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Institute of Science & Technology for Advanced Studies & Research (ISTAR)

Accredited with 'A' Grade by NAAC & KCG

VISION



To add significantly to our enduring civilizational tradition of pioneering excellence in learning, knowledge, enlightenment and self-realization, in a universally relevant context.

OBJECTIVES



01. To create and nourish a stimulating learning environment that ensures a globally relevant Education based on Eternal human values;
02. To forge and reward excellence in the curricular as well as the non-curricular sectors so as to ensure the scholars' global competitiveness;
03. To tap, nurture and unleash the innovative entrepreneurial abilities of scholars and thereby ensure lifelong socioeconomic, value addition;
04. To evoke and embellish the finest traits of human excellence that go on to dovetail into a sustainable career growth curve;
05. To affiliate, associate, liaise or otherwise synergize with any institution, body, entity, ethno cultural diaspora and the overall global fraternity in any form whatsoever, in support of the above;
06. To initiate, consolidate and extrapolate any objectives, functions and activities in support of



MISSION



We dedicate ourselves to the perpetuation of our Founders' Vision of providing the infrastructure, facilities, operating conditions and overall environment conducive to the Education of young scholars, along with the desired physical, mental and character building inputs; we firmly renew our commitment to providing value added, globally relevant Education with an emphasis on the Techno Management domain, to ensure that our scholars fruitfully exercise their knowledge, skills and values in the global economy.



Dr. Hiren B. Soni



Er. Rupesh T. Shah



Dr. Himanshu Kapse



Dr. Niraj H. Patel



Dr. Nirmal Patel

Chairman's Message

I am extremely happy to know that Institute of Science & Technology (ISTAR) is bringing out an inaugural issue of its College Magazine **INSPIRE** during this year. In addition to the numerous achievements of the institute, this is yet another milestone embodies curricular and co-curricular activities. I hope the magazine will certainly bring creative talents of the students as well as the faculty of the institute.

I wish them all success.

Er. Bhikhubhai B. Patel
Chairman, CVM



Education is the most powerful
weapon which you can use to
change the world.

Nelson Mandela

The roots of education are
bitter, but the fruit is sweet.

Aristotle

Education is the passport to the
future, for tomorrow belongs to
those who prepare for it today.

Voltaire



DEPARTMENTAL NEWS

DEPARTMENT OF INDUSTRIAL CHEMISTRY (IC)

Co-Curricular Activities in Collaboration with Zydus Cadila Healthcare, Ankleshwar

For the last many years our students are placed in the reputed pharmaceutical companies of India. Looking into the expertise and knowledge required by a pharma company, we have started certificate course on QA in Pharmaceutical Industries. Recently we met with the officials of Zydus Cadila Healthcare to strengthen our certificate course and asked for their participation in QA course. The company is mutually agreed to give training to all students who enrolled in QA course. Apart from that once in a year, they will arrange one workshop covering all functional areas (production, QA/QC, ADL and safety) of pharmaceutical industries for our students.

National Seminar on 'Advancements in Chemical Technology - A Green Perspective' on 20th January, 2018

Report of the Event:

Industrial Chemistry Department of ISTAR and Department of Chemistry, Sam Higginbotham University of Agriculture Technology & Science, Allahabad has jointly organized a National Seminar on '**Advancements in Chemical technology - A Green Perspective**' on 20th January, 2018, Saturday.

The seminar focused on Green aspect-Environment Friendly Chemical Industry. The technology development in many ways that are environmental friendly and sustainable for conceivable future were discussed during the seminar. Dr. Nikhil Zaveri, Director General, CVM and President of Inaugural Function of the seminar has advised during his presidential remarks to make word 'Green'-an attitude and not a tool for marketing. Mr. Sharad Patil, Senior VP-Transpek Industries Ltd., Vadodara and Chief Guest of the function address the delegates. During his address he revealed the facts regarding the green initiatives practiced by Indian chemical Industry. He mentioned in his speech that Indian chemical Industry is more responsible than China and other

developing countries with respect to environmental concerns. Mr. Ashwin Desai, Chairman, and MD of Aether Industries Ltd., Sachin, delivered a Keynote address.

Mr. Mandar Prabhune, DGM, Transpek Industries Ltd. and Dr. Amit Chatree, Head, Chemistry Department, SHUATS have delivered highly informative Expert talks during the Technical Sessions of the Seminar.

Industry Professionals, Academicians, Researchers, and Student delegates from various parts of India and Gujarat have participated in this seminar in a big number (500). Post lunch session of the seminar was of Poster and Oral presentations by the participants on the 'Green' theme. There were total 92 Posters and 31 Papers which were presented by different delegates.

The Seminar was concluded by a valedictory function during which the delegates have narrated their experience regarding the seminar and gave the feedback and opinions to the organizers. The prize distribution ceremony was also held during this session in which the prizes were distributed in various categories along with the certificates.

The event was sponsored by M/s. Transpek Industries Ltd., Vadodara and M/s. Aether Industries Ltd., Sachin. The Seminar was a grand success and had achieved its aim of Knowledge transformation.

Report Submitted By:

Dr. Rohit H. Dave

Coordinator

Date: 25-01-2018

DEPARTMENT OF ENVIRONMENTAL SCIENCE & TECHNOLOGY (EST)

Proceedings of One Day National Seminar on “Environment Pollution and Climate Change” (EPCC 2018) conducted on 30th January, 2018

A One Day National Seminar on **Environment, Pollution and Climate Change** was organized by Gujarat Ecology Commission, Gandhinagar, PG Department of

Environmental Science & Technology (EST), Institute of Science & Technology for Advanced Studies & Research (ISTAR), and Department of Biological and Environmental Science, N.V. Patel College of Pure & Applied Science (NVPAS), Vallabh Vidyanagar on 30th January, 2018, at GCET Engineering College Auditorium, Vallabh Vidyanagar, Gujarat. The Seminar was funded by Gujarat Ecology Commission (**GEC**), Gandhinagar, with a financial assistance of **Rs. 1,00,000/-**. The focal themes of the Seminar were *Air Pollution & Control Technologies, Impact of Climate Change on Biodiversity & Forestry, Water & Soil Pollution – Treatment Technologies, Aquatic & Terrestrial Environmental Pollution, Waste Management, Climate Change & Agriculture, Carbon Sequestration in curbing Climate Change, Applications of RS & GIS in Environmental Research, Ecosystem – Analysis & Modeling, Space & Atmospheric Science, Environmental & Atmospheric Chemistry, Environmental Health, Natural Resources – Energy & Conservation, Climate Change: Mitigation & Adaptation, Environmental, Medical & Industrial Biotechnology, and Environmental Conservation & Sustainable Management.*

To fulfill the thrust and burgeoning areas of the National Seminar, the expert speakers were invited to deliver the invited talks in the form of plenary lectures for enriching the budding community of the UG, PG & Ph.D. students, Researchers, Academicians, Consultants, and Industrialists. In total, three speakers were invited to deliver the expert talks as mentioned hereafter. **Prof. N.N. Rao**, Chief Scientist & Head, Waste Water Technology Division, National Environmental Engineering Research Institute (**NEERI**), Nagpur, **Prof. Chirashree Ghosh**, Professor, Department of Environmental Studies, University of Delhi, and **Prof. S. Ramchandran**, Space & Atmospheric Sciences Division, Physical Research Laboratory (PRL), Ahmedabad, were invited as expert speakers. Strikingly, this National Seminar was attended by around 300 Participants including UG & PG Students, Researchers, Faculty, Industry Professionals, and Consultants, from all over the Gujarat State as well as neighboring states such as Maharashtra, Rajasthan, Madhya Pradesh, and Karnataka.

The **Chief Guest (Prof. B.G. Patel Pro-Vost, CHARUSAT)** delivered an **Inaugural Address**. He emphasized on urgent need of awareness about environmental research, rage of climate change and its consequences, and empowerment of young students community to take steps forward to revive the degrading environment, and its conservation for better survival of species including human race at global scale. The Presidential Remarks were showered by the President of the function (Dr. S.G. Patel,

Hon. Secretary, CVM, Vallabh Vidyanagar). **The Technical Session (I) of the** National Seminar was initiated by an expert talk by **Prof. N.N. Rao**, Chief Scientist & Head, Waste Water Technology Division, National Environmental Engineering Research Institute (NEERI). The focal theme of his expert talk was “Selection of Industrial Wastewater Treatment Technology with Managerial Options”. He enlightened the mass by delivering an expert talk on adoption of advanced wastewater treatment technologies such as Zero Liquid Discharge (ZLD), Ultra-filtration (UF)/Reverse Osmosis (RO) System, Mechanical Vapour Recompression (MVR), Waste Heat Evaporator (WHE)/Membrane Distillation, Agitated Thin Film Dryer (ATFD), Multiple Effect Evaporator (MEE), Crystallizer etc.

The technical session was further preceded by **Prof. Chirashree Ghosh**, Professor, Department of Environmental Studies, University of Delhi. She emphasized on “Smart City Planning to withstand Urban Climate Change”. She stated that by 2030, three-quarters of the world’s population will be urban and the bigger cities are estimated to be found in the developing world. The growth of cities is expected to continue up to 9 billion by 2050. Due to climate change in developing countries, there is a shift of population from rural to urban areas, categorizing them as “Environmental refugees or Climate refugees”.

An expert talk was delivered by **Prof. S. Ramchandran**, Space & Atmospheric Sciences Division, Physical Research Laboratory (PRL), Ahmedabad, who focused on “**Air Pollution and Climate Change: Latest Challenges**”. He highlighted the present status of unwanted occurrence of malicious organic and inorganic air pollutants in an atmosphere, which are deliberately generated by natural as well as anthropogenic sources. He also stressed upon influence of air pollution on climate at regional, national, and global scales.

The session was followed by **Oral Presentations** covering various themes like Air Pollution & Control Technologies, Aquatic & Terrestrial Environs & Pollution, and Water Pollution & Treatment Technologies. Simultaneously, this session was exclusively involving Poster Presentations on thematic areas of Environmental Science such as Bioremediation & Biodegradation, and Environmental Biotechnology & Microbial Technology. In total, the Faculty as well as Students community exhibited 46 Posters on recent themes of Environment, Pollution and Climate Change.

OPEN HOUSE @ SPRERI



INDUSTRIAL VISIT @ SHREE VALLABH ALLOY STEEL CASTING INDUSTRIES



ONE DAY WORKSHOP CUM TRAINING ON POPs BY DR. NOBUYOSHI, AIST, JAPAN



DEPARTMENT OF INSTRUMENTATION & CONTROL (INC)

Expert Talk Delivered by Dr. H. N. Kapse:

1. "GC, MS- Instruments", Workshop on HPLC, HPTLC & GC / GC-MS organized by Sophisticated Instrumentation Centre for Applied Research & Testing, Vallabh Vidyanagar, July 27 to 29, 2017.

Guideship:

Dr. H.N. Kapse got recognition as Ph. D. guide in Electronics from Sardar Patel University

Oral Presentations:

1. Development of motes for agriculture sensor network, R. B. Shah, K. B. Suthar, H. N. Parikh & **H.N. Kapse**, GSA-VVN Science Meet 2018 organized by Gujarat Science Academy – VVN Chapter, VP & RPTP Science College, C.C. Patel Community Science Centre (SPU), January 21, 2018.
2. Arduino based data acquisition system for greenhouse, H. N. Parikh, **K.B. Suthar**, R. B. Shah,& H. N. Kapse, GSA-VVN Science Meet 2018 organized by Gujarat Science Academy – VVN Chapter, VP & RPTP Science College, C.C. Patel Community Science Centre (SPU), January 21, 2018.

Poster Presentation:

1. Automatic plant watering system through Moisture monitoring using Arduino, **D.R. Patel**, R. B. Shah & H. N. Kapse, National Seminar on Environment Pollution and Climate Change organized by Department of Environmental Science & Technology, ISTAR & Department of Biological and Environmental Science, NVPAS, January 30, 2018.

Faculty Development Program Attended:

1. Dr. H. N. Kapse - Two days International Faculty Development Program by HRDC-SPU.
2. Dr. H. N. Kapse & Ms. R. B. Shah - 3 days workshop "Becoming effective classroom practitioners" by ISTAR.

DEPARTMENT OF ORGANIC CHEMISTRY (OC)

Campus Placement:

Sr. No	Name of company	Post offered	No. of Students
1	Reliance Industries Ltd.	QC Chemist	1
2	Oxygen Healthcare Research Pvt. Ltd.	Chemist-R & D	5
3	Olax Pharma Labs	Chemist-R & D Chemist: ADL	1 1
4	Piramal Pharma Solutions	Chemist-R & D Chemist: ADL	1 3
5	Oneiro Chemicals Ltd.	Chemist-R & D Chemist: ADL	3 1

Seminar/Conference Attended:

1. Workshop on Becoming Effective Classroom practitioner held on 11/10/2017

Sr. No	Name of Faculty	Attended
1	Dr. Niraj H Patel	Attended
2.	Dr. Kinnari Bhatt	Attended

2. National seminar on Advancement in Chemical Technology- A Green perspective on 20th Jan-2018

Sr. No	Name of Faculty	Attended/Presented
1	Dr. Niraj H Patel	Poster Presentation on "Synthesis and spectral characterization of some 1-acetyl/propionyl-3-aryl-5-(7-methoxy coumarin-4-yl)-2-pyrazolines and 1,3-diaryl-5-(7-methoxy coumarin-4-yl)-2-pyrazolines"
2.	Dr. Kinnari Bhatt	Attended
3.	Ms. Hina Arya	Attended

DEPARTMENT OF INFORMATION TECHNOLOGY (IT)

M.Sc. (INFORMATION TECHNOLOGY)

WHAT IS INFORMATION TECHNOLOGY?

A student holding a degree in Information Technology can work as an IT Engineer responsible for operating computer systems, software, servers, computer networking or network securities. The programme focuses on the theoretical and technical aspects of designing, developing, researching and testing software as well as digital hardware. Information Technology is designed to teach students about various fundamental concepts of information security, web systems, computer networking and software engineering. The programme covers subjects like programming, mathematics, and operations among others.

ABOUT IT DEPARTMENT:

- ➡ In 1999 ISTAR started M.Sc. (IS) programme recognized and affiliated to Sardar Patel University, V.V.Nagar-388 120, Gujarat, India. However in 2010 this programme name had changed as M.Sc. (IT).
- ➡ IT Department have well-equipped laboratories comprising Laptops with latest configuration, dedicated smart class rooms and Seminar hall.
- ➡ Department organizes various expert lectures and workshops (by eminent people from industry & academics) on emerging technologies like PHP, .NET, JAVA, Android & iOS mobile application development, Python programming etc.
- ➡ Every year conducted Industrial visits to make the students updated with the latest trends are the unique features of this department.
- ➡ Personality Development Programmes for students are arranged throughout the year for improving the soft skills of the students.
- ➡ **100% University Results, More First Class & Distinction Every Year.**
- ➡ The department evaluates the students by continuous assessment through weekly test, quizzes, seminars, and external examinations.



Many renowned alumni of the department are either holding respectable position in industries or have opted for higher studies across the globe.

COURSE CONTENTS:

Semester 1	Semester 2	Semester 3	Semester 4
<ul style="list-style-type: none"> • Introduction to Theoretical Computer Science • Advanced Programming Concepts & Data Structures • RDBMS & Client Server Computing • Operating System Concepts • System Analysis and Design • Practical - C++ & Oracle 	<ul style="list-style-type: none"> • Modern MIS Techniques • Software Engineering • Visual Programming • Web Programming • Elective Papers • E-Commerce & M-Commerce • Trends in Information & Communication Technology (ICT) • Practical - Visual Programming & Web Programming 	<ul style="list-style-type: none"> • Java Programming • Data Communication and Networking • Information Security • Distributed Application Development Technology • Elective Papers • Artificial Intelligence • Data Mining and Data Warehousing • Multimedia and Computer Graphics • Mobile Application Development Using Android and Windev • Practical - Java & .Net Practical 	<ul style="list-style-type: none"> • Project Work • Dissertation & Viva
FEES STRUCTURE First Semester Rs. 25000/- Second Semester Rs. 25000/- Third Semester Rs. 25000/- Fourth Semester Rs. 25000/-			
INTAKE 70 seats			

PROGRAM SPECIFIC OUTCOMES (PSO) FOR MASTER OF SCIENCE IN INFORMATION TECHNOLOGY

Information Technology Programme is designed to prepare master students to attain the Following program-specific outcomes:

1. Ability to apply the theoretical concepts and practical knowledge of Information Technology in analysis, design, development and management of information processing systems and applications also in the interdisciplinary domain.
2. Ability to work as a socially responsible professional or as an entrepreneur by applying Information Technology principles and management practices.

ELIGIBILITY CRITERIA:

B.Sc. (IS) / B.Sc. (IT) / B.Sc. (CS), BCA

BBA (ISM / ITM)

BE (IT, EC, CE)

B.Sc. (Bioinformatics)

Any graduate with PGDCA/PGDCAA/any Science graduate (who has cleared at least 3 papers related to computer science at graduate level) from recognized university)

ACTIVITIES & ACHIEVEMENTS



PLACEMENT:

- TINYERP PVT LTD., Gandhinagar
- Rishubh Software, BARODA
- Vrindi Software PVT Ltd, Anand
- MANGO SOLU. VALSAD
- TIMES INTERNATIONAL, BARODA
- Pragma Infotech
- Redix Soft.Pvt ltd, Ahmedabad
- COLLABERA, BARODA
- PEASS TECHNOLOGIES
- ATUL INFOTECH
- V Nurture Software
- SKYNET INFOTECH (RAJKOT)
- IBM, PUNE
- SANSUN VISION SOLUTION
- INDUS GUARD
- SAURABH WEB SOLUTION
- VRINDI INDIA PVT LTD.
- VED LOGIC SOLUTION
- ACME WEBITAC



PEN-DOWNS FROM FACULTIES

RECENT CHANGES IN THE FIELD OF VALUATION

Rupesh T. Shah

Head, Valuation Department

ISTAR

Background

Registration of valuers in India up till now is done **u/s 34 AB of Wealth Tax Act 1957**. There are ten different categories of valuers - like valuer of land and building (real estate); plant & machinery; agricultural lands; forest, mines and quarries; coffee, tea and rubber plantations; stocks, shares and debentures (financial assets); actuaries etc. Different qualification criteria are prescribed in the Act for different categories.

Up till 1994, there was no formal education in valuation in India. Registration as valuer of real estate was granted to civil engineers/architects with ten years of experience, and registration as valuer of plant & machinery was granted to mechanical/electrical engineers with ten years of experience. Sardar Patel University, Vallabh Vidyanagar for the first time in India started post graduate courses in the field of real estate and plant & machinery valuation at BVM Engineering College, Vallabh Vidyanagar in the year 1994. In 1997, amendment in Wealth Tax Act was made and experience criteria for post graduate degree holders in valuation was reduced to Two Years as against Ten Years for engineering degree holders in respective disciplines. Charutar Vidya Mandal (CVM) established ISTAR in 1999 exclusively for the post graduate courses in the field of science, engineering and interdisciplinary courses and accordingly post graduate courses of valuation were shifted from BVM to ISTAR in 1999.

Recent Developments

Companies Act 1956 has been amended in 2013 by the ministry of corporate affairs. To streamline the process of insolvency and bankruptcy of companies, firms and individuals Insolvency and Bankruptcy Code (IBC) 2016 has been legislated. New definition of 'Registered Valuer' has been introduced in the Companies (Registered

Valuers) Rules and registration of valuers has been assigned to Insolvency and Bankruptcy Board of India (IBBI). The concept of Registered Valuers Organisation (RVO) has been introduced, whereby there will be about 10 to 12 RVOs to be approved by IBBI throughout India. Any person desirous of being a Registered Valuer will have to be a member of any one RVO and RVO will impart 50 hours training to its members. After completing this training, the candidate will appear for online exam to be conducted by IBBI. Candidate passing the exam will become 'Registered Valuer' in respective category under the Companies Act 2013.

Implications

Since the syllabus prescribed by IBBI is similar to that of post graduate degree course in valuation of Sardar Patel University, it will be easier for post graduate students to clear the IBBI exams. Demand for qualified valuers will increase in the market and quality of valuation services will improve as more number of qualified valuers will be practicing.

COMMON ISSUES IN LCD PROJECTOR

Himanshu N. Kapse

Department of Instrumentation & Control

Institute of Science & Technology for Advanced Studies & Research (ISTAR)

Vallabh Vidyanagar – 388120

An LCD projector is a modern equivalent of the slide projector or overhead to display images. It is a video projector that beams images from a computer or other similar devices onto flat surfaces. The projector uses three liquid crystal panels that work together in unison. LCD (liquid crystal display) projectors typically send light from a metal halide lamp through a prism or series of dichroic filters that separates light to three poly silicon panels – one each for the red, green, and blue components of the video signal. As polarized light passes through the panels which is combination of polarizer, LCD panel and analyzer, individual pixels can be opened to allow light to pass or closed to block the light. The combination of open and closed pixels can produce a wide range of colours and shades in the projected image. Projectors are standard in every business meetings and seminars, conferences. They also have entered in the classrooms of

schools and colleges. LCD projectors are popular because they offer a compact design that provides bright images and accurate colours as they are able to facilitate presentations effectively and efficiently. Setting up projector should be simple. Most models use a plug-and-play approach with connection ports located on the back of the projector that is clearly identified as to their use -- USB and HDMI.

Things do not always go according to plan. It is important to be confident and well practiced in dealing with all possibilities. When something unexpected happens, you don't want to get off track and feel uncomfortable. Let us understand few minor problems that one may encounter when operating an LCD projector and may possibly handle it easily.

Projector Not Turning Off

The common problem with LCD projectors is that it will not turn off when the power off button is pressed. The usual root cause of this problem is an ill-fitted lamp assembly or power cable loosely connected. To address this issue, re-fit the lamp assembly or reconnect the cable and adjust. When data projectors are moved or transported, the cover can sometimes come loose. When this happens, they will power up but not turn on the bulb for safety reasons. Turn off the projector and check to see that all covers are securely on. Never check for loose covers with the projector on, you will risk being electrocuted or burned by hot components inside the projector. You can usually get installation instructions from the owner's manual. If the problem still persists even after all the necessary adjustments are made, contact technical support to help diagnosis the problem.

Image Don't Display

Many display problems are caused by loose cables between the computer and data projector. Make sure all cables are securely connected to the appropriate port. With many laptops requiring dongles to convert between mini Display Port or USB ports and a VGA or HDMI cable, check each connection is secure. Remove and re-fit each cable/connector to make sure.

Remote Control Not Functioning

Remote control that is not working may be caused by several factors. One reason is that its batteries are already weak and need replacement; another reason is that you may be using it in excess of the recommended distance range. One other probable reason is doing the presentation with fluorescent lights on. This disables infrared remote control functions. Now a day smart phones have facility to download specific IR remote apps which enables the LCD projector to work through mobile phones.

Purple Dots on the Screen

Purple or magenta spots on a screen could affect the quality of images being beamed by an LCD projector, and these can distract users. The usual causes of this are dust and dirt particles that have accumulated on a projector's green panel. One should regularly clean the projector for foreign materials to ensure that the images are always of high quality.

Poor Image Quality

Sometimes one may see images that are of inferior quality; this problem can be caused by an unaligned computer resolution. Many new LCD projector models are equipped with an automatic setup feature that instantly aligns the projector's resolution to a computer's resolution. However, there may be occasions where the projector is not able to conform to a computer's resolution, thereby affecting the quality of the images displayed. To resolve this, adjust the computer's resolution until the images improve.

Images Don't Display Fully

Sometimes a user does not see the images getting fully beamed by the LCD projector. You may find that the bottom of the image is cut off or the text has missing parts. This problem can be rectified by aligning the computer's resolution to the projector's resolution. Adjusting the resolution can get tricky with laptops, especially if its standard resolution exceeds that of a projector's resolution. If you still don't get full images even after adjustments have been made on the laptop's resolution, you might have to disable your laptop's desktop.

Other problems encountered may be of more on technical side or component related which needs repairing or replacement of the malfunctioning parts like in the case of distorted colour screen, signal fluctuation, lens defects, batteries stop working,

etc. for such problems call on technical support. Thus one should understand where to look for and how to tackle when unexpected things happen.

HYDROLOGICAL TRANSPORT MODELING: A SOFTWARE PARADIGM

Hiren B. Soni

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A hydrological transport model is a mathematical model used to simulate river or stream flow and calculate water quality parameters. These models generally came into use in the 1960s and 1970s when demand for numerical forecasting of water quality was driven by environmental legislation, and at a similar time, widespread access to significant computer power became available. Much of the original model development took place in the United States and United Kingdom, but today these models are refined and used worldwide.

There are dozens of different transport models that can be generally grouped by pollutants addressed, complexity of pollutant sources, whether the model is steady state, or dynamic, and time-period modeled. Another important designation is whether the model is distributed (i.e. capable of predicting multiple points within a river) or lumped. In a basic model, for example, only one pollutant might be addressed from a simple point discharge into the receiving waters. In the most complex of models, various line source inputs from surface runoff might be added to multiple point sources, treating a variety of chemicals plus sediment in a dynamic environment including vertical river stratification and interactions of pollutants with in-stream biota. In addition, watershed groundwater may also be included. The model is termed "physically based" if its parameters can be measured in the field.

Often models have separate modules to address individual steps in the simulation process. The most common module is a subroutine for calculation of surface runoff, allowing variation in land use type, topography, soil type, vegetative cover, precipitation and land management practice (such as the application rate of

a fertilizer). The concept of hydrological modeling can be extended to other environments such as the oceans, but most commonly, the subject of a river watershed is generally implied.

History

In 1850, T.J. Mulvany was probably the first investigator to use mathematical modeling in a stream hydrology context, although there was no chemistry involved (**Mulvany, 1850**). By 1892, M.E. Imbeau had conceived an event model to relate runoff to peak rainfall, again still with no chemistry (**Imbeau, 1892**). Robert E. Horton's seminal work (**Horton, 1933**) on surface runoff along with his coupling of quantitative treatment of erosion (**Horton, 1945**) laid the groundwork for modern chemical transport hydrology.

Physical Models

Physical models (sometimes known as deterministic, comprehensive, or process-based models) try to represent the physical processes observed in the real world. Typically, such models contain representations of surface runoff, subsurface flow, evapo-transpiration, and channel flow, but they can be far more complicated. "Large scale simulation experiments were begun by the U.S. Army Corps of Engineers in 1953 for reservoir management on the main stem of the Missouri River". This (**USACOE, 1957**) and other early work that dealt with the River Nile (**Barnett, 1957; Morrice and Allan, 1959**), and the Columbia River (**Brown, 1958**) are discussed, in a wider context, in a book published by the Harvard Water Resources Seminar, that contains the sentence just quoted (**Manzer and Barnett, 1962**). Another early model that integrated many submodels for basin chemical hydrology was the Stanford Watershed Model (SWM) (**Crawford and Linsley, 1966**). The SWMM (Storm Water Management Model), the HSPF (Hydrological Simulation Program - FORTRAN) and other modern American derivatives are successors to this early work.

In Europe a favoured comprehensive model is the Système Hydrologique Européen (SHE) (**Singh, 1955; Abbott *et al.*, 1986**), which has been succeeded by MIKE SHE and SHETRAN. MIKE SHE is a watershed-scale physically based, spatially distributed model for water flow and sediment transport. Flow and transport processes are represented either by finite difference representations of partial differential

equations or by derived empirical equations. The following principal sub-models are involved:

- Evapotranspiration: Penman-Monteith formalism
- Erosion: Detachment equations for raindrop and overland flow
- Overland and Channel Flow: Saint-Venant equations of continuity and momentum
- Overland Flow Sediment Transport: 2D total sediment load conservation equation
- Unsaturated Flow: Richards equation
- Saturated Flow: Darcy's law and the mass conservation of 2D laminar flow
- Channel Sediment Transport 1D mass conservation equation.

This model can analyze effects of land use and climate changes upon in-stream water quality, with consideration of groundwater interactions. Worldwide a number of basin models have been developed, among them RORB (Australia), Xinanjiang (China), Tank model (Japan), ARNO (Italy), TOPMODEL (Europe), UBC (Canada) and HBV (Scandinavia), MOHID Land (Portugal). However, not all of these models have a chemistry component. Generally speaking, SWM, SHE, and TOPMODEL have the most comprehensive stream chemistry treatment and have evolved to accommodate the latest data sources including remote sensing and geographic information system data.

In the United States, the Corps of Engineers, Engineer Research and Development Center in conjunction with a researchers at a number of universities have developed the Gridded Surface/Subsurface Hydrologic Analysis GSSHA model (**Downer and Ogden, 2006; Downer and Ogden, 2004; Downer et al., 2006**). GSSHA is widely used in the U.S. for research and analysis by U.S. Army Corps of Engineers districts and larger consulting companies to compute flow, water levels, distributed erosion, and sediment delivery in complex engineering designs. A distributed nutrient and contaminant fate and transport component is undergoing testing. GSSHA input/output processing and interface with GIS is facilitated by the Watershed Modeling System (WMS) (**WMS, 2016**).

Another model used in the United States and worldwide is *Vflo*, a physics-based distributed hydrologic model developed by Vieux & Associates, Inc. *Vflo* employs radar rainfall, and GIS data to compute spatially distributed overland flow and channel flow. Evapo-transpiration, inundation, infiltration, and snowmelt modeling capabilities are included. Applications include civil infrastructure operations and maintenance, storm

water prediction and emergency management, soil moisture monitoring, land use planning, water quality monitoring, and others.

Stochastic Models

These models based on data are black box systems, using mathematical and statistical concepts to link a certain input (for instance rainfall) to the model output (for instance runoff). Commonly used techniques are regression, transfer functions, neural networks, and system identification. These models are known as stochastic hydrology models. Data based models have been used within hydrology to simulate the rainfall-runoff relationship, represent the impacts of antecedent moisture and perform real-time control on systems.

Model Components

Surface Run-off Modeling

A key component of a hydrological transport model is the surface runoff element, which allows assessment of sediment, fertilizer, pesticide and other chemical contaminants. Building on the work of Horton, the unit hydrograph theory was developed (**Dooge, 1959**). It required the presence of the National Environmental Policy Act and kindred other national legislation to provide the impetus to integrate water chemistry to hydrology model protocols. In the early 1970s, the U.S. Environmental Protection Agency (EPA) began sponsoring a series of water quality models in response to the Clean Water Act. An example of these efforts was developed at the Southeast Water Laboratory (**Hogan *et al.*, 1973**), one of the first attempts to calibrate a surface runoff model with field data for a variety of chemical contaminants.

The attention given to surface runoff contaminant models has not matched the emphasis on pure hydrology models, in spite of their role in the generation of stream loading contaminant data. In the United States the EPA has had difficulty interpreting (**Grant and Iskandar, 2000**) diverse proprietary contaminant models and has to develop its own models more often than conventional resource agencies, who, focused on flood forecasting, have had more of a centroid of common basin models.

Example Applications

Liden applied the HBV model to estimate the riverine transport of three different substances, nitrogen, phosphorus, and suspended sediment (**Liden, 2000**) in four different countries: Sweden, Estonia, Bolivia, and Zimbabwe. The relation between internal hydrological model variables and nutrient transport was assessed. A model for nitrogen sources was developed and analyzed in comparison with a statistical method. A model for suspended sediment transport in tropical and semi-arid regions was developed and tested. It was shown that riverine total nitrogen could be well simulated in the Nordic climate and riverine suspended sediment load could be estimated fairly well in tropical and semi-arid climates. The HBV model for material transport generally estimated material transport loads well. The main conclusion of the study was that the HBV model can be used to predict material transport on the scale of the drainage basin during stationary conditions, but cannot be easily generalized to areas not specifically calibrated. In a different work, **Castanedo *et al.* (2006)** applied an evolutionary algorithm to automated watershed model calibration.

The United States EPA developed the DSSAM Model to analyze water quality impacts from land use and wastewater management decisions in the Truckee River basin, an area which include the cities of Reno and Sparks, Nevada as well as the Lake Tahoe basin. The model satisfactorily predicted nutrient, sediment and dissolved oxygen parameters in the river (**USEPA, 1987**). It is based on a pollutant loading metric called "Total Daily Maximum Load" (TDML). The success of this model contributed to the EPA's commitment to the use of the underlying TDML protocol in EPA's national policy for management of many river systems in the United States (**USEPA, 1991**).

The DSSAM Model is constructed to allow dynamic decay of most pollutants; for example, total nitrogen and phosphorus are allowed to be consumed by benthic algae in each time step, and the algal communities are given a separate population dynamic in each river reach (e.g. based upon river temperature). Regarding storm water runoff in Washoe County, the specific elements within a new xeriscape ordinance were analyzed for efficacy using the model. For the varied agricultural uses in the watershed, the model was run to understand the principal sources of impact, and management practices were developed to reduce in-river pollution. Use of the model has specifically been conducted to analyze survival of two endangered species found in the Truckee

River and Pyramid Lake: the Cuiui Sucker Fish (endangered 1967) and the Lahontan Cutthroat Trout (threatened 1970).

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GLIMPSES OF ISTAR

આઈસ્ટાર કોલેજમાં વાર્ષિક દિનની ઉજવણી



આઈસ્ટાર, તા.૭ ચાણર વિદ્યામંડળ સંચાલિત આઈસ્ટાર કોલેજનો ૧૯મો વાર્ષિક દિન સીવીએમના આયોજીત પટેલના પ્રમુખપદે યોજાયો હતો. આ પ્રસંગે મુખ્ય મહેમાન પદે અમુચ દેસી, આઈસ્ટારના મેનેજિંગ ડાયરેક્ટર ડૉ. કે. રશ્મી ઉપસ્થિત રહ્યા હતા. સીવીએમના ડૉ. એસ. જી. પટેલ તથા જનરલ ડૉ. નિખીલ જલેડી પણ ઉપસ્થિત રહ્યા હતા. સંસ્થાના વડા પ્રો. નિલવડુભાઈ શોને આયોજીત સંસ્થાની વાર્ષિક પ્રવૃત્તિઓનો સંવિસ્તર અહેવાલ આપ્યો હતો. ત્યારબાદ વર્ષ દરમિયાન ગૌણિક તેમજ પૈતર

પ્રવૃત્તિઓમાં વિકાસ પ્રદર્શન કરનાર તેમજ યુનિવર્સિટીમાં સુવર્ણ ચંદ્રક મેળવનાર વિદ્યાર્થીઓનું અભૂતપૂર્વ કરવામાં આવ્યું હતું. જેનું સંવાદન મધ્યસ્થ સમિતીના વાહન પ્રેસીડન્ટ રૂપે જાહે કર્યું હતું. મિત્રા, એશ્વિન પંડેને વિશે ઓથોગીક સંસ્થાઓ દ્વારા વિદ્યાર્થીઓને રોકેટરીષ તેમજ પ્રમાણપત્રો એનાયત કરવામાં આવ્યા હતા. મહેમાનોના હસ્તે વિદ્યાર્થીઓના મેગેઝીન આઈસ્ટાર ગેલેરીનું વિમોચન કરવામાં આવ્યું હતું. મુખ્ય મહેમાન ડૉ. કે. રશ્મી આઈસ્ટારના અખ્યાસરમે તેમજ

વિવિધ પ્રવૃત્તિઓને ભિરરાવી વિદ્યાર્થીઓને તેમની કારકિર્દી યાત્રા માટે મુક્ત માર્ગદર્શન મુદ્દા પાડ્યું હતું. તેઓએ વિદ્યાર્થીઓને મુખ્ય આધ્યાત્મિક કવનનું મહત્વ પણ સમજાવ્યું હતું. સમારોહના પ્રમુખ ઓપુલાઈ પટેલ આઈસ્ટારની પ્રવૃત્તિઓને બિરહાવી હતી. આ પ્રસંગે સીવીએમના માનદ સહમંત્રીઓ બી. પી. પટેલ, બી. એમ. પટેલ વિવિધ કોલેજના આચાર્ય અને પ્રાધ્યાપક તેમજ સંસ્થાના ભૂતપૂર્વ વિદ્યાર્થીઓ અને સંસ્થા સાથે સંકળાયેલ ગેસ્ટ ફેકલ્ટી ઉપસ્થિત રહ્યા હતા.



ચાણર વિદ્યામંડળ સંચાલિત, આઈ સ્ટાર કોલેજ ખાતે વિદ્યાર્થીઓ દ્વારા મ્યુઝીકલ ડેની ઉજવણી કરવામાં આવી હતી. (તસવીર : સલીમ-મમતા સ્ટુડિયો, વિદ્યાનગર)





સીવીએમ સંચાલિત આઈસ્ટાર કોલેજના સરફેસ એટ્રિંગના વિદ્યાર્થીઓ એશિયન પેઈન્ટસ ચેરિટેબલ ટ્રસ્ટ દ્વારા એનાયત થયેલ શિષ્યવૃત્તિના ચેક સાથે દશ્યમાન થાય છે. સંસ્થાના નિયામક શ્રી ડૉ. નિર્મલકુમાર, વિભાગના વડા ડૉ. કલ્પેશ પટેલ અને ડૉ. અયંક પટેલ નથરે પડે છે.



આઈસ્ટારમાં આયત્તા સંન્ટ્રીય ઈન્ટરનશનલ હાર્મનીઝેશન ડ્રગ પાલ્લી ઈન્ટરનેશનલ હાર્મનીઝેશન ઈન્ડિયન પ્રોફેશનલ ડેવલોપમેન્ટ કોર્સના યોજનામાં આવી હતી. જેમાં ૧૦૦ સભ્યોએ ભાગ લીધો હતો. આ કાર્યને ડૉ. કેઓરા નેગરન, ઈસ્ટીડન્ટ અમેરીકન ઈન્ટરનશનલ એસોસિએશન, મી. પેરી ઓલન (મેનેજર) કોર્પોરેટ, મીશ હર્ષ પટેલ, મુખ્ય વક્તાઓએ ભાગ લીધો હતો. આ કોન્ફરન્સમાં આજીયાર વિદ્યાર્થીઓના ચેરમેન ડૉ. સી. એચ. પટેલ, ડૉ. કેઓરા રાઉલ, ડૉ. સ્કોટ ક્લાર્ક યુનિવર્સિટી ઓફ સીનસીનાટી યુગેસ, એના મહત્વની ભૂમિકા ઈન્ટરનશનલ હાર્મનીઝેશન અને સ્કોટી પ્રોગ્રામ આસતમાં યજાવવા માટે ભજવી હતી. કાર્યક્રમે મહેમાનોને ઈસ્ટીડન્ટાઈઝન પાર્કિંગ ઓફ ધ યર ૨૦૧૭ એવોર્ડની સન્માનવામાં આવ્યા હતા. (તસ્વીર : સહીમ, સમયા સ્ટુડીઓ, વિદ્યાનગર)



આઈસ્ટાર કોલેજમાં આંતરરાષ્ટ્રીય જિઓઈન્ફોર્મેટીક્સ દિવસની ઉજવણી કરાઈ



વિશાળપર, તા.૧૮ જા.વિ.મંડળ સંચાલિત આઈસ્ટાર કોલેજના જિઓઈન્ફોર્મેટીક્સ ડીપાર્ટમેન્ટના ઉપક્રમે ૧૫ નવેમ્બર ૨૦૧૭ના દિવસે આંતરરાષ્ટ્રીય જિઓબાયોલોજી ઈન્ફોર્મેશન સીસ્ટમ દિવસની ઉજવણી કરવામાં આવી હતી અને પોસ્ટર કોમ્પિટિશનનું આયોજન કરવામાં આવેલ.

આઈસ્ટાર કોલેજના પ્રિન્સીપાલ ડો.નિરમલકુમારે જિઓઈન્ફોર્મેટીક્સમાં ઈન્ફોર્મેશન સાયન્સ, એનવાયરમેન્ટ સાયન્સ અને જિઓઈન્ફોર્મેટીક્સના સમન્વય

કરીને ઉચ્ચ અભ્યાસમાં રહેલી ઉત્તમ તકો વિશે સમજાવેલ. ડો. હિમાંશુ કાપસે હેડ ઈન્સ્ટ્રુમેન્ટેશન એન્ડ કંટ્રોલ દ્વારા જિઓઈન્ફોર્મેટીક્સ વિષય પર લાગુ વિવિધ શરકારી યોજનાઓ અને ખાનગી સેક્ટરમાં લાગુ ઉપયોગમાં લેવાતી જિઓઈન્ફોર્મેટીક્સ ટેકનોલોજી વિશે માહિતી આપી હતી. સમગ્ર પ્રોગ્રામનું સંચાલન કૃપાલ દુધાર દ્વારા કરવામાં આવેલ. પ્રોગ્રામના અંતે વિદ્યાર્થીઓ દ્વારા બનાવેલ પોસ્ટરમાં અનુક્રમે જેની પોસ્ટ, વાસુ સુરાણી અને ઉત્સવ પટેલનું પ્રદર્શન ઉત્કૃષ્ટ રહેલ.

આઈસ્ટાર કોલેજ ખાતે એન.એસ.એસ. વિભાગ દ્વારા રક્તદાન અને થેલેસેમિયા પરીક્ષણનું આયોજન



ચારુતર વિદ્યામંડળ સંચાલિત આઈસ્ટાર કોલેજના રાષ્ટ્રીય સેવા યોજના (એન. એસ. એસ.) વિભાગ દ્વારા રેડ ક્રોસ સોસાઈટીના સહયોગથી રક્તદાન શિબિર અને થેલેસેમિયા જાગૃતતા અને પરીક્ષણનું આયોજન આઈસ્ટાર કોલેજ ખાતે કરવામાં આવ્યું હતું. આ શિબિરનું ઉદ્ઘાટન આઈસ્ટાર કોલેજના પ્રિન્સીપાલ ડો. નીરમલકુમારે જી.આઈ. દ્વારા કરવામાં આવ્યું હતું. એન. એસ. એસ.ના ડો. મયંક પટેલ, ડો. ધરાજ કારિયા; ડો. ઉત્તતિએન પટેલ અને રાધિકા શાહએ કાર્યક્રમને સફળ બનાવવા માટે ભારે જોડમત ઉઠાવી હતી. આ શિબિરમાં ૨૯૪ વિદ્યાર્થીઓ એ થેલેસેમિયા પરીક્ષણ અને ૯૪ વિદ્યાર્થીઓએ રક્તદાન કર્યું હતું. ચારુતર વિદ્યામંડળ, વિ. વિ. નગર અને લાર્ડનસ ક્લબ, આણંદ ના નાણાકીય સહયોગથી આ આયોજન સફળતા પૂર્વક સમ્પન્ન થયું હતું. આઈસ્ટાર કોલેજના પ્રિન્સીપાલ ડો. નીરમલકુમારે રક્તદાન અને થેલેસેમિયા કરનાર વિદ્યાર્થીઓને બિરદાવ્યા હતા.

આઈસ્ટારના પર્યાવરણ વિભાગ દ્વારા યોજાયેલ એલબની ટૉક

ચારુતર વિદ્યામંડળ સંચાલિત આઈસ્ટાર કોલેજના પર્યાવરણ વિભાગ દ્વારા તાજેતરમાં એલબની ટૉક કાર્યક્રમ યોજાયો હતો. જેમાં પર્યાવરણ વિભાગના ભૂતપૂર્વ વિદ્યાર્થીશ્રી નિશાંત સોલંકી, એકઝીક્યુટીવ ઓફિસર, એલેમ્બિક, વડોદરા, હાજર રહ્યા હતા. કાર્યક્રમની શરૂઆતમાં ફેકલ્ટી ડૉ. હિરેન સોનીએ એલબની વિશે પ્રાસંગિક ઉદ્બોધન કર્યું હતું. ત્યારબાદ શ્રી નિશાંત સોલંકીએ આજનાં પ્રદૂષિત વાતાવરણને ધ્યાનમાં રાખીને એમ.એસ. સી.ઈએસટી વિભાગના લગભગ ૮૦ જેટલા વિદ્યાર્થીઓને પર્યાવરણનું મહત્વ તેમજ તેની જાળવણી વિશે વાકેફ કર્યા હતા.

વધુમાં તેઓએ ઔદ્યોગિક એકમોમાં ચાલી રહેલ નવિન પદ્ધતિ ઝીરો લીકવીડ ડિસ્ચાર્જ અને પ્રદૂષિત પાણીનું શુદ્ધિકરણ વિશે ઊંડાણ પૂર્વક માહિતી આપી હતી. તદુપરાંત, નવીન પદ્ધતિના અમલીકરણની ઔદ્યોગિક એકમોને થતાં ફાયદા અને પર્યાવરણને થતાં લાભ વિશે વિસ્તૃત ચર્ચા કરી હતી.

કાર્યક્રમનાં અંતમાં શ્રી નિશાંત સોલંકીએ વિદ્યાર્થીઓની કારકિર્દી અને ઉજ્જવળ ભવિષ્ય વિશે પણ પ્રકાશ પાડ્યો હતો.

આઈસ્ટારનાં વિદ્યાર્થીઓ ઉત્રાણ, પાવર પ્લાન્ટની મુલાકાતે

ચારુતર વિદ્યામંડળ સંચાલિત આઈસ્ટાર ઈન્સ્ટ્રુમેન્ટેશન એન્ડ કંટ્રોલ વિભાગના વિદ્યાર્થીઓએ ઉત્રાણ, ગેસ બેજ પાવર પ્લાન્ટની મુલાકાત લીધી. આ શૈક્ષણિક મુલાકાતમાં પ્લાન્ટના જુદા જુદા વિભાગોમાં વપરાતા ઈન્સ્ટ્રુમેન્ટસ તથા તેને લગતી સંચાલનની કાર્ય પ્રણાલીની વિસ્તૃત માહિતી ત્યાંના ઈજનેરશ્રી આમીર સાહેબ, શ્રી હેમત પટેલ તથા શ્રી જતીનભાઈ દ્વારા પૂરી પાડવામાં આવી. ત્યાં સ્ટીમ તથા ગેસ ટરબાઈન હોઈ ઓન ડિમાન્ડ પાવર જનરેશન કરવામાં આવે છે. પાવર જનરેશન માટે વિવિધ પરિમાણનું સંચાલન પીએલસી થકી કરવામાં આવે છે. ડીસીએસ તથા એસસીએડીએ સિસ્ટમથી નિરીક્ષણ, આકલન કરી સુચારુ સંચાલન કંટ્રોલરૂમમાંથી કરવામાં આવે છે. ત્યાં વપરાતા વાલ્વ તથા ટ્રાંસમીટરની ઉપયોગીતા પણ વિદ્યાર્થીઓને સમજાવવામાં આવી. આ મુલાકાતનું આયોજન ડો. હિમાંશુ કાપસે, હેડ, ઈન્સ્ટ્રુ. એન્ડ કંટ્રોલ, આઈસ્ટાર દ્વારા કરવામાં આવ્યું હતું.



ચારુતર વિદ્યામંડળ સંચાલિત આઈસ્ટારની મુલાકાતે પધારેલ પર્યાવરણવિદ્ ડૉ. નાબુયોશી ચામાશીતા(જાપાન)નું અભિવાદન કરતા માનદ મંત્રી શ્રી ડૉ. એસ.જી. પટેલ તથા સંસ્થાના નિયામક શ્રી ડૉ નિર્મલકુમાર ઈન્સેટમાં વિદ્યાર્થીઓ સાથે તજજ્ઞશ્રી દશ્યમાન થાય છે.



આઈસ્ટાર પ્રોલેજમાં વિશ્વ પર્યાવરણ દિવસની ઉજવણી કરવામાં આવી હતી. આ પ્રસંગે સીવીએમના વાઈસ પ્રીડન્ટ મનીષભાઈ પટેલ તથા અન્ય સભ્યોના હસ્તે પર્યાવરણને અનુકૂળ એવા વૃક્ષોનું રોપણ કર્યું હતું. તથા બીટપ્લાસ્ટીક પોલ્યુસનના આગ્રહ્ય કોલેજના કર્મચારીઓ તથા વિદ્યાર્થીઓને પ્લાસ્ટીકનું પ્રદુષણ અટકાવવાના સત્તુર મંડ્રો કેન્ડલી બેગનું વિતરણ કરવામાં આવ્યું હતું. આ પ્રસંગે ચારુતર વિદ્યામંડળના અધ્યક્ષ બીજુભાઈ પટેલે સંસ્થાની ચુંદર કામગીરી બદલ આભાર માન્યો હતો.



II વિશ્વકુલ II

કોલેજવુલ

આઈસ્ટાર અને એનવીપાસ કોલેજનાં સંયુક્ત ઉપક્રમે એક દિવસીય રાષ્ટ્રીય પરિસંવાદ યોજાયો.

ચાતુર વિદ્યામંડળ સંચાલિત આઈસ્ટાર અને એનવીપાસ કોલેજના સંયુક્ત ઉપક્રમે તાજેતરમાં પર્યાવરણ, પ્રદૂષણ અને વાતાવરણમાં ફેરફાર વિષય પર એક દિવસીય રાષ્ટ્રીય પરિસંવાદ યોજાયો હતો. કાર્યક્રમની શરૂઆતમાં દીપ્તજાનક પ્રસંગે મુખ્ય અતિથિ તરીકે ચાતુરેટ મુનિસિપલિટીનાં પ્રો-વોસ્ટ પ્રો. બી.જી. પટેલ અને ચાતુર વિદ્યામંડળના માનદ મંત્રીશ્રી ડો. એસ.જી. પટેલ હાજર રહ્યા હતા. ત્યાર બાદ આઈસ્ટાર કોલેજના પ્રિન્સિપાલશ્રી પ્રો. નિર્મલ કુમારે મુખ્ય મહેમાનોનું ભાવભરી સ્વાગત કર્યું હતું. એનવીપાસ કોલેજના જીવવિજ્ઞાન અને પર્યાવરણ વિભાગના વડાશ્રી ડો. રીટા કુમારે સમગ્ર પરિસંવાદ વિષે વિસ્તૃત માહિતી આપી હતી અને કાર્યક્રમની રૂપરેખા વર્ણવી હતી. જેમાં તેમણે પર્યાવરણના પ્રદૂષણ અને તેનાથી થતી પ્રતિકૂળ અસરો જેવી કે ઝીંક બાઉન્ડ નેસીસ, એસીડ રેઈન, ગ્લોબલ વોર્મિંગ, ઓઝોન હોલ-અપ્રોપ્રિએટ ઓફ નેસીસ, ક્લિમેટચેન્જ ઓગળવું, દરિયાઈ સપાટીનું વધવું, દરિયાઈ ખારાશ, અને તેનાથી થતી જૈવિક ષટકોનું આશંકા પ્રમાણ વિશે વિસ્તૃત માહિતી આપી હતી. ત્યાર બાદ મુખ્ય અતિથિશ્રી પ્રો. બી.જી. પટેલે ઉચ્ચ અભ્યાસમાં લક્ષ્યોને આધુનિકરણ, ગ્લોબલ વોર્મિંગ પાછળ કારણભૂત એવી માનવીય પ્રવૃત્તિઓ, વિજ્ઞાન સેને રાષ્ટ્રીય શિક્ષણવિદોનો સમાવેશ અને તેમનું યોગદાન અને ઝીંકબાઉન્ડ નેસીસ એકતીકરણ, વાતાવરણનું પ્રદૂષણ ઘટાડવા માટે જાતની સ્થિત કાર્યોનું ટ્રેનિંગ યંત્રો અને તેના માટેનાં સંપૂર્ણ માપદંડો વિશે વિસ્તૃત માહિતી આપી હતી. ચાતુર વિદ્યામંડળના માનદ મંત્રીશ્રી ડો. એસ.જી. પટેલે રાજ્ય તેમજ રાષ્ટ્રીય કક્ષાએ આ પ્રકારના પરિસંવાદોના વધુને વધુ આયોજન અને વિદ્યાર્થીઓ દ્વારા તેની ઉપયોગીતા પર વિશેષ ભાર મૂક્યો હતો. વધુમાં તેમણે જણાવ્યું હતું કે આ પ્રકારના સેમિનારથી આજનો પુલાવર્ગ એક ઘઈને પર્યાવરણમાં ફેલાતા પ્રદૂષણને ઘટાડવા સક્તિમાન બનશે. ઉદ્દેશાટન પ્રસંગની આભારવિધિ અને સંવાદન ડો. કિરેન સોનીએ કરી હતી. સમગ્ર કાર્યક્રમનું સંચાલન ડો. સુસ્મિતા સહુએ કર્યું હતું. ગુજરાત ઈકોલોજી કમિશન, ગાંધીનગરના પ્રોજેક્ટ મેનેજર શ્રી અંકુર પટેલ પણ આ દરમિયાન શોભાપમાન રહ્યા હતા. સેમિનારના આયોજન માટે ગુજરાત ઈકોલોજી કમિશન તરફથી ડ્ર. એક લાખનું અનુદાન પ્રાપ્ત થયું હતું.

આઈસ્ટાર

ચાતુર વિદ્યામંડળ સંચાલિત ઈન્સ્ટિટ્યુટ ઓફ સાયન્સ એન્ડ ટેકનોલોજી ફોર એડવાન્સડ સ્ટડીઝ એન્ડ રિસર્ચ(આઈસ્ટાર)સંસ્થાના પર્યાવરણશાસ્ત્ર અને ટેકનોલોજી વિભાગે આંતરરાષ્ટ્રીય સ્તરે સંશોધન ક્ષેત્રમાં હરણકાળભરી નોંધપાત્ર સિદ્ધિ હાંસલ કરી છે.

આ સંસ્થાના એન્વાયરમેન્ટલ સાયન્સ એન્ડ ટેકનોલોજી વિભાગ (EST/ISTAR) અને જાપાનના નેશનલ ઈન્સ્ટિટ્યુટ ઓફ એડવાન્સડ ઈન્ડસ્ટ્રીયલ સાયન્સ એન્ડ ટેકનોલોજી (AIST) વચ્ચે થયેલા આંતરરાષ્ટ્રીય કરાર અંતર્ગત એન્વાયરમેન્ટલ સાયન્સમાં પીએચ.ડી. કરતી બે વિદ્યાર્થીનીઓ કુદીપા પ્રેમચંદ લાલવાણી અને પૂજા નિરવકુમાર ઠાકરને સંશોધન અર્થે ૬ માસની મુદત માટે જાપાન મોકલવામાં આવ્યાં હતાં. બન્ને વિદ્યાર્થીનીઓએ ડો. નિર્મલકુમાર જે.આઈ (ભારત) અને ડો. નોબુયોષી યામાશીતા (જાપાન)ના સંયુક્ત માર્ગદર્શન હેઠળ સંશોધન કાર્ય હાથ ધર્યું હતું. વાતાવરણમાં વધતાં જતાં પ્રદૂષકો જેવાં કે પસ્કલોરીનેટ્સ આલ્કાઈલ રસાયણો જે કુદરતી રીતે વાતાવરણમાં હોતાં નથી પરંતુ વધતાં

INSTITUTE OF SCIENCE AND TECHNOLOGY FOR ADVANCED STUDIES AND RESEARCH (ISTAR)

ALUMNI ASSOCIATION (ISTARAA)

ANNUAL ALUMNI MEET-2018 AND ALUMNIFELICITATION PROGRAMME

ISTARAA has organized Annual Alumni Meet-2018 on the occasion of 19th Annual day of ISTAR on 5th March 2018, Monday. Around seventy (70) distinguished alumni from various departments of ISTAR have remained present despite of their busy schedules.

The gathering started with light refreshment at 2:00 p.m. Dr. Niraj Patel, Faculty, OC department welcomed all and introduced Dr. Nirmalkumar, I/C Principal, ISTAR and Prof. J. H. Patelsir.

Principal Sir had addressed the Alumni members in which he congratulated the alumni for achieving success in their professional career and also requested them to remain associated with the institute for the well-being of current students. Prof Dr. J. H. Patel also shared his valuable thoughts on Alumni association.

Eleven distinguished alumni members who have achieved land mark in their professional career were felicitated by the institute on this occasion. Dr. Niraj H. Patel, Assistant Professor, Organic Chemistry Department, coordinator, ISTARAA & Mr. Baiju G. Verghese, Assistant Professor, MIHS Department and Co-coordinator ISTARAA have conducted alumni Felicitating programme. Alumni were felicitated by offering a shield by Principal and Dr. J. H. Patel. All the felicitated alumni have expressed their willingness to give their support in arranging industrial visit and also in campus placement.

The vote of thanks was proposed by Mrs. Dhruvi S. Patel, Faculty of Environment Science & Technology Department.

Report submitted to Principal Office

By Dr. Niraj H. Patel, Coordinator, ISTARAA

12th March-2018

રાસાયણિક ઘટકો પર યોજાયેલ એક દિવસીય કાર્યશાળા

ચારુતર વિદ્યામંડળ સંચાલિત આઈસ્ટાર ખાતે તાજેતરમાં આઈસ્ટારના પર્યાવરણ વિભાગ તેમજ એનવીપાસના સંયુક્ત ઉપક્રમે રાસાયણિક ઘટકો પર એક દિવસીય કાર્યશાળા યોજાઈ હતી. જેમાં જાપાન સ્થિત એઆઈએસટીના ચીફ સિનિયર વૈજ્ઞાનિક ડૉ. નોબુયોશી યામાશીતા ઉપસ્થિત રહ્યા હતા. કાર્યક્રમનું સંચાલન આઈસ્ટારના પર્યાવરણ વિભાગના ફેકલ્ટી ડૉ. હિરેન સોનીએ કર્યું હતું. શરૂઆતમાં પ્રાર્થના ગાન, ત્યારબાદ દીપપ્રાગટ્ય અને મહાનુભાવોનું પુષ્પગુચ્છથી સ્વાગત કરવામાં આવ્યું હતું. પ્રાસંગિક ઉદ્બોધનમાં સંસ્થાના નિયામક પ્રો. ડૉ. નિર્મલકુમારે સમગ્ર કાર્યશાળાનો હેતુ તેમજ રૂપરેખા વિશે છણાવટ કરી હતી. તેમણે પર્યાવરણમાં રહેલા વિવિધ પ્રકારના રાસાયણિક ઘટકો તેમજ તેની ગંભીરતા અને પ્રવર્તમાન સંશોધન વિશે જણાવ્યું હતું. ત્યાર બાદ વીપી સાયન્સ કોલેજના આચાર્યશ્રી ડૉ. ભાવેશ પટેલે પર્યાવરણમાં રહેલા વિવિધ રસાયણો અને તેના ઘટકો પર પ્રકાશ પાડ્યો હતો. કાર્યશાળામાં વિવિધ કોલેજોના મહાનુભાવો ડૉ. જે.એચ.પટેલ તેમજ એનવી પટેલ સાયન્સ કોલેજના પર્યાવરણ વિભાગનાં વડાં ડૉ. રીટા એન. કુમાર ઉપસ્થિત રહ્યાં હતાં. આ કાર્યશાળામાં ખેતીવાડી કોલેજ, સેફ્ટી વિભાગ, આઈસ્ટારના પર્યાવરણ વિભાગ તેમજ એનવી પટેલ સાયન્સ કોલેજના પર્યાવરણ વિભાગના આશરે ૧૮૦ જેટલા વિદ્યાર્થીઓએ ઉત્સાહપૂર્વક ભાગ લીધો હતો.

પર્યાવરણ વિભાગની સિદ્ધિ

ચારુતર વિદ્યામંડળ સંચાલિત આઈસ્ટાર કોલેજના પર્યાવરણ વિભાગમાં ડૉ. નિર્મલકુમાર (નિયામક, આઈસ્ટાર)ના માર્ગદર્શન હેઠળ પીએચ.ડી.માં અભ્યાસ કરતી વિદ્યાર્થીની દીપા લાલવાણીએ એમ. એસ. યુનિવર્સિટી વડોદરામાં 'કલાયમેટ ચેન્જ' વિષય પર યોજાયેલ નેશનલ સેમિનારમાં પોસ્ટર પ્રેઝન્ટેશનમાં પ્રથમ સ્થાન મેળવ્યું હતું તેણીએ ડૉ. નોબુયોશી યામાશીતા (સુકુલા, જાપાન)ના માર્ગદર્શન હેઠળ પર્સિસ્ટન્ટ ઓર્ગેનિક પોલ્યુટન્ટ જેવા તદ્દન નવા અભિગમને રજૂ કર્યો હતો.

આ પ્રસંગે સીવીએમના ચેરમેન શ્રી ડૉ. સી. એલ. પટેલ, માનદ સેક્રેટરી ડૉ. એસ. જી. પટેલ અને ડાયરેક્ટર જનરલશ્રી ડૉ. નિખિલ ઝવેરીએ અભિનંદન પાઠવ્યા હતા.



આઈસ્ટારનો ૧૯મો વાર્ષિક દિન ઉજવાયો



આણંદ, તા.૯

ચારૂતર વિદ્યામંડળ સંચાલિત આઈસ્ટાર કોલેજનો ૧૯મો ‘વાર્ષિકો દિન’ સી.વી.એમ.ના અધ્યક્ષ માનનીય ભીખુભાઈ પટેલના પ્રમુખ પદે યોજાયો હતો. આ પ્રસંગે મુખ્ય મહેમાન પદે અમુલ ડેરી, આણંદના મેનેજિંગ ડાયરેક્ટર ડૉ. કે. રશ્મિ ઉપસ્થિત રહ્યાં હતા. સી.વી.એમ.ના માનદ્ મંત્રી ડૉ.એસ.જી. પટેલ તથા ડાયરેક્ટર જનરલ ડૉ. નિખીલ ઝવેરી પણ ઉપસ્થિત રહ્યાં હતા.

સંસ્થાના વડા પ્રો. નિર્મલકુમારે સૌને આવકારીને સંસ્થાની વાર્ષિક પ્રવૃત્તિઓનો સવિસ્તર અહેવાલ આપ્યો હતો. ત્યારબાદ વર્ષ દરમિયાન શૈક્ષણિક તેમજ

ઈત્તર પ્રવૃત્તિઓમાં વિશિષ્ટ પ્રદર્શન કરનાર તેમજ યુનિવર્સિટીમાં સુવર્ણ ચંદ્રક મેળવનાર વિદ્યાર્થીઓનું બહુમાન કરવામાં આવ્યું હતું. જેનું સંચાલન મધ્યસ્થ સમિતિના વાઈસ પ્રેસીડેન્ટ રૂપે શાહે કર્યું હતું. મિસા. એશીયન પેઈન્ટ વિગેરે ઔદ્યોગિક સંસ્થાઓ દ્વારા વિદ્યાર્થીઓને સ્કોલરશીપ તેમજ પ્રમાણપત્ર એનાયત કરવામાં આવ્યા હતા.

મહેમાનોના હસ્તે વિદ્યાર્થીઓના મેગેઝીન ‘આઈસ્ટાર ગેલેક્સી’નું વિમોચન કરવામાં આવ્યું હતું. ડૉ. કે. રશ્મિએ આઈસ્ટારના અભ્યાસક્રમો તેમજ વિવિધ પ્રવૃત્તિઓને બિરદાવીને વિદ્યાર્થીઓને તેમની કારકિર્દી ઘડવા માટે

સુંદર માર્ગદર્શન પૂરું પાડ્યું હતું. વધુમાં તેઓએ સોશયલ મીડિયાનો યોગ્ય ઉપયોગ કરવાની અને તેની પાછળ ખોટો સમય બરબાદ ન કરવાની શીખ આપી હતી. તેઓએ વિદ્યાર્થીઓને મૂલ્ય આધારીત જીવનનું મહત્વ પણ સમજાવ્યું હતું. સમારંભના પ્રમુખ ભીખુભાઈ પટેલે આઈસ્ટારની પ્રવૃત્તિઓને બિરદાવીને ઉત્તરોત્તર પ્રગતિ કરવાની શુભેચ્છા પાઠવી હતી. આ પ્રસંગે સી.વી.એમ.ના માનદ્ સહ મંત્રીઓ બી.પી.પટેલ, વી.એમ. પટેલ, વિવિધ કોલેજના આચાર્ય અને પ્રાધ્યાપક તેમજ સંસ્થાના ભૂતપૂર્વ વિદ્યાર્થીઓ અને સંસ્થા સાથે સંકળાયેલ ગેસ્ટ ફેકલ્ટી ઉપસ્થિત રહ્યાં હતા.

CELEBRATION OF WORLD ENVIRONMENT DAY @ ISTAR

On the account of **World Environment Day - 2018**, Respected Shri Manish Sir, Vice-President of CVM, has planted the saplings of environment-friendly plant species in ISTAR campus. To prevent the plastic pollution, he also inaugurated the distribution of eco-friendly bags to create more awareness among people. He has taken an initiative and novel drive of **“My Campus, Clean Campus”** in all the institutions of CVM.

World Environment Day (WED) occurs on the **5th June every year**, and is the United Nation's principal vehicle for encouraging awareness and action for the protection of our environmental components. World Environment Day [WED] was established by the UN General Assembly in **1972** on the first day of the Stockholm Conference on the Human Environment, resulting from discussions on the integration of human interactions and the environment. Two years later, in **1974** the first WED was held with the theme **“Only One Earth”**. It has been a flagship campaign for raising awareness on emerging environmental issues from marine pollution, human overpopulation, and global warming, to sustainable consumption and wildlife crime. WED has grown to become a global platform for public outreach, with participation from over **143 countries** annually. Each year, WED has a new theme that major corporations, NGOs, communities, governments and celebrities worldwide adopt to advocate environmental causes.

Dr. Harsh Vardhan, Minister of Environment, Forest and Climate Change, and Erik Solheim, United Nations Under-Secretary-General and Head of UN Environment, jointly announced that India will be hosting the global World Environment Day celebrations on 5 June 2018.

“Beat Plastic Pollution”, the theme for World Environment 2018, urges governments, industry, communities, and individuals to come together and explore sustainable alternatives and urgently reduce the production and excessive use of single-use plastic polluting our oceans, damaging marine life and threatening human health.

The Government of India has committed to organizing and promoting the World Environment Day celebrations through a series of engaging activities and events generating strong public interest and participation. From pan-Indian plastic clean-up drives in public areas, national reserves and forests to simultaneous beach clean-up activities – India will lead the initiative by setting an example.

So use always non- plastic materials to keep our surroundings clean and green.





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