at earliest. We should never forget that we are not passing our heredity to our future generations but are borrowing it from them. So our small actions are going to affect them.

Coming back to issue, kindly go through the issue and do share your feedback. We are always awaiting your responses which helps us and motivates us to give our best.

Happy reading!

Team Kathan

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PRINCIPAL'S MESSAGE

Snehal Lokhandwala

Principal

The SRICT tradition happily brings together sound academic achievement with an extensive, vibrant co-curricular programme that includes sports, literary activities and leadership training programmes. Our mission is to inculcate the love of knowledge in our students and, for this, we aim to develop the skills and demeanour of lifelong 'learning,' essential for making responsible global citizens. This will make them immensely capable of facing the future with resilience and optimism. On the deeper level, we try to instil the values of respect and trust in relationships that are the foundation of real success.

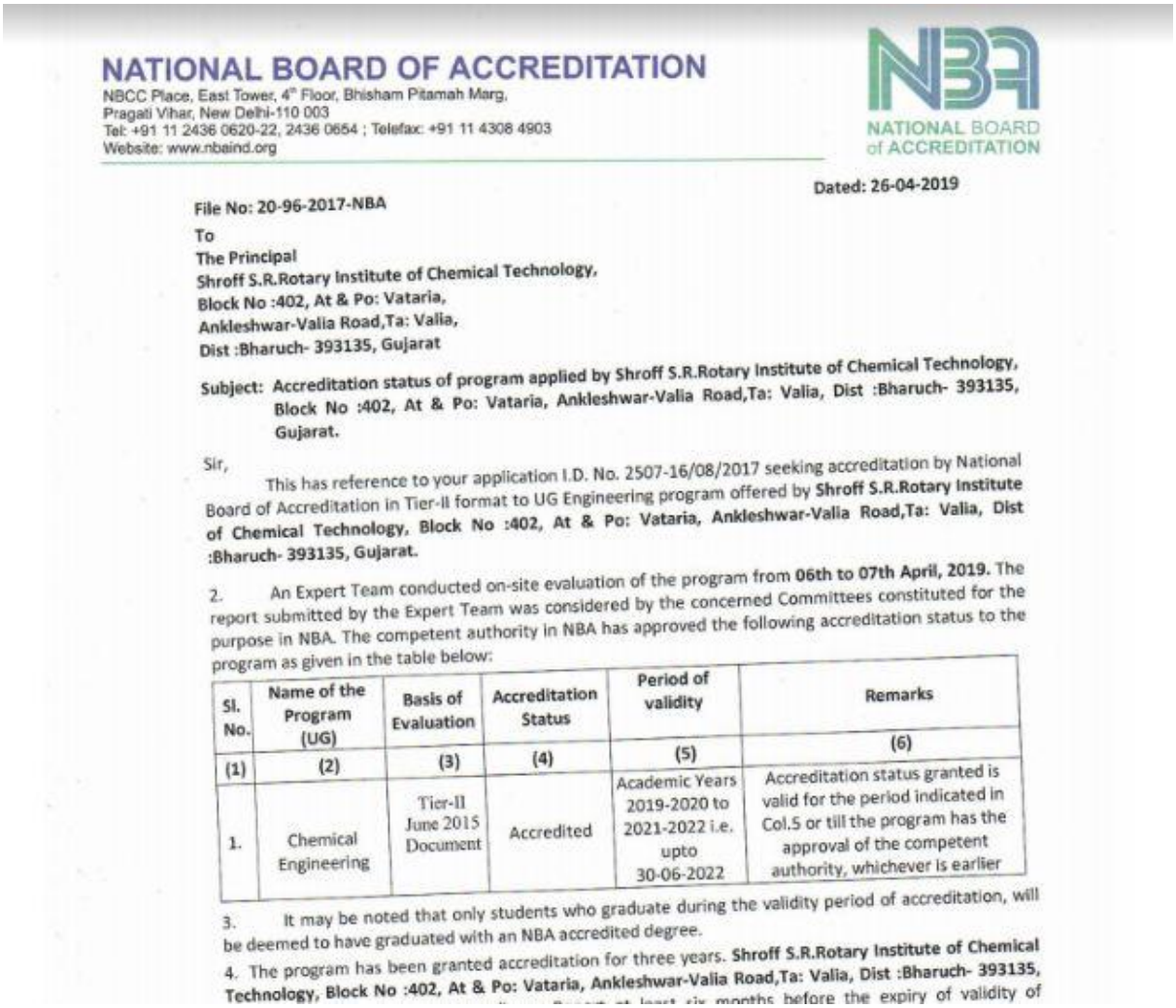
A newsletter is an effective communication tool for students, faculty members, parents and industries. Since every organization is made up of people and others are usually interested in knowing about the performance and its activities, a newsletter is certain to be a sure hit. Newsletter is typically thought of as a "student publication" and an "internal communication device," but can also be used as a tool for showcasing the attributes of students and faculty members and making society a part of development of an educational hub to make the future technocrats more meaningful and sound. Kathan is the newsletter of SRICT which has always been a source of information and knowledge building for all our readers.

This issue of Kathan is focussed on 'Water'. We need to save water to make sure that we have enough water for our future generations. Tosha Comendant is a conservation scientist who advises the WICC (The Watershed Information Center and Conservancy) Board in Napa. She says that if we don't stop wasting water, our environment now and in the future will be in big trouble. We should make sure our watersheds are protected so that they will still provide a source of water for our future generations. We need to save water by taking shorter showers, changing our lawns to drought resistant plants, and turning the water off when we are brushing our teeth. If we do these simple steps, our future generations will be thankful.

Benjamin Franklin has rightly said that "When the wells are dry, they know the worth of water".

National Board of Accreditation

SRICT is proud to announce that our UG program in chemical engineering is accredited by NBA, National Board of Accreditation for 3 years (2019-2022)



NATIONAL BOARD OF ACCREDITATION

NBCC Place, East Tower, 4th Floor, Bhisham Pitamah Marg,
Pragati Vihar, New Delhi-110 003
Tel: +91 11 2436 0620-22, 2436 0654 ; Telefax: +91 11 4308 4903
Website: www.nbaind.org

NATIONAL BOARD of ACCREDITATION

Dated: 26-04-2019

File No: 20-96-2017-NBA

To
The Principal
Shroff S.R.Rotary Institute of Chemical Technology,
Block No :402, At & Po: Vataria,
Ankleshwar-Valia Road,Ta: Valia,
Dist :Bharuch- 393135, Gujarat

Subject: Accreditation status of program applied by Shroff S.R.Rotary Institute of Chemical Technology, Block No :402, At & Po: Vataria, Ankleshwar-Valia Road,Ta: Valia, Dist :Bharuch- 393135, Gujarat.

Sir,

This has reference to your application I.D. No. 2507-16/08/2017 seeking accreditation by National Board of Accreditation in Tier-II format to UG Engineering program offered by **Shroff S.R.Rotary Institute of Chemical Technology, Block No :402, At & Po: Vataria, Ankleshwar-Valia Road,Ta: Valia, Dist :Bharuch- 393135, Gujarat.**

2. An Expert Team conducted on-site evaluation of the program from **06th to 07th April, 2019.** The report submitted by the Expert Team was considered by the concerned Committees constituted for the purpose in NBA. The competent authority in NBA has approved the following accreditation status to the program as given in the table below:

Sl. No.	Name of the Program (UG)	Basis of Evaluation	Accreditation Status	Period of validity	Remarks
(1)	(2)	(3)	(4)	(5)	(6)
1.	Chemical Engineering	Tier-II June 2015 Document	Accredited	Academic Years 2019-2020 to 2021-2022 i.e. upto 30-06-2022	Accreditation status granted is valid for the period indicated in Col.5 or till the program has the approval of the competent authority, whichever is earlier

3. It may be noted that only students who graduate during the validity period of accreditation, will be deemed to have graduated with an NBA accredited degree.

4. The program has been granted accreditation for three years. **Shroff S.R.Rotary Institute of Chemical Technology, Block No :402, At & Po: Vataria, Ankleshwar-Valia Road,Ta: Valia, Dist :Bharuch- 393135,**

Patent Granted to SRICT and ETL

As a part of research and development project sponsored by Enviro Tech Limited, Ankleshwar, a process was developed to treat laboratory wastewater to recover silver chloride and mercury sulphide. The process was applied for patent in October 2017, it was granted on 22 March 2019. Now the technology developed is ready to be used in industries. The pilot scale set up is successfully running in SRICT. Inventors of the process Shina Gautam, Alok Gautam, Department of Chemical Engineering, Shroff S R Rotary Institute of Chemical Technology.

क्रमांक : 022104226
SL No :

INTELLECTUAL PROPERTY INDIA
PATENTS | DESIGNS | TRADE MARKS
GEOGRAPHICAL INDICATIONS

सत्यमेव जयते

भारत सरकार
GOVERNMENT OF INDIA
पेटेंट कार्यालय
THE PATENT OFFICE
पेटेंट प्रमाणपत्र
PATENT CERTIFICATE
(Rule 74 Of The Patents Rules)

पेटेंट सं. / Patent No.	:	309679
आवेदन सं. / Application No.	:	201721037783
फाइल करने की तारीख / Date of Filing	:	25/10/2017
पेटेंटी / Patentee	:	1.Enviro Tech Limited 2.Shroff S.R. Rotary Institute Of Chemical Technology (SRICT)

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित PROCESS FOR RECOVERY OF SILVER CHLORIDE AND MERCURY SULPHIDE NANOPARTICLES FROM CHEMICAL OXYGEN DEMAND TEST WASTEWATER नामक आविष्कार के लिए, पेटेंट अधिनियम, १९७० के उपबंधों के अनुसार आज तारीख 25th day of October 2017 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled PROCESS FOR RECOVERY OF SILVER CHLORIDE AND MERCURY SULPHIDE NANOPARTICLES FROM CHEMICAL OXYGEN DEMAND TEST WASTEWATER as disclosed in the above mentioned application for the term of 20 years from the 25th day of October 2017 in accordance with the provisions of the Patents Act,1970.

THE PATENT OFFICE GOVT.OF INDIA

अनुदान की तारीख : 22/03/2019
Date of Grant :

पेटेंट नियंत्रक
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, **25th day of October 2019**को और उसके पश्चात प्रत्येक वर्ष मे उसी दिन देय होगी।
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on **25th day of October 2019** and on the same day in every year thereafter.

Faculty Training

Assistant Professor Nirali Tharwala attended one-week short term training program on “Waste to Energy: Fuel Cell and Electrochemical Techniques” organized at Sardar Vallabhbhai National Institute of Technology - [*SVNIT*], Surat. The program was organized from 17th to 21st June 2019.

Associate Professor Ravindra Kanawade attended Faculty Development Program on “Design Engineering” organized at Gujarat Technological University. The program was organized from 9th to 12th July 2019.

Visit to Miami University (MU), Oxford, Ohio, U.S.A.

Sanjiv Dharwadkar visited Miami University (MU), Oxford, Ohio, U.S.A. during 10th to 12th, June 2019 and interacted with MU Chemical Engineering Faculty to explore academic and research collaborations between SRICT and MU .After this visit, Professor Shashi Lalvani, chair, Chemical Engineering Department, MU remarked “We look forward to further collaboration between the two institutions”.

Expert Lectures

"Dryers for Industrial application" for students of 7th semester chemical engineering on 6th July 2019 by Dharamvirsingh, Production Engineer, Solvay Specialities India Pvt Ltd.
"Fundamentals of chemical engineering" for students of 3rd semester chemical engineering on 16th July 2019 by Saumil Shah, Senior safety officer, GNFC Bharuch.
"Process safety management" for students of 5th semester chemical engineering on 16th July 2019 by Jadish Modi, Senior safety officer, GNFC.
"Petrochemical industries- Boon to society" for students of 5th semester chemical engineering on 20th July 2019 by Sushil Kumar, Retired president, RIL.

Industrial Visits

- Solvay Specialities India Pvt. Ltd. on 2nd July 2019 by 5th Semester Students.
- Heubach Colour private Limited on 12th July 2019 by 7th Semester Students.

Technical Workshop Series- TECHWORKS 19

The Department of Electrical Engineering of Shroff S R Rotary Institute of Chemical Technology and The Institution of Engineers (India) SRICT Students' Chapter (Electrical) had organized a Fourth one day state level workshop on "Practical Demonstration of Electro-mechanical and Numerical Relays" on 22nd March 2019. Totally 60 students and Faculty members participated in the workshop.

The aim of this workshop was to make students aware of Basic & Practical approach of Power System Protection and train them so that they can be ready for industrial practical exposure. The Practical sessions were handled by Expert Faculties from Department of Electrical Engineering. Positive response was received from participants.

This State Level Workshop was successfully well organized and coordinated by Department of Electrical Engineering of SRICT and The Institution of Engineers (India) SRICT Students' Chapter (Electrical) with the full support of SRICT Management event.

Hands-On Workshop on "Making of Universal Mobile Charger"

The Shroff S R Rotary Institute of Chemical Technology, Vataria, Ankleshwar has invited students from Agasti Education, Ankleshwar for Seminars and workshops on 22/04/2019.

Under this event, The Department of Electrical Engineering, SRICT has conducted a Hands-On workshop for 11th & 12th science students on the topic "Making of a Universal Mobile Charger" under the banner of Institute of Engineer India, SRICT Student Chapter-Electrical.

Totally 27 students have participated in this workshop and undergone the theoretical concepts as well as prepared a running practical model of Universal Mobile Charger.

The entire workshop was coordinated by Hiren Jariwala (Asst. Prof.) and Krunal Shah (Asst. Prof.) from Department of Electrical Engineering, SRICT under the guidance of HOD of Electrical Engineering Praful Chudasama.

VAKTRUTVA SPARDHA SPEECH Competition under the banner of The Institution of Engineers (India), SRICT, Students' Chapter (Electrical)

The Department of Electrical Engineering of SRICT organized “VAKTRUTVA SPARDHA SPEECH" for all Electrical Engineering Students on 23/02/2019 under the banner of The Institution of Engineers (India), SRICT, Students’ Chapter (Electrical). Students from VIII sem Chauhan Parthkumar & Patel Moh Tanveer, from VI Sem Prajapati Dhaval R actively participated and gave speech on different topics. Students enjoyed the session a lot. This event was coordinated by G. Pradeepa (Asst.Prof.) & Hiren Jariwala (Asst.Prof.) under the guidance of HOD of Electrical Engineering Praful Chudasama.

Faculty Expert Talk and Workshop

Mrs.Jalpa Thakkar, Asst. Prof. Krunal Shah, Asst. Prof. from Department of Electrical Engineering has delivered an Expert talk on, "**Fundamentals of Power System Protection**" at Government Polytechnic, Valsad. The aim of the lecture was to teach concepts of power systems and its importance of protection with various conventional and numerical protection schemes. Total 45 students has attended the lecture.

- Krunal Shah, Assistant Professor, along with Final year students of batch 2016 has attended one day workshop on “Arduino” organised at S S Gandhy Government Engineering College sponsored by SSIP and Design innovation centre.

- Ankur Gheewala, Asst. Prof, has attended Faculty Development Program (FDP), Design Engineering (Level-1) from 09 July 2019 to 12 July 2019 in VGEC College Campus, Gujarat Technological University, Ahmedabad.

- Praful Chudasama, Asst. Prof., DEE has attended One day National Workshop on "Ancient Technical Education System in Present Context" organised by GTU on 29 July 2019.

DEE Meeting with Mentor

The Department of Electrical Engineering Faculties and Staff members had a mentor meeting with S.M.Takalkar, Director, Takalkar Power Engineering Consultancy Pvt. Ltd. Vadodara on 20th Feb 2019. The discussion took place regarding academic improvements, students summer training program, Refresher Course, one-week short term training program for faculties of Engineering colleges, Conducting Mock Interviews for current VIII sem EE students and students' placements.

Final Year Project Fair

The Department of Electrical Engineering had organized a Final Year project fair of VIII sem Electrical Engineering on 12/4/2019. Total 08 projects were demonstrated by final year students. They have displayed the poster of their project and working models to make it easily understandable. Prashant A Kalivada, Manager Electrical from UPL 1, Jhagadia and K S Shah, Chief Manager – Electrical, from GNFC Limited, Bharuch to evaluate and give necessary suggestions to the students. An Interaction

session was organized at the end of project fair. Experts from industry have shared the experiences with faculty members and students. They discussed the important stages of project development and discussed the current trend in Electrical. This event was coordinated by Project Coordinators Mrs. G.Pradeepa & Hiren Jariwala under the guidance of HOD of Electrical Engineering Praful Chudasama.

Design Engineering Project Fair

The Department of Electrical Engineering had organized a project fair on Design Engineering subject of VI sem Electrical Engineering on 12/4/2019. The students of VI sem EE are actively participated and the jury panel member for this activity is Prashant A Kalivada, Manager Electrical from UPL 1, Jhagadia and K S Shah, Chief Manager – Electrical, from GNFC Limited, Bharuch Totally Three Groups displayed their charts for this activity. The panel member highly appreciated the student's efforts in this activity and motivated them. This event was coordinated by DE Coordinators G. Pradeepa & Krunal Shah under the guidance of HOD of Electrical Engineering Praful Chudasama.

"**ABHYUDAY-2019**"

SRICT has always believed in commending the students to inspire them to scale greater heights. Academic award ceremony of Batch 2015 "**ABHYUDAY-2019** " was held on 5th July 2019 at Diamond theater, Ankleshwar to honor the shiny stars of semester VIII who showcased with their outstanding performance in GTU Summer 2019 Examination and also to award **GOLD Medals** to the student of **CE Yash Goel** and students of **EST Shah Akshita Kapil & Limbachiya Upasana Kiritkumar** who scored a perfect SPI 10 at University.

The Chairperson, ARES, Sandra Shroff, Vice Chairman Ashok Panjwani, Treasurer, ARES Kishor Surti, I/C Principal, SRICT Snehal Lokhandwala graced the occasion and presented the Provisional Degree certificate along with cash prizes and certificate of excellence to the students for their meritorious performance in the presence of their parents & guests from Rotary &Industries.

Total cash prize worth of Rs. 12, 79,000/- have been rewarded to 162 UG top scorer students by ARES Management of SRICT and Gold Medal to Yash Goel, Shah Akshita Kapil & Limbachiya Upasana Kiritkumar sponsored by UPL. Totally 223 students are awarded with Provisional Degree Certificate.

Hiren Jariwala, Coordinator, Department of Electrical Engg proposed the vote of thanks. The program was organized by Department of Electrical Engineering under the guidance of Jalpa Thakkar, HOD- Department of Electrical Engineering.

DESIGN ENGINEERING 2A – BATCH 2016

Electrical Hybrid Vehicle - Green and renewable energy is interest of many researchers, governments and public due to upraising environmental impacts of greenhouse gas emission and increasing costs of the energy from fossil sources. In present electricity is one of the major problems. Electricity cannot be provided to population as per the requirement due to continuous increase in population and fix no. of power plants or say due to load factor. Keeping these problems in focus this paper contains free space multipurpose work for electricity generation i.e. with the road and other non-conventional energy sources. Paper tries to show how energy can produced using the road and transport with different -2 ways and their storage. The produced power can be used for the lamps near the road and that will be a great boon for the rural villages too. Four ways of electricity generation (wind, solar, breaker & pressure) and automation technology is discussed. Automation technology and ladder logic programming also discussed in the paper for the cleaning process of solar panels. The students who worked on this project are Chauhan Sachin, Patel Faiyaz, Patel Vishal, Raval Jasavant& Solanki Vishvajitsinh

Wind Mill Power Generation - This project proposes the development of a horizontal wind turbine to be installed at the edge of a building's roof. The purpose of this device is to mitigate the effects of the pressure gradient produced by the flow of air over a roof at elevated speeds during a hurricane. Furthermore, this proposed design produces electricity by harvesting the kinetic energy carried by the fluid during the hurricane as well as under normal weather conditions. The students who worked on this project are Meghrajsinh Parmar, Riya Patel, Vikash Kumar, Satish Gamit & Ravijitsinh Vashi

Timer Based Wall Socket - A TIME switch (also called a TIMER switch or simply TIMER) is a TIMER that operates an ELECTRIC switch controlled by the timing mechanism. The switch may be connected to an ELECTRIC circuit operating from MAINS POWER, including via a relay or contactor; or low voltage, including battery-operated equipment in vehicles. A time switch (also called a timer switch, or simply timer) The timer that operates an electric switch controlled by the timing mechanism. The switch may be connected to an electric circuit operating from mains power, including via a relay or contactor; or low voltage, including battery-operated equipment in vehicles. It may be built into power circuits (as with a central heating or water heater timer), plugged into a wall outlet with equipment plugged into the timer instead of directly into the power point; or built into equipment as, for example, a sleep timer that turns off a television receiver after a set period. The students who worked on this project are Pawar Palak Anil, Bhatt Nirav Dilipkumar, Patel Ravi Rajeshbhai, Prajapati Dhaval R & Vansiya Divyarajsinh

Industrial Training details of students" – Batch 2016

Sl.No	Name of the Student	Name of the company	Faculty Mentor
1	Bhatt Nirav Dilipkumar	UPL -3	Hiren Jariwala
2	Chauhan Sachin		
3	Patel Faiyaz		
4	Patel Riyaben Khushalbhai	Gujarat Gaurdian Pvt Ltd.	Jignesh Joshi
5	Pawar Palak		
6	Vikas Kumar	Gujarat Borosil	Ankur Gheewala
7	Raval Jasavant	Solvay Specialities India Private Limited	Sourav Choubey
8	Solanki Vishwajit	Cadila Healthcare	Krunal Shah
9	Divyarajsinh Vansiya	Huebach Colors Pvt Ltd.	Krunal Shah
10	Vishal Patel	TPEC	Richa Dubey
11	Parmar Meghrajsinh R		
12	Gamit Satish	BEIL	G.Pradeepa
13	Prajapati Dhaval R		
14	Patel Ravi Rajeshbhai		

The Industrial Summer Training Review was completed on12th July 2019.

Expert Lectures:

- "Basics of Power Systems" for 6th Semester EE students on 19thFeburary 2019 by Muralikrishnan, Senior General Manager - Electrical, Brakes India Pvt Ltd., Jhagadia.
- "Industrial Electrical Safety" for 6th Semester EE students on 27thFeburary 2019 by Shiladitya Sen, Ex. Senior General Manager - Electrical, Reliance Industries Limited, Dahej.
- "Transformer Maintenance" for 4th Semester EE students on 29th March 2019 by Krishnamurthy, Manager-Plant Engineering, EWAC Alloys Ltd, Ankleshwar,
- "Industry Safety and Best Practice" for 6th Semester EE students on 30th March 2019 by Devdatt Purohit, Head - Safety, Reliance Industries Limited, Dahej.
- "Factory and Onsite Testing of Distribution Transformers" for 8th Semester EE students on 05th April 2019 by Panchal Vishal, Project Executive, UPL -5, Jhagadia.
- "Personality skill development as an Engineer" for 4th Semester EE students on 06th April 2019 by Jaimin Trivedi, DEO-HR, CLP INDIA Limited, Paguthan.

Expert Lecture on "Industrial Electrification" under MOU

- The Department of Electrical Engineering of SRICT and The Institution of Engineers (India), SRICT, Students' Chapter (Electrical) jointly organized Expert Lecture on "Industrial Electrification" for 4th 6th & 8th Semester EE students on 20th Feb 2019. Expert lecture was delivered by S M Takalkar, Director, TPEC. He has discussed about Power Network block diagram for Small scale, Medium &Large-scale Industries, Selection of plot for installations of receiving substation, Busbar and equipment sizing etc.

Industrial Visits:

- CLP India ltd, Bharuch on 27th February 2019 by 4thSem EE students.
- KOSAMBA 400 kV SUBSTATION, Kosamba on 05th March 2019 by 8thSem EE students.
- AGNUS Lighting System Pvt Ltd, GIDC, Ankleshwar on 06th March 2019 by 6thsem EE students.
- Trimurti Transformer, GIDC, Ankleshwar on 3rd April 2019 by 4thSem EE students.
- Indobaijin Chemicals Pvt Ltd, Dahej on 09th April 2019 by 6thsem EE students.

Peer Learning Initiative Felicitation:

Department of Mechanical Engineering, SRICT, Vataria organized felicitation program for PEER LEARNERS on 2nd July 2019. Vice chairman SRICT Ashok Panjwani, Principal Snehal Lokhandwala, HOD MED Dr. Hemant Gupta and Event coordinator Satish Kumar Verma were present during the program to felicitate the students. 67 students from all departments were awarded with total price money of Rs. 38,600 for conducting the PLI (PEER LEARNING INITIATIVE) lecture in Academic Session December 2018 - July 2019. Positive feedbacks were given by the students

to carry peer learning initiative activity by college.

FESTO Mobile Exhibition Vehicle VISIT in SRICT, Ankleshwar

Department of Mechanical Engineering, SRICT, Vataria arranged an Exhibition of FESTO Mobile Vehicle for demonstration of Automatic Pneumatic controlled tools and devices on 09-07-2019. Students of 7th, 5th and 3rd Semester along with faculties from Mechanical Engineering Department visited the mobile vehicle and acquainted of different Automatic Pneumatic controlled devices like Pneumatic controlled valves, Electronic controllers, Robotic arms and Grippers. Principal Dr. Snehal Lokhandwala, HOD MED Hemant Gupta, Asst. Prof. MED Satish Verma, Mitesh Gohil and other interdisciplinary department faculties were also present during the demonstration.

Expert Lectures

- "Achieve What You Want" for 7th and 5th semester ME students on 15th July 2019 by Bhavin Shah, Motivational Speaker and Corporate Trainer, I am Possible Solutions, Vadodara
- "Safety Mission" for 7th and 5th semester ME students on 18th July 2019 by Viral Prajapati, Volunteer, Safety Soldiers, Bharuch
- "Introduction about types of bearings and its applications" for 5th semester ME students on 20th July 2019 by Dharmesh Pancholi, Engineer, ABC Bearings, Vadodara
- "Introduction about types of bearings and its applications" for 5th semester ME students on 20th July 2019 by Dharmesh Pancholi, Engineer, ABC Bearings, Vadodara
- "Introduction about types of bearings and its applications" for 5th semester ME students on 20th July 2019 by Dharmesh Pancholi, Engineer, ABC Bearings, Vadodara

- "Practical Aspects of Bearings" for 7th semester ME students on 20th July 2019 by Dharmesh Pancholi, Engineer, ABC Bearings, Vadodara
- "Ansys and its applications to the industries" for 7th semester ME students on 24th July 2019 by Krunal Patel, Head and Technical Engineer, Flexustech, Vadodara

Industrial Visits

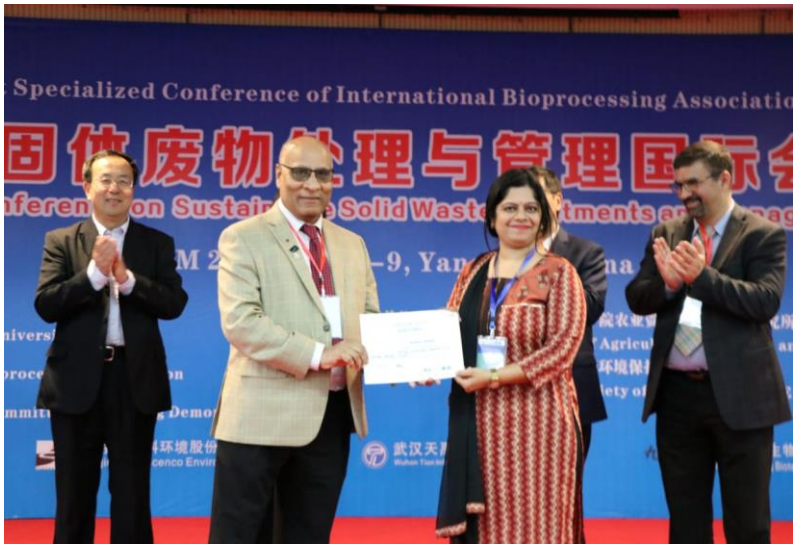
- Dudhdhra Dairy, Bharuch on 17th July 2019 by 7th semester ME students
- Wilkin Engineering, Ankleshwar on 24th July 2019 by 5th Semester ME students

MOU with CM ACADEMY

SRICT signed MOU with CHANDERBALA MODI ACADEMY (CM ACADEMY). The MOU will help both the parties in terms of admissions, knowledge sharing, school visits, infrastructure usage etc. MOU was signed by Ashok Panjwani (Vice chairman, SRICT) and Amar Srivastava (Principal, CMA) on 20th May 2019.

Award for best paper

Pratibha Gautam of Department of Environmental Science and Technology received best paper award at International Conference "SWTM-19" organized during 6-9 May 2019 at Yangling, China. She presented poster at International Conference "SWTM-19" organized during 6-9 May 2019 at Yangling.



Technical Session

Pratibha Gautam from Department of Environmental science and Technology delivered a technical session on topic "Water Sampling and Preservation" in Training Program on 'Effluent Treatment Plant Operation and Maintenance' organized by Gujarat Knowledge Society. The training was given to Faculties of Diploma Engineering from Gujarat.

Brush Up "Fundamentals to application on Environmental Engineering"

Department of Environmental science and Technology organized 2 day refresher course on fundamental application on Environmental engineering on 18th and 20th of May 2019.

Environment Day Celebrations

SRICT along with Gujarat Pollution Control Board Celebrated World Environment Day on 7th June 2019 Organized by Department of Environmental Science and Technology on the theme "Beat Air Pollution". Environment Day celebration gave realization to the alarming state of air due to pollution through presentation and posters which were presented by students of DEST. The presence of guests from GFL, faculties and students enhanced the program.

Industrial Visit

Department of Environmental Science and Technology had conducted industrial visit for the students of 7th semester to Amul Dairy Anand on 11th July 2019 which was coordinated by Mukesh Goel and Vishakha Patel. During visit students got exposure of manufacturing process of Amul Dairy along with its Effluent Treatment Plant (ETP) followed by manufacturing process of Amul Chocolate Plant at Mogar, Anand.

Faculty Interaction with Mentor N.K.Verma

Department of Environmental science and Technology had conducted Faculty interaction with mentor N. K. VERMA on 23rd July 2019 where faculties interacted with him regarding research and different projects to be incorporated thereby leading to development in the specific field.

Nature Club Activity Poster Presentation

MIND MAPPING COMPETITION on 20th July Theme: "Water crisis and innovative ideas to deal with it (Community level)". Active participation of the students from all department 20 innovative ideas in the form of posters were presented .Judges of the event were Omprakash Maharwad, HOD (DCT) and Jalpa Thakkar (DEE).The event was coordinated by Bhasha Mehta under the guidance of Pratibha Gautam

Orientation Program for Sem 3, 5 And7 EST students

Orientation program for SEM-3, 5 and7 EST students was done on 06/07/2019. Students were made aware about the importance of attendance, Extra-curricular activities, Roles and responsibilities of Class Representatives. They were also made aware about vision, mission, NBA accreditation process and its benefits. Orientation was carried out by Pratibha Gautham, Snehal Lokhandwala and Manoj Kumar.

REVA FEST 2019 (The Annual Function of SRICT):

Shroff S.R. Rotary Institute of Chemical Technology celebrated 7th annual cultural event along with Department of Chemical Technology on 01st April 2019 at AIA Hall, Ankleshwar. It was presided by the Guest of Honour K. Srivatsan, Director - Subhasri Pigments Pvt., Ltd. Ankleshwar and Sunil Parekh, Strategic Advisor, Zydus Cadila Healthcare Ltd, Jubilant Energy, Ahmedabad was the esteemed Chief Guest. Among other dignitaries present were Dilip Udas, Director - Ultra conserve Pvt Ltd, Pune; Technical Committee Member, SRICT, Sandra Shroff (Chairman, SRICT), Ashok Panjwani (Vice Chairman, SRICT), Angiras Shukla (Secretary, SRICT), Snehal Lokhandwala (Principal, SRICT) and Head of the Departments and Faculties of SRICT.

The programme started with the digital inauguration of the event by all the guests. Welcome speech was delivered by Principal Snehal Lokhandwala in which he highlighted the achievements of the institute, students and faculty members during last academic year. He also motivated students to pursue excellence in all endeavours. After welcome dance performed by students guest of Honour and Chief Guest of the function elucidated the function with their speech. Thereafter, cultural events were performed by students diligently. Next course of performances continued with a group dance. Various events in the field of dramatics, dance, and singing were performed by students. After Blessing from our entire guest. Best Student Awards were given away to the deserving and competent students for their performance throughout their entire academic sessions. The function of annual day was accomplished by vote of thanks given by Harshal Patil, Event Coordinator. The event successfully ended with the 'National Anthem' in chorus.

First Year Induction & 3rd sem Orientation Programme:

Department faculty interacted with CT First year students. Omprakash K Mahadwad, Professor, HOD welcomed the students and introduced the faculty members of CT department before them. He also explained various Department Portfolios to the students and narrated about the culture of the institution in order to help them in building bonds with other students and faculty members and made the students feel comfortable in the new environment.

An orientation programme for 3rd Semester Chemical Technology students conducted on 02 July 2019. Omprakash K. Mahadwad, Head, CT department offered the inaugurating speech before the students where he clarified the doubts regarding the four professional specialized elective courses

- Pharmaceutical Technology,
- Dyes & Pigment Technology,
- Polymer & Rubber Technology and
- Glass & Ceramic Technology

That the department could offer them. He added that each department elective is equally relevant and important, and they have their own places both in the domain of corporate worlds and in the arena of higher education. The Department experts

presented about the scope and prospect of individual department. The students will choose their preferences by the following day.

Indian Rubber Institute (IRI) Crash Course:

12th National level Crash Course in Rubber Technology being conducted by IRI Mumbai for supporting the crash course activities of IRI. Monika Patel, Assistant Professor from Polymer & Rubber Technology and the students Patel Bharvee, Rana Dhruvkumar VII semester from Polymer & Rubber Technology has taking the course of PGD-IRI & DIRI from the Department. On behalf of this course regularly they are attending the lectures at Mumbai branch and given the Postgraduate and diploma Examination at IRI, Mysore Branch.

The IRI Course is intended to develop the participants to an acceptable level of technical competence. The course content is designed such that in addition to the development of the technical knowledge and skills required for enhanced job performance, it ensures that the wider context of the company / organization is appreciated and that preparations are laid for taking up appropriate managerial responsibilities at a subsequent stage in career.

Expert Lectures:

1. Being Future Ready" for CT Students on 18th July 2019 by Sanjeeb Lahiri, Corporate Head-HR, GRP Ltd., Ankleshwar.
2. Requirements of Chemical Industry/Research Institute from fresh Graduates" for 7th Semester CT students on 22nd July 2019 by Dilip G. Udas, Director, Ultraconserve Pvt. Ltd. Pune & Adjunct Professor – ICT Mumbai, Mentor-Chemical Technology.
3. "Toxicity of Chemicals and Working Safety in a Chemical Industry" for 5th Semester Students on 22nd July 2019 by Dilip G. Udas, Director, Ultraconserve Pvt. Ltd. Pune.

Enviro Technology Ltd Visit for Practical Exposure at Microbiology:

Students of 5th Semester CT-Pharmaceutical Technology along with the faculty Gayathri Banda has visited Enviro Technology Limited, GIDC for Microbiology practical exposure to help the students to bridge the gap between classroom and the real working methodology in the Laboratory. They have seen the various Instruments

and their working principles and observed expertized practical sessions of Microbiology.

Poster Presentation competition on "Gandhiji & Simple life"

Department of CT organized a poster competition on "Gandhiji & Simple life" as a part of the ongoing Gandhi Jayanthi celebration as per GTU circular. The focused team of faculty members and student coordinators contributed whole heartedly to turn the event into a grand success. Several posters highlighted various aspects of the lifestyle of simplicity and multifarious activities of Gandhiji. Gandhiji believed in simple living and high thinking with lifestyle based on truth and simplicity. The competition which was held on 17th July, 2019 in Seminar Hall-3, was open for all the CT students. Total 53 students under 11 groups across all the semesters actively participated in the competition.

Mentoring with Dilip Udas (CT-Mentor)

Dilip Udas (CT- Mentor) Director- Ultra conserve Pvt Ltd., Pune visited the SRICT campus on 23rd July 2019. He conducted separate meetings with concerned faculty members of each department of Chemical technology regarding the revision and modification of syllabus. In addition, he suggested some reference books for the students of Pharmaceutical technology. He offered relevant inputs for the up gradation and restructuring of syllabus and he advised the faculty members for the recapitulation of the last semester syllabus in order to maintain the continuity of the teaching learning process. He suggested to expose the students into introductory level of all the available four department electives which is going for enriching their knowledge level.

First Year Induction Programme:

Department faculty interacted with CT First year students. Omprakash K Mahadwad, Professor, HOD welcomed the students and introduced the faculty members of CT department before them. He also explained various Department Portfolios to the students and narrated about the culture of the institution in order to help them in building bonds with other students and faculty members and made the students feel comfortable in the new environment.

Industrial Visits:

- Skylark Pharmaceuticals Pvt Ltd., GIDC, Ankleshwar on 12th July 2019 by 7th Semester Pharmaceutical technology students
- Aarti Industries, Vapi on 23rd July 2019 by 7th & 5th Semester Pharmaceutical technology students
- Skylark Pharmaceuticals Pvt Ltd., GIDC, Ankleshwar on 24/07/2019 by 5th and 3rd Semester Pharmaceutical technology students
- Piramal Glass Ltd., Kosamba on 25/07/2019 by Glass &Ceramic Technology students

Lakshya-A step towards success

"Opportunities Don't Happen, You Create Them," believing the same our career guide and mentor Apoorva Raval Shah, talked to the students and guardians to help them take the right decision regarding their future career. The program was organized by SRICT, on 19th May, 2019 at Childrens' Diamond Theatre, GIDC, Ankleshwar. Huge gathering from Ankleshwar, Bharuch and nearby region attended the program where they cleared their career selection doubts. The audience enjoyed the program and highly appreciated the efforts taken by SRICT. The program was co-ordinated by Purvi Naik and Sanjiv Dharwadkar.

5S Re-certification:

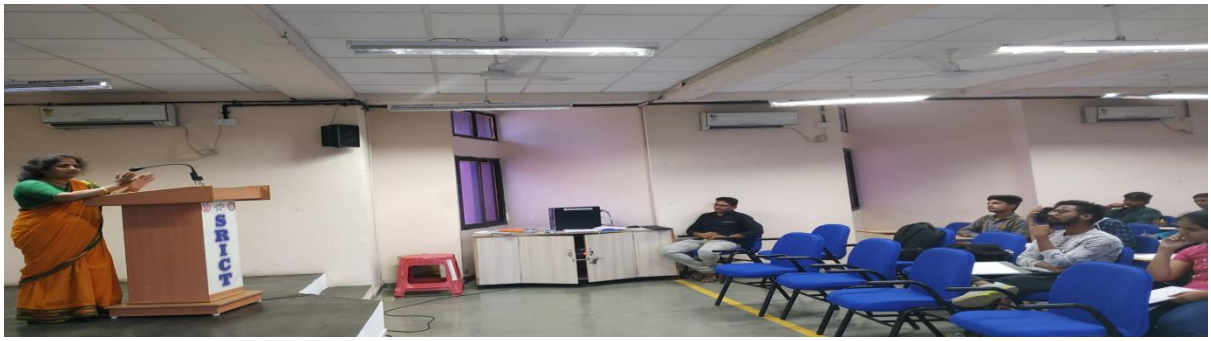
SRICT has been re-certified for FIVE S valid till 31-7-22.Certificate was handed over to SRICT by D K Srivastava, Executive Director QCFI, and Head Quarter. Auditors D K Srivastava and Ms. Vaishali Bhagvat has appreciated SRICT students and staff for their active involvement and innovative FIVE S practices. Vijay Asar, Chairman QCFI Ankleshwar has congratulated all members of SRICT during closing meeting.

“Sahityam- Reality Meets Fantasy”-Literary club & Book lovers’ forum

The inauguration of the Literary Club and the Book lovers’ forum was held on 17th July 2019. Principal Snehal Lokhandwala addressed the students and welcomed them to the forum. The motive of this initiative is to instil the joy of reading in the

students and rekindle the same in those who have lost touch with their favourite hobby. The first book review was on ‘Leila’ by Ashutosh Upadhyay (CT-5).Written by Prayag Akbar, ‘Leila’ is about inter caste relationships and also highlighted the significance of water as an element that purifies man of all his worldly smudge and stain. Next was Chetna Verma (CE-5) who recited Kabir’s couplets and shared their spiritual message and worldly wisdom. Then we had a poem recitation ‘Home they brought her warrior dead’ by Sakshi Jain (CE-3).The poem was about a soldier’s wife who was shocked and did not remember to cry on her irreparable loss. This was followed by a Gujarati folk song sung by ‘Kasumbi no Rang’ by Vanshika Rana.(EST-5). It is written by Zaverchand Meghani. The club was co-ordinated by Vinitha Vakkayil.

Expert Lecture for semester 2 students:



An expert lecture was arranged for Semester 2 students of CE, CT, EST, ME &EE on 4th May, 2019. Bharti Patil, Site Head, Quality, Sanofi Pharmaceuticals, Ankleswar spoke on “Quality: a priority in Industry”. The lecture was organized by Vinitha Vakkayil,

Faculty Development Programme

A three-day-faculty development programme on ‘Introduction to Induction of 1st year BE students’ was organized by AICTE and held at Birla Viswakarma Mahavidyalaya, Anand. Nikhil Parekh and Vinitha Vakkayil from Mathematics, Science and Humanities Department attended the FDP from 23rd June to 25th June.

Orientation Program for sem1 BE students- Shubhagman

Subhagman- the orientation program for sem1 BE students was organised by MSH department, on 23/07/19. The program was an ice breaker for the semester 1 students and brought them in line with the academic culture of SRICT. The program was graced with the presence of Bavanji Vekariya, Site Head, Covestro GIDC Ankleswar as chief guest, Kishore Surti, Treasurer ARES, Snehal Lokhandwala, Principal of SRICT and Purvi Naik HOD of MSH Department .The program was organized in a way to make the transition of each student from school to a professional back drop, pleasant and cheerful. Our Principal, Snehal Lokhandwala welcomed the students with his speech. The freshers were very enthusiastic, shared their thoughts and expressed their thanks for organizing such a program where they got to know each other, their faculty members and various departments as well. The Chief guest Bavanji Vekariya, motivated the students with his experience and shared with them his memories of college days. Purvi Naik encouraged the students to fly high and achieve their aspirations. As a token of love from SRICT management every student was felicitated with a college bag.

Expert Lectures during Induction Programme

The Department of Mathematics, Science and Humanity of SRICT organized Expert Lectures on "Challenges and Beyond", "Time Management"& "Goal Setting" for the 1st Semester students as a part of Induction Programme on 24th ,25th& 26th July, 2019. The lectures were delivered by expert trainers from JCI, Vadodara like, Vijay Parmar Sneha Sukhadia and Jyoti Maru,

Vijay Parmar explained the possible challenges in student life are and how to overcome them. Parmar also spoke of getting rid of bad habits and being focused in life. He gave personal examples to motivate the students. Sneha Sukhadia explained time management and its significance by taking number of real life examples. Sneha also emphasized that to fulfill one's dream, one should have efficient time management. Jyoti Maru explained what 'goal' can be and how it can be achieved. She also emphasized that setting one's life *goal* is one of the most life-changing thing that anyone can do**.** A goal is a thought with commitment to make it real. During the process of *goal* setting one has to answer one of the most profound question: What do I want from my life? The lecture series was coordinated by Nikhil Parekh, Assistant Professor, MSH Dept.

Industrial Visits

Department of Mathematics, Science & Humanities organised an Industrial Visit for the students of 1st Semester of Environmental Science and Technology, Electrical Engineering and Chemical Technology at ETL, Ankleshwar on 25th July 2019 as a part of Induction Program. Students were exposed to how the effluent from different factories are collected in ETL and then treated further to reduce its hardness and toxicity so that it can be disposed as per the norms of GPCB. Further the students visited secondary and tertiary levels and also the sludge removal plants. It was an informative, interesting and a successful visit.

Department of Mathematics, Science & Humanities organised another Industrial Visit for the students of 1st Semester of Environmental Science and Technology, Electrical Engineering and Chemical Technology at Bharuch Enviro Infrastructure Ltd (BEIL) on 26th July 2019 as a part of Induction Program. Students were exposed to landfill site, Incinerator and different processes involved in it. It was informative as well as interesting visit.

UPL

SRICT

Rotary Ankleshwar

Shroff S.R. Rotary Institute of Chemical Technology

B.E. 8th Semester Result of GTU Summer 2019 Exam

Congratulations Shining Stars of Bachelor of Engineering

9727745875,76 adm@srict.in www.srict.in /srict /srict_official /srictindia

UPL

SRICT

Rotary Ankleshwar

B.E. 6th Semester Result of GTU Summer 2019 Exam

Congratulations GTU Rankers

YUVRAJ SURMA
C.T.
9.85 : SPI
1st in GTU (9.92 : CGPA)
2nd in GTU (9.67 : CPI)
8th in GTU (9.85 : SPI)

BANSARI SHAH
E.S.T.
9.70 : SPI
3rd in GTU (9.85 : CGPA)

PUNIT PATEL
C.T.
9.52 : SPI
6st in GTU (9.75 : CGPA)

NEEL PATEL
C.E.
9.48 : SPI
7th in GTU (9.61 : CPI)

DIRGHAYU PATEL
C.E.
9.71 : SPI
8th in CE-GTU (9.27 : CPI)

KARTIK CHADDARWALA
C.E.
9.81 : SPI
9th in CE-GTU (9.23 : CPI)

ABHISHEK SINGH
C.E.
9.71 : SPI
10th in CE-GTU (9.22 : CPI)

Shroff S.R. Rotary Institute of Chemical Technology

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VARIABLE ELECTRO PRECIPITATOR (VEP) FOR WASTEWATER REMEDIATION

[GAYATHRI BANDA-ASSISTANT PROFESSOR-CT]

The process is one of the most effective and affordable methods of water treatment. One instance of the tech, developed and trademarked by F&T water solutions, does a particularly good job for producing clean drinking water trough electrocoagulation, the Variable Electro Precipitator can remove many of the contaminants in water that simple filtration cannot. Unlike other methods of electrocoagulation, the Variable Electro Precipitator allows for a much more thorough process, guaranteeing the cleanliness of the water, plus, the low cost and customizable setting allow it to be used in different climates and environments, further cementing it as a good move for countries in need.

Electrocoagulation (EC), the passing of electrical current through water, has proven very effective in the removal of contaminants from water. Electrocoagulation systems have been in existence for many years (Dieterich, patented 1906), using a variety of anode and cathode geometries, including plates, balls, fluidized bed spheres, wire mesh, rods, and tubes. F&T Water Solutions technology has taken a quantum leap in refining the EC process to increase removal rates and to lower capital and operating costs. “The electrocoagulation process…is based on valid scientific principles involving responses of water contaminants to strong electric fields, currents, and electrically induced oxidation and reduction reactions. Depending on the solution matrix, this process is able to take out over 99 percent of some heavy metal cations and also appears to be able to disrupt cell wall or cell membrane of microorganisms in the water. It is also able to precipitate charged colloids and remove significant amounts of other ions, colloids, and emulsions. When the system is in place, the operating costs including electric power, replacement of electrodes, pump maintenance, and labour can be less than $1 per thousand gallons for many applications. Potential applications to agriculture and quality of rural life include removal of pathogens and heavy metals from drinking water and decontamination of food processing wash waters.”

Coagulation is one of the most important physiochemical operations used in water treatment. This is a process used to cause the destabilization and aggregation of smaller particles into larger particles. Water contaminants such as ions (heavy metals) and colloids (organics and inorganics) are primarily held in solution by electrical charges. Schulze, in 1882, showed that colloidal systems could be destabilized by the addition of ions having a charge opposite to that of the colloid (Benefield et al., 1982). The destabilized colloids can be aggregated and subsequently removed by sedimentation and/or filtration.

PORTABLE WATER FILTER

Think if we could get pure drinking water everywhere, what if we could carry a filter along with us everywhere?

Niranjan Karagi, engineering student founder of Nirnal made a potable filter that could easily fit on drinking bottle and will serve the purpose of filter. The most important part of this project was to provide clean drinking water to everyone. That could only be achieved if the cost of filter is less. He tried on different filter membrane, unique design etc. Finally, all the hard work put into the prototype paid off. An approval was given by the Food Divisional Officer stating that the filter could purify up to 100 litres of water. He created a filter that would cost only 20 rupees per unit.

This device has a porous housing containing activated carbon, ultra-filtration & other filter materials (such as polypropylene cotton, filter paper, colloidal silver etc.) in it, which device can be attached and removed from a water bottle as a unit. The portable water filter device is fluid-tightly attached to the bottleneck such that water does not pass through the bottleneck. This portable water filter device is designed to in any PET plastic water bottle, generally available. Water is filtered when pressure generated by squeezing the bottle forces from the bottle cavity through the filter along an axial filtering flow path, designed for removal of a varieties of biological, organic or inorganic contaminants and drinkable filtered water comes out through a spout.

The device is expected to purify water up to 100 liters, after which point, the filter water will stop coming through the spout. Easy and impactful drinking solutions.

RAIN WATER HARVESTING AT SRICT

ABSTRACT

Rain water harvesting is the need of the hour(RWH), Issues and challenges related to rainwater harvesting system have been discussed so far, But Shroff SR Rotary Institute of Chemical Technology made it possible by its constant efforts towards the sustainability to highlight issues such as benefit of RWH system, design consideration such as optimum tank size, efficiency of RWH system, water quality related issues and available technologies for disinfection and filtration of rainwater, economic consideration.

KEY WORDS: Rainwater harvesting at SRICT; rooftop rainwater harvesting, design, water quality, economic benefits

INTRODUCTION

Rainwater harvesting is collection and storage of rainwater that runs off from roof tops, parks, roads, open grounds, etc. This water run off can be either stored or recharged into the ground water. Rainwater harvesting system is a sustainability development terms of flooding, ponding etc. But also helps to augment ground water table.

Rainwater harvesting (RWH) is increasingly becoming an integral part of the sustainable water management toolkit. It is a technology where surface water runoff is effectively/ collected during the period when enough rainfall occurs. Rainwater can be collected and stored from rooftops, land surfaces or rock catchments using simple techniques such as natural or artificial reservoir, in SRICT campus it is stored in underground tanks. Such technologies are very important for a country like India where effective rainfall is available only for 3-4 months of the year during monsoon period.

Nowadays Government is actively playing a major role in water conservation through RWH, National Green Tribunal (NGT) had made it compulsory for all Government buildings and various Ministries are formed the conservation of water such as Jal Sanchay (water conservation).

BENEFITS OF RWH

The main advantage of RWH is to provide water right near the campus. Harvested rainwater is renewable source of clean water which can be used for domestic purposes, garden watering and small-scale productive activities. It also contributes to reducing flood risk and the load on sewer system.

RWH improves infiltration of rainwater & reduces wastage of runoffs.

RWH improves ground water level & quality.

The greater attraction of a rainwater harvesting system is the low cost, accessibility and easy maintenance at campus level. Though the capital costs are high but neither operation nor maintenance usually involves significant expenditure. Rainwater harvesting seems to be beneficial method for minimizing water scarcity in developing countries.

DESIGN

When the rainy season starts, water discharges from terrace. After this the water accumulated on the terrace is cleaned to be released into the underground reservoir tank. A well-developed inverted u-shaped pipe system which allows the water to properly discharge into the underground reservoir tank.

Area of campus roof : 17000 sq. meter, area of hostel roof : 1000 sq. meter, total no. of boreholes : 4 (near to play ground), collection tank : 1 (near to workshop), depth of borehole : 190 ft., type of borehole pipe : Perforated type, size of pipe : 200 mm diameter. The main design parameters of RWH system rainfall, catchments area, collection efficiency, tank volume and water demand.

WATER QUALITY

Water security has been defined as “accessibility, reliability, and timely availability of adequate safe water to satisfy human need”. Pure rainwater is mostly low polluted depending on the quality of the atmosphere. Atmospheric pollutants including particles, microorganism, heavy metals and organic substances, accumulate on the catchment area as dry deposition and are washed out from the atmosphere during rainfall events.

TREATMENT

For disinfection purposes there are many techniques available, some of these utilizing natural sources such as solar energy. Slow sand filtration and membrane technology would also be a potential disinfection technique for a safe drinking water supply.

CONCLUSION

It is well established that RWH is a water management strategy for increasing the availability of ground water. Rainwater harvesting system is a sustainability development project which not only checks wastage of rainwater by flooding but also helps to augment ground water table.

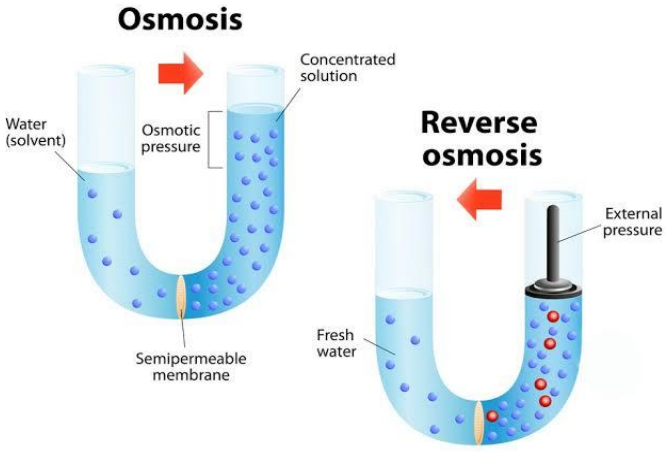
REVERSE OSMOSIS

[BHASHA MEHTA ASSISTANT PROFESSOR EST]

PRINCIPLE OF WORKING:

It is a process by which a solvent pass through a porous membrane in the direction opposite to that for natural osmosis when subjected to a hydrostatic pressure greater than the osmotic pressure.

In simple words, it is exactly opposite to OSMOSIS.



The result is that the solute is retained on the pressurized side of the membrane and the pure solvent is allowed to pass to the other side. To be "selective", this membrane should not allow large molecules or ions through the pores (holes), but should allow smaller components of the solution (such as solvent molecules, i.e., water, H2O) to pass freely.

Generally, RO semi-permeable membrane's pore's size is 0.0001 micron. The average size of most bacteria is between 0.2 and 2.0 micron.

Reverse osmosis is used and applied in almost every sector in domestic and industrial processes.

Domestic Process: In daily life we use pure water for cooking, washing cloths and drinking purpose. For that we use RO system for extracting pure water from impure municipal water.

Industrial Process: The objectives of a RO plant for industrial use are distributed in the following way:

- Desalination of brackish water and sea water
- Production of ultra-pure water
- Wastewater treatment

OTHER APPLICATIONS:

· Helps in recycling processes of water which have been contaminated by chemicals which are used to preserve metal.

· Concentrating the food liquids such as fruit juices.

· Helps in the purification of water which contains a high level of fluoride.

· Help in power stations to remove the minerals from boiler water.

SIGNIFICANCE:

1. It is an important resource to create a sustainable source of drinking water.

2. Reverse osmosis removes various undesirable substances from the water like iron, potassium, zinc and thus used in many large-scale industries. By doing so, the pressure on local water sources gets reduced.

3. Countries having water shortage due to infrastructure or any financial problem can have fresh and pure water and can decrease all types of diseases which are caused due to the impure water.

4. This process allows only 0-2 ppm of hardness to the water i.e.; equal to null.

HYDROELECTRIC POWER PLANTS – A REVIEW

[CHAUDHARI VIKASH SHARADBHAI, PATEL JATEEN HARSHADBHAI – V SEM EE]

Hydroelectric power plants are usually located in dams that impound rivers, thereby raising the level of the water behind the dam and creating as high a head as is feasible. The potential power that can be derived from a volume of water is directly proportional to the working head, so that a high-head installation requires a smaller volume of water than a low-head installation to produce an equal amount of power. In some dams, the powerhouse is constructed on one flank of the dam, part of the dam being used as a spillway over which excess water is discharged in times of flood. Where the river flows in a narrow steep gorge, the powerhouse may be located within the dam itself.

In most communities, electric-power demand varies considerably at different times of the day. To even the load on the generators, pumped-storage hydroelectric stations are occasionally built. During off-peak periods, some of the extra power available is supplied to the generator operating as a motor, driving the turbine to pump water into an elevated reservoir. Then, during periods of peak demand, the water is allowed to flow down again through the turbine to generate electrical energy. Pumped-storage systems are efficient and provide an economical way to meet peak loads.

Falling water is one of the three principal sources of energy used to generate electric power, the other two being fossil fuels and nuclear fuels. Hydroelectric power has certain advantages over these other sources: it is continually renewable owing to the recurring nature of the hydrologic cycle and produces neither atmospheric nor thermal pollution. Hydroelectric power is a preferred energy source in areas with heavy rainfall and with hilly or mountainous regions that are in reasonably close proximity to the main load centres. Some large hydro sites that are remote from load centres may be sufficiently attractive to justify the long high-voltage transmission lines. Small local hydro sites may also be economical, particularly if they combine storage of water during light loads with electricity production during peaks.

India is the 7th largest producer of hydroelectric power in the world. As of 30 April 2017, India's installed utility-scale hydroelectric capacity was 44,594 MW, or 13.5% of its total utility power generation capacity. India's hydroelectric power potential is estimated at 148,700 MW at 60% load factor.

DEPLETION OF NARMADA

[VANSHIKA RANA, EST6TH SEM]

In true words of Stephen Johnson, "Water is the lifeblood of our bodies, our economy, our nation and our well-being."

We all know major civilizations of the world flourished on the banks of rivers. And that is why rivers were revered in our country. We call all our rivers MAA because they nurture our existence.

While water is a renewable resource, it is at the same time a finite resource. The total quantity of water available on the globe is the same as it was two thousand years ago.

It is important to appreciate the fact that only 3 per cent of the world's water is fresh and roughly one-third of it is inaccessible. The rest is very unevenly distributed, and the available supplies are increasingly contaminated with wastes and pollution from industry, agriculture and households.

Over the years, increasing population, growing industrialization, expanding agriculture and rising standards of living have pushed up the demand for water. Efforts have been made to collect water by building dams and reservoirs and creating ground water structures such as wells. Recycling and desalination of water are other options, but cost involved is very high.

However, there is a growing realization that there are limits to 'finding more water' and in the long run, we need to know the amount of water we can reasonably expect to tap and also learn to use it more efficiently.

It is the human nature that we value things only when they are scarce or are in short supply. As such we appreciate the value of water once the rivers, reservoirs, ponds, wells, etc. run dry. Our water resources have now entered an era of scarcity. It is estimated that thirty years from now, approximately one-third of our population will suffer from chronic water shortages. This reminds me of a Native American saying:

When the last tree has been cut down, the last fish caught, the last river poisoned, only then will we realize that one cannot eat money. I would like to bring to light the deteriorating water quality and quantity of Narmada River.

How did Amarkantak, a town once lush with perennial rivers, streams, tributaries, wetlands, even swamps, at an elevation of 1,048m, come to be so dry as to now fear forest fires?

Several factors, some of neglect and wilful destruction, have contributed to its drying out, namely: mining, impact to the bauxite substrata, deforestation, construction, sand mining and rampant water pollution. Everything that dries up the source contributes.

The trajectory to poor river health has taken a turn in the last five to six years.

In April 2012, researchers Nidhi Gupta, Pankaj Pandey, Jakir Hussain studied the 'Physico Chemical Evaluation of Narmada river water at Kalghat in Madhya Pradesh'. The study found Narmada water safe for domestic and irrigation purposes.

In 2014, the Central Pollution Control Board found the Narmada polluted in stretches from Garudeshwar to Bharuch in Gujarat; and Mandla to Bheda Ghat, and Sethani Ghat to Nemawar in Madhya Pradesh. It noted that utilisation of water resources was at a low 23% and that despite over drawing of ground water and saltwater incursions, the Narmada, among other rivers in peninsular India, had a surplus supply of water.

In 2015, the Biological Oxygen Demand (BOD) level in the river was found to be 7.1mg (permissible levels are 3 mg).

By 2016, with untreated sewage from 52 cities being dumped into the river, Prof Mukesh Katakwar, of the Department of Chemistry, Govt PG College, Pipariya, Hoshangabad, in his study of Narmada river water published in the International Journal of Chemical Studies was observing that the poor Dissolved Oxygen levels (DO) indicated: "The water quality of Narmada river may not be in a position to sustain the aquatic life and not suitable for using domestic purpose".

The more the river water reduced during the non-rainy seasons, the greater was its pollution.

The Madhya Pradesh Pollution Control Board this year began installing real-time water quality testing facilities at Omkareshwar, Bhopal, and 14 locations. While the Water Quality Index Report for Feb 2018 marks the river as 'satisfactory', it omits mentions of MPN index (a measure of bacteriological content) between Narsighur and Nemawar, only discreetly marking its as 'B' category of the bureau of Indian Standards after the confluence of the SPM Nallah.

Since 2017, the MP government has begun a monthly and annual monitoring of the water in the river. A fundamental change has been to the temperature of the river, according to a January 2017 study by Utpal Bhaumik of the Central Inland Fisheries Institute (since retired). The main cause would appear to be the dams on the river and other developmental projects.

The projects and the dams have also affected silt levels. Catchment denudation caused high silt contents in the run-off waters and the river, increasing chloride values increasing in the lower plains (615–3248 ppm) because of the decrease in freshwater discharge from upstream. This would slowly begin to alter the ecological balance of the river. The source holding stable is the last thing keeping the Narmada from complete imbalance. Now, even that is under stress.

The situation seems bleak. But we can restore the lost glory of Narmada by taking remedial measures.

Scientific research alone cannot lead to conservation unless its applicability is proved on the ground. Therefore, a pilot initiative has been launched to restore a 5-km stretch along Narmada's riparian zone in Hoshangabad district in partnership with a regional NGO. The effort is guided by scientific research and seeks to improve water quality, enhance natural habitat for biodiversity and generate nutritional benefits and jobs for local communities. By demonstrating success, is aimed to encourage

other stakeholders, including the Madhya Pradesh Government, to replicate this model in other parts of the basin.

This will also raise awareness about the importance of riparian zones, which are generally neglected. Their conservation can provide multiple benefits such as controlling floods, reducing soil erosion, preventing and treating pollution, improving water flows in the river, sequestering carbon and mitigating climate change, creating a natural habitat for wildlife, providing livelihood to local communities and much more.

The first phase of the on-ground intervention has begun. Several sites have been selected, species for plantations have been identified and procured from the Forest Department nursery, and a piece of land has been fenced to prepare for plantation in the upcoming monsoon season in July. Local communities living around the area are being regularly engaged on the importance of this project as their involvement is crucial for the maintenance and upkeep of the plantations.

NARMADA: SOURCE OF LIFE

[MAITRI BHATT (EST 5 SEM])

The Narmada River, also called the Rewa and previously also known as Nerbudda, is a river in central India after the Godavari, and the Krishna. It is also known as "Life Line of Gujarat and Madhya Pradesh" for its huge contribution to the state of Gujarat and Madhya Pradesh in many ways. Narmada rises from Amarkantak Plateau near Anuppur district. It forms the traditional boundary between North India and South India and flows westwards over a length of 1,312 km (815.2 mi) before draining through the Gulf of Khambhat into the Arabian Sea, 30 km (18.6 mi) west of Bharuch city of Gujarat.
It is one of only three major rivers in peninsular India that run from east to west (longest west flowing river), along with the Tapti River and the Mahi River. It is one of the rivers in India that flows in a rift valley, flowing west between the Satpura and Vindhya ranges. The other rivers which flow through rift valley include Damodar River in Chota Nagpur Plateau and Tapti. The Tapti River and Mahi River also flow through rift valleys, but between different ranges. It flows through the states of Madhya Pradesh (1,077 km (669.2 mi)), and Maharashtra, (74 km (46.0 mi))(39 km (24.2 mi)) (actually along the border between Madhya Pradesh and Maharashtra (39 km (24.2 mi)) and then the border between Maharashtra and Gujarat (74 km (46.0 mi)) and in Gujarat (161 km (100.0 mi)).

NARMADA BACHAO ANDOLAN (NBA)

[UDIT DAVE (MECH 7 SEM])

Narmada Bachao Andolan (NBA) is an Indian social movement spearheaded by native tribals (adivasis), farmers, environmentalists and human rights activists against a number of large dam projects across river Narmada, which flows through the states of Gujarat, Madhya Pradesh and Maharashtra. Sardar Sarovar Dam in Gujarat is one of the biggest dams on the river and was one of the first focal points of the movement. It is part of the Narmada Dam Project, whose main aim is to provide irrigation and electricity to people of the above states.

There were many groups such as Gujarat-based Narmada Asargrastha Samiti, Madhya Pradesh-based Narmada Ghati Nav Nirman Samiti (Committee for a New Life in the Narmada Valley) and Maharashtra-Based Narmada Dharangrastha Samiti (Committee for Narmada Dam-Affected People) who either believed in the need for fair rehabilitation plans for the people or who vehemently opposed dam construction despite a resettlement policy.

Narmada Bachao Andolan was also joined by several NGOs with local people, professionals, and activists as the founders with a non-violent approach. It was led by Medha Patkar. Nationally, they wanted an alternative structure of development and internationally, they wanted to build pressure on the World Bank to take accountability.

NBA's slogans include – Vikas Chahiye, Vinash Nahin! and "koi nahi hatega, bandh nahi banega!"

मांआशुतोषी

[HARSH SHAH (MECH 7 SEM])

आदिमातानर्मदेआत्मपोषी।
मांआशुतोषीमांआशुतोषी।
उमारूद्रांगसंभूता, हेपावनत्रिकूटा।
ऋक्षपादप्रसूता, रेवा, चित्रकूटा।
सर्वपापविनिर्मुक्ता, हेनर्मदे

पुण्यसंगम, पारितोषी।
मांआशुतोषी, मांआशुतोषी।

दशार्णा, शांकरी, मुरन्दला।
इन्दुभवा, तेजोराशि, चित्रोत्पला।
दुर्गमपथगामनी, हेनर्मदे,

महार्णवा, मुरला, सुपोषी।
मांआशुतोषी, मांआशुतोषी।
विदशा, करभा, विपाशा।
रंजना, मुना, सुभाषा।
अमलशीतलसतत, हेनर्मदे।

अविराम, सुपथ, शतकोषी।
मांआशुतोषी, मांआशुतोषी।

विमला, अमृता, शोण, विपापा।
महानद, मंदाकिनी, अपापा।
नीलधवलजल, हेनर्मदे।

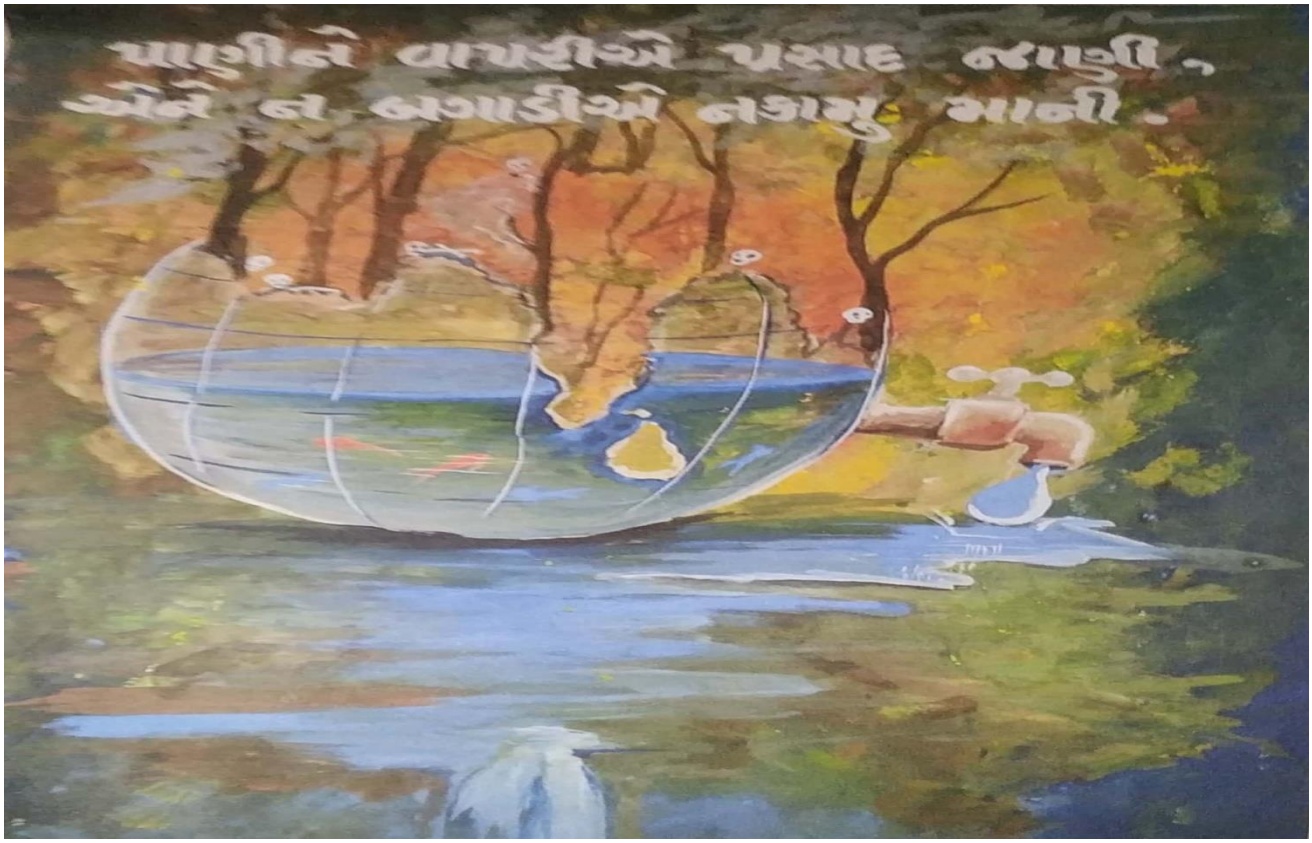
रम्यअहिर्निश, सहस्त्रकोशी।
मांआशुतोषी, मांआशुतोषी।

RIVER NARMADA

[JAY PATEL (EST 5 SEM])

From the hills of Vindhyachal
Green mountain is soaked with rain water
Rain god Indra has showered his love on hills of Vindhyachal
drops of water
drops of water
soon they become mighty Narmada
Dry land
Devoid of water
sometimes good rainfall, sometimes moderate to insignificant rain
Land with no major river with water round the year
No other major holy river ventures into parched land
Sister river requests for help
Mother Narmada marches to the parched land
Mother Narmada fills up sister rivers with water round the year
Mother Narmada marches to deserts
Mother Narmada quenches the thirst of thirsty people of deserts
Mother Narmada brings greenery and prosperity in lives of people
Mother Narmada brings joy and enlivens the life of farmers and people
Mother Narmada brightens and lightens up the lives of people with joy, pleasure and happiness..
Mother Narmada merges into Arabian ocean
The drops of water from Vindhyachal
Became mighty Narmada
Brought prosperity in lives of people
Quench the thirst of dry land
Quench the thirst of people
Blessed them with wisdom
Though Narmada starts with drop of water from Vindhyachal
But soon this drops of water becomes huge river Narmada
Narmada on its journey from Vindhyachal to Arabian sea
Enlivens the life of its children with happiness, prosperity, love and divinity
I bow to mother Narmada
I bow to mother Narmada
Truly only mother can travel a distance, can come to parched land, dry land, desert in all difficulties and tough challenges of nature
To bless her children with love, happiness, prosperity, divinity and wisdom
Salute to you Mom
Love you Mom
Always keep blessing me with your love, wisdom, divinity and prosperity.....
Once we bow to mother Narmada...

ART CORNER



Disha Patel Sem 3 EST

Fenal Modi Sem 3 EST

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Hobbies: Reading, Writing, Teaching,

Some national news on Water and related issues

1) Most MPs Remained Absent When Rajya Sabha Discussed Country's Water Crisis, Shows Viral Image

2) Several steps taken to ensure no water crisis in Delhi: Arvind Kejriwal

Referring to the Niti Aayog report on water crisis in major cities in the country, Kejriwal said that in coming years, water would be a major concern but the document is creating "more alarm".

3) Chennai's water crisis likely to ease from September

Two major sources — Veeranam and Kandaleru — set to get inflows that will be used to boost supply

4) India's large cities staring at water crisis: Water Stress Index

11 of 20 biggest cities in the country are facing extreme risk of scarcity, according to Water Stress Index

5) Bengaluru, Delhi, Chennai among 21 cities to run out of groundwater by 2020

1) The Perfect Son.

A: I have the perfect son.

B: Does he smoke?

A: No, he doesn't.

B: Does he drink whiskey?

A: No, he doesn't.

B: Does he ever come home late?

A: No, he doesn't.

B: I guess you really do have the perfect son. How old is he?

A: He will be six months old next Wednesday.

2) Patient: Doctor, I have pain in my eye whenever I drink tea.

Doctor: Take the spoon out of the mug before you drink.

3) A: Hey, man! Please call me a taxi.

B: Yes, sir. You are a taxi.

4) PUPIL: "Would you punish me for something I didn`t do?"

TEACHER:" Of course not."

PUPIL: "Good, because I haven`t done my homework."

5) "I was born in California."

"Which part?"

"All of me."

1. How many times in a day, are the hands of a clock in straight line but opposite in direction?

   A) 21 B) 22
   C) 23 D) 24

Answer: B) 22 Explanation:

The hands of a clock point in opposite directions (in the same straight line) 11 times in every 12 hours. (Because between 5 and 7 they point in opposite directions at 6 o'clock only).

So, in a day, the hands point in the opposite directions 22 times.

2. If a giraffe has two eyes, a monkey has two eyes, and an elephant has two eyes, how many eyes do we have?

   A) 3 B) 4
   C) 1 D) 2
   Answer: B) 4 Explanation:4 eyes.

Here in the question, it is asked how many Eyes We have so that means here the person who has asked the question is also including the person who is supposed to give the answer. In a clear understanding, the Conversation is happening between 2 people 1st who asked the question and 2nd to whom it has been asked, which means there are 4 eyes.

3. A watch which gains uniformly is 2 minutes' low at noon on Monday and is 4 min. 48 sec fast at 2 p.m. on the following Monday. When was it correct?

   A) 2 p.m. on Tuesday
   B) 2 p.m. on Wednesday
   C) 1 p.m. on Monday
   D) 1 p.m. on Tuesday

Explanation for answer 2 p.m. on Wednesday Time from 12 p.m. on Monday to 2 p.m. on the following Monday = 7 days 2 hours = 170 hours. The Watch gains (2+4(4/5)) min. or 34/5 min.in 170 hrs. 2 min. are gained in (170*(5/34)*2)hrs=50 hrs

Watch is correct 2 days 2 hrs. after 12 p.m. on Monday *i.e.,* it will be correct at 2 p.m. on Wednesday.

4. What is black when you buy it, red when you use it, and gray when you throw it away?

   A) Shoe C) Charcoal

B) Soap D) None of the above

Answer: C) Charcoal

Explanation: It is Charcoal which is black when we buy it or when not being used. It gets red in appearance when put in use means to say when burning. And eventually when it's been consumed by fire or after getting burned out or used up, changes into ashes which look grey in color.


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