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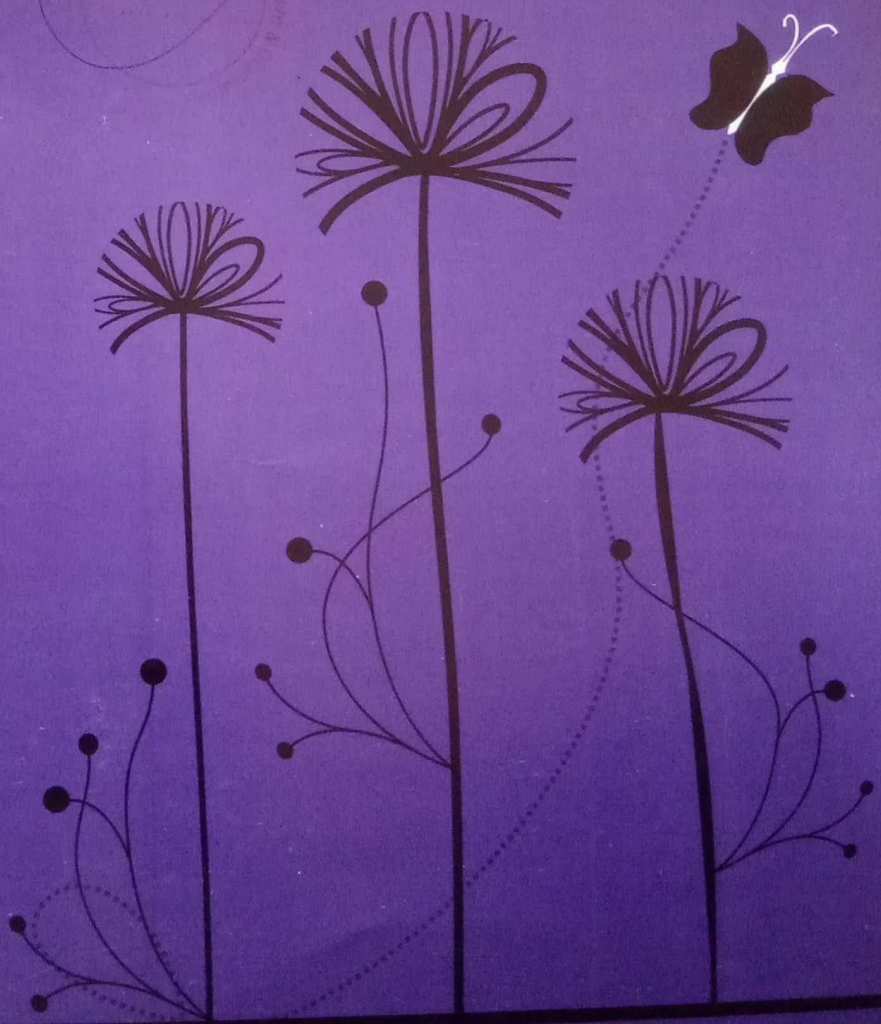
Swami Keshvanand Institute of Technology, Management & Gramothan

# THE SKIT TIMES

Spring

2012



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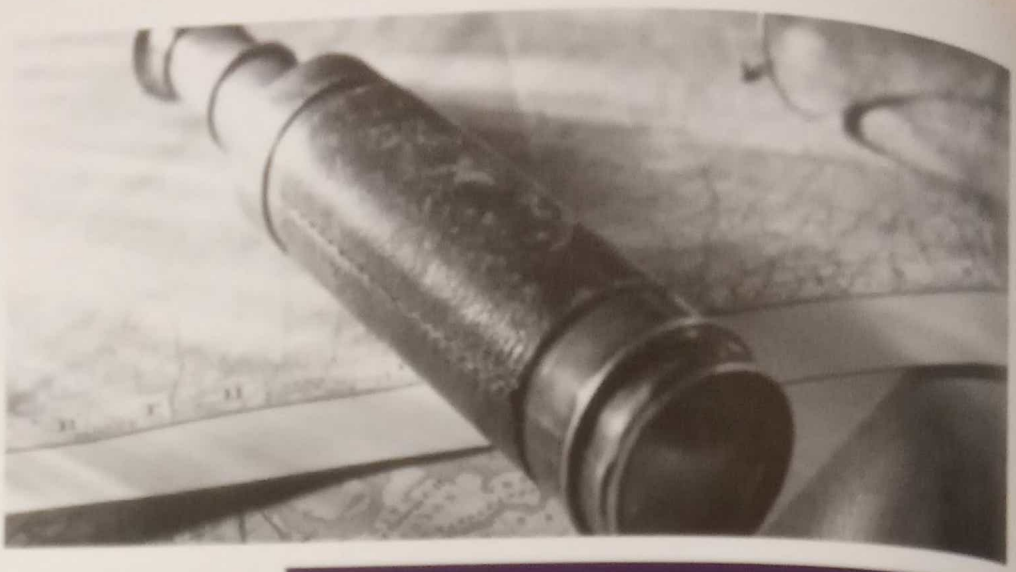
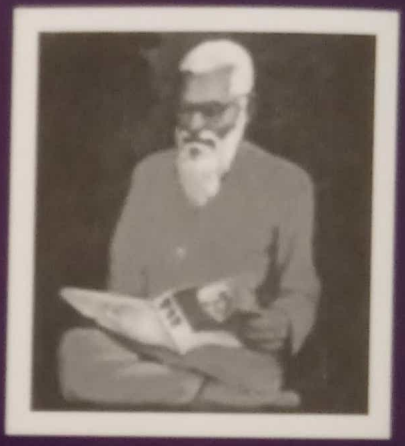


## OUR MENTOR & PATH FINDER



**Swami Keshvanand Ji**
**(1883 - 1972)**

## VISION

To promote quality education, training and research in the field of engineering by establishing effective interface with industry and to encourage faculty to undertake industry sponsored projects for students.

## MISSION

To promote higher learning in advanced technology and industrial research to make our country a global player.

# EDITORIAL

Dear Readers

India is a country rich with cultural diversities, myriad hues of gods and goddesses, several aspects of mythological and traditional origins which form the basis of numerous festivals celebrated round the year. The festivals do not just offer people a temporary reprieve from their daily grind but also imbued with deep inner significance, each festival is a multifaceted celebration. Like folklore and many persistent social and religious customs, festivals too have a core of truth hemmed in too often by superstition and sham.

Some of the sacred festivals have an astronomical significance. Some were fixed by the spiritual instructors of old to coincide with the seasons, for seasons are the reflections of the cosmic processes in invisible nature and the climatic peculiarities of the seasons correspond to the psychic and spiritual tendencies of humanity. Festivals also make people proud of where they live and the community based feelings get rekindled through such celebrations. Unfortunately, today if we look at our immediate surroundings and closely observe our collective psyche, it would not be wrong to say that we are rapidly loosing our artistic thought, the softer brain, essence of cultural identity and the true spirit of festivals.



The youth should come forward to preserve the rich heritage and the values for which India is widely known.

Happy Reading!

Dr. Niraja Saraswat
Editor-in-Chief

# CAMPUS VIBES

## NATIONAL CONFERENCE ON EMERGING TRENDS OF RESEARCH IN MATERIAL SCIENCE

Department of Physics, SKIT organised a National conference on 'Emerging Trends of Research in Material Science' on 12-13 November 2011 in collaboration with University of Rajasthan, Jaipur. Sponsored by Department of Science & Technology, Govt. of India, New Delhi, the conference aimed at providing a perfect platform to interact and exchange information and new advancements of the concerning fields among scientists, academicians, research scholars, students and experts from IIT's, NIIT's and other universities. The main focus was on dissemination of information, and acquainting young engineers with the plethora of opportunities in the field of material sciences. The conference echoed a wide and overwhelming response with 200 delegates across the country and more than 100 abstracts of research papers from all over India and abroad like Austria, Germany, UK, Greece and Belgium.

The inaugural ceremony witnessed the presence of Prof. R.P. Yadav, Vice Chancellor RTU as Chief Guest, Prof. G. D. Sharma, Director JEC Kukas as Guest of Honour. Prof. S. K. Calla, Principal and Director (D&W) SKIT extended a warm welcome to all the guests and delegates. Prof. Y.K. Vijay, Director CPDE enlightened the participants with the insights of the true meaning and ideal journey of research. Prof. R.P. Yadav, Chief Guest of the occasion said that such types of conferences are very beneficial for the students as these will help for advancement in research. He focussed on the need that now private engineering colleges should also be given permission to start Ph.D programme. He also emphasized on the need to develop new materials in order to combat limited resources in nature. He correctly gauged the importance of material by quoting that an ounce of material is more important than tonne of knowledge. Mr. K.R. Bagaria, Director SKIT discussed the benefits of privatization and oriented the gathering to become innovative and creative in their endeavours. He also appreciated the initiative of Prof. R.P. Yadav regarding the enrolment of Ph.D. students in private engineering colleges.

The vote of thanks by Prof. (Dr.) S. L. Surana, Director (Academics) marked the closure of the inaugural ceremony. He specially thanked Prof. Yadav for sparing his valuable time to attend the conference. The entire conference deliberations were scheduled for 8 sessions consisting of 6 oral and 2 poster presentations. Each technical session was enriched with informative talks delivered by renowned speakers. The presentations and papers were evaluated by eminent session chairs from across the domain. Definitely the organization of the conference coupled with the technical sessions has paved the way for new research directions by establishing the opportunities in the field of materials and their applications.



## NATIONAL CONFERENCE IN COMPUTER SCIENCE ENGINEERING

National Conference on 'Emerging Trends in Computer Engineering' was organized in SKIT by the department of Computer Science on 26 November 2011. The aim of the conference was to provide a platform for expert technical exchanges and exhibitions regarding the advanced technologies and innovations in the field of computer engineering. The conference began with the lamp lighting ceremony .The eminent guests and dignitaries who attended the conference included Mr. Rajendra Bhanawat, Prof. (Dr.) Deepak Garg, Mr. A.S. Bhatnagar, Prof. (Dr.) R.K. Joshi, Mr. Somesh Gupta, Mr. Kunal Dureja and Dr. S.C. Jain.

Mr. Rajendra Bhanawat said that Rajasthan has a lot of potential for the growth of computer engineering and could be one of the promising states in the field. Dr. Deepak Garg, a senior member of IEEE and Secretary of Delhi Section Computer Society said that learning is an on-going process which can be augmented with surroundings. Dr. R.K. Joshi from IIT Bombay shared some valuable insights with the students regarding the latest advances in Computer Engineering. Subsequently Mr. A.S Bhatnagar (V.P. HCL Infosystems) and Mr. Kunal Dureja also enlightened the audience with their speeches. Mr. K.R.

Bagaria, Director SKIT motivated the students to emulate the teachings of the guests and inspired them to become excellent technocrats and innovators. The inaugural ceremony came to an end with the vote of thanks proposed by Prof. (Dr.) S.L. Surana, Director (Academics). The students and faculty members of various colleges presented their research papers on varied themes during the conference.

## SYMPOSIUMS ON CHEMISTRY & ENVIRONMENT

On 23 December 2011, a symposium on chemistry & environment was organized in SKIT as 2011 was the international year of chemistry. Prof. K. N. Joshi from the institute of Development Studies was the Chief Guest and the Guest of Honor was Prof. P.S. Verma. The program began with the welcome note by Shri Raja Ram Meel, the Chief Patron


of SKIT, who warmly welcomed the delegates on behalf of SKIT family. Prof. Archana Saxena, Head, Dept. of Chemistry introduced the symposium, invited talks and paper presentations. Prof. P.S Verma, coordinator of CS programme & member of university senate talked about the various problems plaguing the environment like pollution, plastics and population. He encouraged the use of muscle power over fossil fuels and urged the gathering to change their lifestyle. Talking about green chemistry as an emerging concept, he also suggested two ways to curb pollution- namely simplicity and miserliness. Mr. K. R. Bagaria Director, SKIT said that we need to find refined ways for sewage disposal.

Prof. (Dr.) S.L. Surana, Director (Academics) then took over the proceedings and encouraged all to conserve water and said that it is everyone's responsibility to protect the environment. The chief guest, Prof. K N Joshi, a scientist in remote sensing shared his thoughts. Prof. Joshi threw light on how the technology of remote sensing can be used to study the environment. He also talked about water and the need for its conservation. He inspired everyone to develop means to tackle all such problems in an economically feasible manner. The program ended with a note of thanks by Prof. S.K. Calla, Principal and Director (D&W) who said that chemistry is an important part of our lives and we must apply its regulations to solve the problems of society.

## ALL INDIA SEMINAR ON POWER ELECTRONICS APPLICATIONS TO POWER SYSTEMS

Department of Electrical Engineering SKIT, in collaboration with


Institution of Engineers (IEI), organised a two day seminar on Power Electronics Applications to Power System PEAPS-2011. The seminar witnessed the gracious presence of Mr. Rakesh Nath, technical member of APIEL, Director-Nuclear power Corporation as Chief Guest ,Mr. P.M. Bharadwaj, Director IL ,Kota as Guest of Honour, Mr. Shanti Prasad, Ex-chairman, Rajasthan Electricity Regulatory Commission as Guest of Honour, Mr. P.C. Sanghi, Former President IE, G.S. Dangayach, Secretary, IE. The seminar provided a forum for discussion of new ideas, research development applications and the latest advancements in the field of power electronics. The chief guest, guest of honour, Mr. K.R. Bagaria, Director, SKIT, Prof. S.K. Calla, Principal and Director (D&W), SKIT, expressed their views on the occasion. The delegates came from various NITs and eminent engineering colleges across the country.

The second day of the conference commenced with the key-note address of Prof. Bhim Singh, an acclaimed academician and professor of IIT, Delhi. 18 research papers were presented on the day. Discussions included concerns of power quality, protection of critical loads, sensitive processes, promotion and use of renewable energy sources, smart grid concept and issues related to transmission and distribution sectors which can be well addressed with applications based on power electronic devices. The conference provided an insight into the existing procedures and applications based on semiconductor technology and contributed in evolution of new generation power systems. At the end Prof. S.K. Calla, Principal and Director (D&W) SKIT, proposed a vote of thanks to invited guests and dignitaries.

## INDUSTRIAL TOUR

- A four day industrial visit for III year electrical students was organized in February 2012. The students visited Tehri Dam Hydro Power Plant, BHEL Haridwar and C & S Electric Ltd., Noida. Various officials at Hydro Power plant guided and made the students familiar with the functioning of power plant.

- To prepare students for global workplaces, illustrate theoretical concepts, make abstract concepts more concrete, an industrial tour was organized for VI Semester CS/IT students.

The details are as under:

| | |
|---|---|
| Place : | Neemrana, Dehradun, Rishikesh, Mysore |
| Industry : | Parle G, ONGC, Bhartiya Petroleum Organization |
| Date: | 2-7 March 2012 |
| Accompanied by: | Ms. Sushila Bishnoi, Sr. Lecturer, Ms. Neha Kapur, Sr. Lecturer, Mr. Naveen Jain, Lecturer, Mr. Vipin Jain, Lecturer, Dept. of CS/IT. |

- A five day industrial visit for III year students of Electronics and Communication Engineering was organized from 7-12 February 2012. The students visited (I) Tata Electric and Locomotive Limited, Punpri (II) Phillips India, Pune (III) Bajaj Auto, Akurdi (IV) Bajaj Tempo at Akurdi. Faculty members of EC Department Mr. Jitendra Gautam, Mr. S. Sarabjeet Singh, Miss Sheetal Verma, and Ms. Monika Agarwal accompanied the students.

## REPUBLIC DAY CELEBRATIONS

The institute celebrated the 63 Republic day in an atmosphere resounded with patriotism and veneration for the freedom fighters. The celebration began with tricolour hoisting ceremony.

Mr. Surja Ram Meel, Chairman, SKIT expressed his concern over declining enthusiasm on national days. He said that nowadays people prefer to violate rules and regulations. He also warned that expanding population and unemployment are serious issues and challenges confronting Indians. Dr. Anil Bafna, Vice Chairman, SKIT termed Republic Day as a day of introspection and resolutions. He invoked the student community to play a vital role in innovation and development of India. He advised students to frame a charter of their own lives and be guided by that charter to succeed in life. Mr .K. R. Bagaria, Director, SKIT talked about two significant rights of RTI and RTE. He also expressed his satisfaction with the concrete and important role of Indians in infrastructure and power sectors. He asked students to embrace opportunities with commitment and positive outlook.

Prof. (Dr.) S.L. Surana, Director (Academics) elaborated the importance of time management. He asked students to manage their tasks well in advance and be planned in all their endeavours. Prof. D.K. Jain, Director, System Development, SKIT laid stress on the fact that integrity is essentially needed to be successful in life and Indians should strive for excellence .

Prof. S.K.Calla, Principal and Director (D&W) emphasised on the need of owning. The students should not only be full of reverence for their college but also should put their efforts for its betterment. The celebration culminated in a cultural programme put up by students in praise of freedom fighters and ended with distribution of sweets to all.

## INFOSYS CAMPUS CONNECT (Road Show)

Since 2004, SKIT has been organizing Campus Connect Programme in collaboration with Infosys to acquaint the students with the needs and expectations of industry. For batch of 2013, an introductory seminar called the 'Road Show' was conducted on 6 February 2012.

It started with Prof. M.L. Bhargava's address in which he explained the need for making the students industry ready. Then Mr. Kshitij Jain, Education and Research Department, Infosys, Mysore DC addressed the students. Mr. Jain briefed the gathering about the skills like technical competency, soft skills, communication etc. that have become essential ingredients for success. He asked students to join Soft Skills course of Campus Connect to inculcate all these skills. He further explained that the Campus Connect Course consists of 6 modules that develop technical competency and include programming and testing, OS, RDBMS etc. The students were also informed that Infosys regularly conducts sabbaticals and workshops for faculty members and also provides sponsorships for supporting technical events. Motivational videos were shown to the students and the programme ended with a vote of thanks to the dignitaries by Prof. Anil Chaudhary, Head, IT Dept.

campus connect™
An Infosys® Industry-Academia Partnership Program

## E- SUMMIT 2012 HELD ON THE THEME: INVENT THE FUTURE

SKIT started the E-Week 2012 celebrations by unveiling the E- Week banner on the theme "Invent the Future" followed by a pledge taking ceremony involving the management, staff & students who pledged to become or support the budding entrepreneurs.

This was followed by the E-Summit launch which saw various CEO's & entrepreneurs from across the country, enlightening the audience about entrepreneurship. The chief guest for the event was Mr. Sudhir Nijhawan, CEO of NIFTY Innovations. He talked about effective time management and the importance of perseverance in any field of life. He inspired the audience and encouraged them for creative thinking.

Next, to share his inspiring success story, was the founder of Sharpedge Learning, Mr. Paresh Gupta who said that entrepreneurship is an experience which involves 'knowing, learning, moving up the curve and doing what interests you.'

The young entrepreneurs Ankit Bohra & Saurabh talked about their venture - 'TAPRI,' a tea stall & café which specializes in more than 40 kinds of tea.

Among the other distinguished people were Mr. Sandeep Jain, MD of Intime Technologies & Mr. Manoj Sharma, CEO of Kaizen Robeonics. They encouraged the students to follow their innovative ideas to become entrepreneurs. The e- talk by Mr. Srijan Pal Singh, OSD of Kalam Foundation was truly inspiring. He talked about social entrepreneurship & made the audience familiar with social initiatives like PURA (Providing Urban Amenities to Rural Areas ) which has


succeeded in making villages self sufficient through innovative schemes like PCTC ( Production Cum Training Centre and Gurukuls). He urged the audience to do something nobel for the betterment of the underprivileged people. Prof. M. L. Bhargava, Advisor talked on the growing need of entrepreneurs in the country. The E - Summit ended on a highly inspiring note when SKIT launched its own chapter of the 'What Can I give Mission' which will enable young minds to create value by giving their time, resources and compassion in order to change the lives across the country.

## STUDENTS PARTICIPATION/ ACHIEVEMENTS

1. Under the guidance of sports officer Mr. Hiralal Choudhary, sports team of SKIT participated in different sports meet held at reputed institutions and embarked their flags of success.

   The accomplishments are as under:

   - Basketball boys team of SKIT created an aura of success in sports meet at Jaipur National University held from 14 to 16 February 2012 by qualifying for the title of runner up team. **Aditya Paliwal** led the team of basketball.
   - Girls team of basketball grabbed the **Winners Trophy** in annual sports meet held at Vivekananda Institute of Technology, Jaipur from 1 to 3 March 2012. **Nikita Goyal** was the captain of team.

SKIT family wishes them heartiest congratulations.

2. Imran Khan (CS) achieved first rank in M.Tech. 2008 batch of R.T.U., Kota. He completed his project "Data Mining by Parallelization of FP-Growth Algorithm" under guidance of Ms. Shubhra Saxena, Sr. Lecturer, CS Dept. SKIT family wishes him heartiest congratulation on his accomplishment.
3. Rishabh Sharda, Anandi Lal Kumawat, Anang Sharma (VIII Sem.), Atul Agarwal (VI Sem.) of Mechanical department participated in ASME Student Professional Development Conference- 2012 on 4 and 5 February 2012 held at IIT Roorkee.

Their accomplishments are as under:

Anandi Lal Kumawat participated in student design competition and got III position among 16 participants from various IITs and other institutes.

Rishabh Sharda was nominated as SDOB program incharge. Anang Sharma presented SKIT- ASME Student Section report. Atul Agarwal was nominated for SDOB Election from SKIT- ASME Student Section and was chosen as a volunteer for the senior section.

4. Design and fabrication of multipurpose sieving machine , a project by Anandi Lal Kumawat and Bhaskar Sharma of VIII Sem., Mechanical Engineering secured I prize in presentation on innovative projects on 125 years celebration of BOSCH on 26 December 2011.

## EXHIBITION OF BOOKS

An exhibition of books was organised in central library on 16-17 January 2012. Almost 12 national as well as international publishers displayed their 5000 books on various subjects and themes. The exhibition got a huge response from faculty members as well as students. Around 700 people visited the exhibition and got abreast of latest titles.

## WID CERTIFICATION

IBM conducted a Web based Integrated Development Certification programme on 17 January 2012 for the students of VIII sem. 54 students were certified for the same.

## RAD WORKSHOP ORGANIZED

To impart practical approach of developing projects in RAD tool, a workshop was organised for VI Semester Students from 15 -18 February 2012. The training contained both OHP presentations and problem solving technical sessions. The training began with an introduction to IBM software group describing different tools such as rational tool, information management tool, Tivoli, Websphere servers and LOTUS the unique e-mail client. Almost 96 students and 11 faculty members participated in the workshop which proved a right platfrom to make the students industry ready.

### *Peace*

*Let peace and harmony strengthen mankind,*
*Let brotherhood rule the realm of life.*
*Let love prevail and enmity die,*
*Let differences be forgotten and equality survive.*
*Let not greed and hate corrupt humanity,*
*Let us all try to eradicate cynicality.*
*Let the constructive mind of man activate,*
*Let destruction disappear at any rate.*
*Let peace remain for the survival of all,*
*Let's strive to save the earth from wars.*
*Arise mankind before it's too late,*
*Or nuclear wars will seal thy fate.*

***Rajdeep Sukhwal**, II Sem., EC*

# REMINISCENCE

## A REPORT ON 99TH INDIAN SCIENCE CONGRESS HELD AT BHUBANESWAR FROM 3-7 JANUARY 2012

Indian Science Congress- the greatest Scientific Extravaganza was inaugurated by Dr. Manmohan Singh Hon'ble Prime Minister of India at 9.30 am on 3 January 2012 in the august presence of Shri Muralidhar Chandrakant Bhandare(His Excellency of the Governor of Odisha), Shri Naveen Patnaik (Hon'ble Chief Minister of Odisha), Sh. Vilasrao Deshmuk (Hon'ble Union Minister of Science & Technology and Earth Sciences), Shri Ashwani Kumar (Hon'ble Union Minister (State) of Planning, Science & Technology and Earth Sciences) and Prof. Geetha Bali (General President,99th Indian Science Congress)

Chemical Sciences Programmes were held at KIIT- University Campus-5, Hall -12, Bhubaneswar.

I. Sectional President was Prof. A.K. Bakhshi Vice Chancellor, U.P. Rajarshi Tandon Open University Allahabad - 211013, former Professor & Head Department of Chemistry University of Delhi.

II. On 5 January 2012, Symposium (Tailoring of Novel Chemical substances with Desired Properties) & invited lectures were held with the concurrent Poster Presentations (Organic Chemistry).

III. Oral presentations and concurrent Poster Presentation (Inorganic & Physical Chemistry) were held on 6 January 2012.

IV. I have presented a paper on "Mixed - ligand complexes of Cu2+, Ni2+, Co2+, Zn2+ with 2,2' Bipyridine as a primary ligand and L-2-amino-3-imidozolyl propionic acid as secondary ligand" on 06 January 2012 by Poster Presentation.

Attended by: **DR. SHARDA SONI,** Reader, Dept. of Chemistry

## THINK IDEAS, THINK TEDX

***'A rare gem with unmatched radiance, sandalwood that spreads its sweet fragrance, a star that illuminates the whole world. Is what a child has to evolve into? It's a dream every teacher & parent cherishes.'***

To provide a platform to its young, talented & innovative students, SKIT took a few selected ones along with some faculty members to attend the great event of idea generators and exchangers, the TEDx in the 5 star luxury of Hotel Marriot in Jaipur on 28 January 2012. TEDx, which stands for technology, entertainment & design in which 'x' stands for extension, is an event where artists delight, scientists teach, writers inspire, innovators encourage thinking & incredibly endowed people enable their fellow human beings to follow their footsteps.

We are lucky to be living in an era where the world is constantly evolving, where a new generation of connected artists, scientists, engineers & entrepreneurs are emerging and performing together the seeds of new ideas sprout into bold new works. At TEDx Jaipur 2012, we met some of these remarkable people & when they spoke encompassing the linear spectrums, they sent the packed hall back with enough food for thought. The theme of the conference was 'Beginnings'.

The first session began with the address of Mr. Diilip Ranjekar, CEO of Azim Premji Foundation, who presented his ideas on how to significantly contribute to quality education that facilitates a just, equitable & humane society. He put special emphasis on improvement in rural education. Then came the Phillipinian ex-governor, Josephina Mendoza Dela Cruze who threw light on corruption that she had to face in her political life which spanned 21 years and struck a lot of optimism. Beginning her career as the youngest political counselor, she fought with the problems and overcame them with the determination to reach the pinnacle. She said, 'Technology curbs corruption, but its wrong use can also be damaging.'

In the next speech delivered by Srijan Pal Singh, we visualized how the reality of Indian villages is different from that of Ramgarh of Sholay & Champaran of Lagaan. Srijan, belongs to a farmer family in U.P. completed his MBA from IIM, Ahemdabad, is working for the country's sustainable & enterprise driven development as a function of PURA (Providing Urban amenities in Rural Areas),under the patronage of Dr. APJ Abdul Kalam. He said the country needs physical, electronics, economics & knowledge for its development.

This session ended with the speech of Maroof Raza, the mentor of Security Watch, a Delhi based non profit initiative, who talked about improving India is relations with its neighboring countries & the expanding Chinese trade that takes advantage of all the sea ports that surround India & the Indian inability to do so.

The first session was followed by a splendid lunch which became all the more enjoyable when it started drizzling. The second session- 'The Stuff We Make' began with the speech of the advertisement guru of the country, Alque Padamsee.

"India is a first world country but the Indian government is a third world government" drew a loud applause from the audience. He also talked about a 'fatwa' that must be issued against the terrorists who have killed hundreds of innocents. "'Ideation' is one of the greatest joys. Before you step into your shoes to begin the day, ideate & discover something new for each day. This will give you more pleasure than you have ever known, said Padamsee. Another eminent speaker of the session was Sudarshan Bannerjee, EVP & head of Ignita Rudra.

The stage was then taken over by the Italian designer Emanuelle Nicosia, who taught the audience the idea of 'loving your dreams'. He opined that designing is a field of choice not chance. The session was concluded with an impressive speech by Lalit Das, who highlighted every man's innate potential to design. The highlight of the third session was an amusing speech by Nithya Shanty, an MBA from XLRI.

Then came Mushkin Ingawale, the inventor of ToneHb, a portable non-invasive, hemoglobin estimation device that gives instant readings. The key reason that led to this invention was the fear of pricks and syringes that people have.

The hectic day concluded with the soulful music of Harpist Georgi Pope, an international musician from the U.K.

The keynote of all speeches at the seminar was -do something. So folks, let's begin.

**AYUSHI KAPOOR**, VI Sem., EE

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*We and They*

*When we are in class, we are students,*
*When they are in class they are teachers.*
*When we write over words, it is overwriting,*
*When they write over words, it is correction.*
*When we gather to discuss, it is gossiping,*
*When they gather to discuss, it is a meeting.*
*When we are found in library, it is bunking,*
*When they are found in library, it is research work.*
*When we copy from others, it is cheating,*
*When they copy from others, it is quoting.*
*When we do not do our work on time, we are lazy,*
*When they do not do their work on time, they are busy.*
*When we think in class, we are daydreamers,*
*When they think in class, they are philosophers.*
*When we are in corridors, we are wandering,*
*When they are in corridors, they are inspecting.*
*When we joke in class, we are jokers,*
*When they joke in class,*
*they are quoted to have a sense of humour.*

***Lokesh Jain**, II Sem., EE*

## SKIT'S ACTIVE INVOLVEMENT AT CII'S HR CONCLAVE 2012

The key differentiator in the present industrial scenario is the human capital of the organisation. Effective and optimal utilization of human resources has an impact on the organisation. In the same spirit, Skit actively participated in CII's HR Conclave 2012 held on 10-11 Feb 2012 at SMS Convention Centre, Jaipur. This year the theme was -'Future is here: Leveraging HR for Organisational Success'. The conclave made plain that HR function needs to realign itself to become a key player in bringing effectiveness to the organisation and help it retain its competitive edge. It is only possible through renewal of HR mind set and revising the processes and policies.

Against this backdrop, Confederation of Indian industry organised the 5 edition of its' annual flagship event HR Conclave 2012. The conclave was attended by Mr. Jaipal Meel, Secretary, Prof. M. L. Bhargava, Advisor, Mr. Vineet Jain, Placement Officer and Ms. Maneesha Kaushik, Placement Officer. The conclave not only provided a qualitative interaction platform with representatives and HR's of various core organisations of the industry but also threw light on how to design and address the role of HR in organisational success. The HR concalve 2012 was a significant platform for HR professionals, academicians, relevant government officials and students for networking as well as for sharing information as it enabled active interactions with renowned people from the industry.



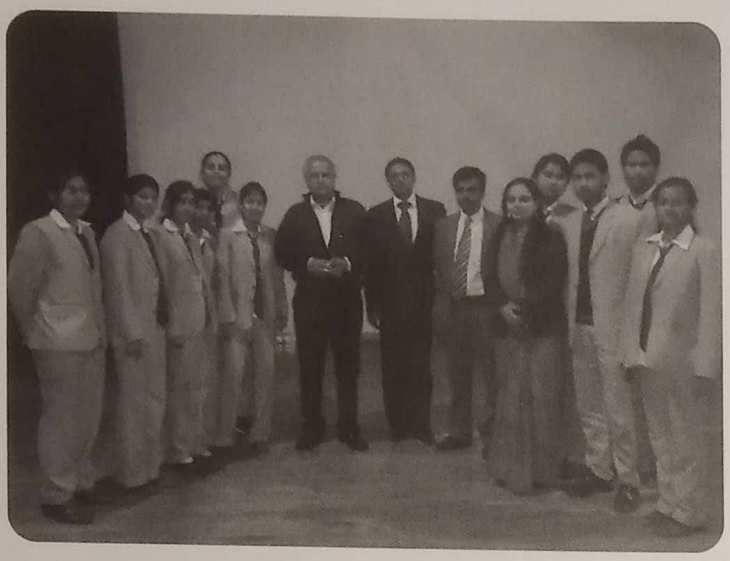
## SKIT'S ACTIVE PARTICIPATION IN JAIPUR LITERATURE FESTIVAL 2012

Jaipur Literature Festival is the largest literary festival in Asia-Pacific, and the most prestigious celebration of national and international literature to be held in India. It encompasses a range of readings, talks, debates, performances, children's workshops and interactive activities. This year, the students of SKIT actively participated in JLF - 2012. Five of SKITIANS volunteered with TEAM WORKS which officially organizes the literature festival.


The students got an opportunity to be with authors of international repute and learnt about their writing habits and life style in detail. Students interacted with esteemed authors like Javed Akhtar, Gulzar, Anupam Kher, Girish Karnad, Jeet Thayil, Aruna Roy, Hoshang Merchant, Ben Okri. They were accompanied by Mrs. Abha Meel and Ms. Maneesha Kaushik, Training & Placement Officer.

## ACADEMIC INDUSTRY INTERFACE AT TECH FEST (HORIZON)

Horizon 2012 was organized on 21 Jan 2012 at Maharana Pratap Auditorium, Jaipur. The summit was about game designing, mobile applications, web designing, game developing etc.



The session was conducted by Microsoft, Ibigo, Globsysn & Virtual Infocom. Amongst the many dignitaries present there to enhance the knowledge of the students & to provide them an effective academic industry interface were Mr. Arun Bhattacharya, CEO of Virtual Infocom, Mr. Chandan Verma ,a young entrepreneur game developer, Mrs. Mahima & Mr. Abhishek, HR from Ibigo. CEO's and representatives of various companies tried their level best to make the summit interesting as well as conveyed their experiences about the industry & their entrepreneurial journey.

More than 51 students from CS & IT participated & interacted with various CEO's & representatives of various companies. Prof. M. L. Bhargava, Advisor, SKIT oriented the students regarding the Tech Summit "Horizon" & they were accompanied by Miss Maneesha Kaushik, Training & Placement officer .After the tech summit, Mr. Pinlu Bose, HR of Globsysn visited SKIT campus & interacted with students. He threw light on importance of under taking projects & training.

## RESEARCH PAPERS PUBLISHED

**Title:** Castor oil as Corrosion Inhibitor for Iron in Hydrochloric acid.
**Published:** Oriental Journal of Chemistry (An international Journal of Pure and Applied Chemistry) VOL No: 27, Issue No: 4, 2011 ISSN No: 0970-020X
**Author:** Prof. Sangeeta Vyas, Dept. of Chemistry, Dr. Sharda Soni, Reader, Dept. of Chemistry

**Title:** A Review on Fate of Antiviral Drugs in Environment & Detection Techniques.
**Published:** International Journal of Environmental Sciences VOL. 1(7), Page: 1526-1541, 2011 ISSN No: 0975-4402
**Author:** Prof. Sangeeta Vyas, Dept. of Chemistry

**Title:** The Shavian Woman: An Analysis
**Published:** CONTEMPORARY DISCOURSE: A Peer Reviewed International Journal ,ISSN 0976-3686, Volume -3, Issue- 1, January 2012.
**Author:** Dr. Niraja Saraswat, Reader, Dept. of English

**Title:** A Hybrid Method of Feature Extraction for Facial Expression Recognition.
**Published:** 2011 International Conference on Signal Image Technology & Inter Based System IEEE computer society ISBN: 978-1-4673-0431-3 Page: 422-425 Digital object id: 10.1109/sitis.2011.64
**Author:** Mrs. Shubhlakshmi Agarwal, Lecturer, Dept. of Computer Science

**Title:** Training and Development Practices in Indian Organizations--An Overview.
**Published:** ICFAI PUBLICATIONS, HRM Review, Vol. XI, No. 7, 2011, 0972-5148
**Author:** Mrs. Ona Ladiwal, Sr. Lecturer, Dept. of Management

**Title:** Analysis of Trust Dimensions in Retail Industry-An Empirical Study.
**Published:** Annual Hand Book of HR Initiatives 2012, ISBN NO. 978-81-902754-3-9
**Author:** Mrs. Ona Ladiwal, Sr .Lecturer, Dept. of Management

**Title:** Mapping the Trust Dimension in Print Media Industry.
**Published:** Journal of Commerce and Information Technology 2011, Vol.-11, No.-2, ISSN. No. 0972-9550
**Author:** Mrs. Ona Ladiwal, Sr. Lecturer, Dept. of Management

## RESEARCH PAPERS PRESENTED

**Title:** Energy Critical Elements: World and Indian Scenario.
**Conference:** Emerging Trends of Research in Materials Science
**Date:** 12-13 November 2011
**Venue:** SKIT, Jaipur
**Author:** Prof. ( Dr.) N. K. Banthiya, Head, Dept. of Mechanical Engineering

**Title:** Plight of Less Priviledged in Mulk Raj Anand's Untouchable & Premchand's Godan.
**Conference:** International Conference on Minority Discourses Across Cultures.
**Venue:** Central University of Rajasthan, Kishangarh
**Author:** Dr. Niraja Saraswat, Reader, Dept. of English

**Title:** Otherness and Identity in the Plays of George Ryga.
**Conference:** International Conference on Minority Discourses Across Cultures.
**Venue:** Central University of Rajasthan, Kishangarh
**Author:** Dr. Anupriya Singh, Sr. Lecturer, Dept. of English

**Title:** Mapping Margins within Margins: Engendered Minorities in Mahasweta Devi's 'Shanichari' and Dharmabhai Shrimali's 'The Hell'.

**Conference:** International Conference on Minority Discourses Across Cultures.
**Venue:** Central University of Rajasthan, Kishangarh
**Author:** Mrs. Neha Purohit, Sr. Lecturer, Dept. of English

**Title:** Women Empowerment : Myth or Reality
**Conference:** National Conference on Rethinking Feminism: Human Rights Approach to Women
**Date:** 3-4March, 2012
**Venue:** Dept.of Political Science,University of Rajasthan,Jaipur
**Author:** Dr. Nidhi Sharma, Sr. Lecturer, Dept. of English

**Title:** A Novel Technique For Minimization of Distribution Losses in Radial System.
**Conference:** National Conference on Recent Advancements In Power System Engineering.
**Date:** 4-5 February 2012
**Venue:** VIT, Jaipur
**Author:** Mr. Sarfaraz Nawaz, Reader, Dept. of EE , Ms. Rida Qureshi, Lecturer, Dept. of EE , Amit Gupta, VIII Sem., Dept. of EE

**Title:** Fluidized Bed Combustion Boiler Technology.
**Conference:** National Conference on Recent Advancements In Power System Engineering.
**Date:** 4-5 February 2012
**Venue:** VIT, Jaipur
**Author:** Mr. Sarfaraz Nawaz, Reader, Dept. of EE , Mr. Ankush Tandon, Sr. Lecturer, Dept. of EE , Aayushi Kapoor, VI Sem., Dept. of EE

**Title:** Minimization of losses in Radial Distribution system by placement of DG-unit-A Case study.
**Venue:** Kautilya Institute of Technology & Engineering , Jaipur
**Author:** Mr. Sarfaraz Nawaz, Reader, Dept. of EE , Mr. Ankush Tandon, Sr. Lecturer, Dept. of EE , Akhil Jain VIII Sem., Dept. of EE

**Title:** An Improvement over RSA Digital Signature Algorithm Using Natural Numbers.
**Conference:** International Conference on Adaptive Computing Technologies in Various Engineering Applications.
**Venue:** Poornima College of Engineering, Jaipur
**Author:** Ms. Shubra Saxena, Sr. Lecturer, Dept. of CS

**Title:** Carbon Credit Accounting - Keeping in View the Growing Carbon Credit Taxes in the Country.
**Venue:** IFRS Conference, Subodh College, Jaipur
**Date:** 10 - 11 February 2012
**Author:** Ms. Maneesha Kaushik, Sr. Lecturer, Dept. of Management Studies

## CONFERENCE/WORKSHOP ATTENDED

**Seminar:** TEDx Seminar on Students Development and Reforms in Teaching Methodology.
**Venue:** Hotel Marriott, Jaipur
**Date:** 28 January 2012
**Attended By:** Mr. S. B. Bheem,Reader, Dept. of ME, Mr. Ashish Nayyar, Reader, Dept. of ME

**Webinar:** IFEES/IUCEE Global Webinar: Abet Accreditation Process by Jack Rutherford.
**Venue:** Department of Mechanical Engineering, SKIT, Jaipur
**Date:** 8 November 2011
**Attended By:** Prof.(Dr.). N. K. Banthiya, Head, Dept. of ME, Mr. S. B. Bheem Reader, Dept. of ME, Mr. Ashish Nayyar, Reader, Dept. of ME, Mr. A. K. Mathur, Reader, Dept. of ME ,Mr. Manoj K. Sain, Lecturer, Dept. of ME, Mr. Anil Dhariwal, Lecturer, Dept. of ME, Ms. Sarita Choudhary, Lecturer, Dept. of ME

**Workshop:** Soft Skills Workshop in Campus Connect Programme
**Venue:** Infosys, Chandigarh
**Attended by:** Mr. Girish Sharma, Lecturer, Dept. of CS, Mr. Kailash Soni, Lecturer, Dept. of CS

## INDUSTRIAL VISIT BY FACULTY

In connection with MOU between SKIT and Instrumentation limited, Kota, a delegation of faculty members visited II, Kota

**Industry:** Instrumentation Ltd. Kota
**Objective:** To explore opportunity for industry institute interface projects
**Date:** 5 Decmber 2011
**Visited By:** Mr. Dheeraj Joshi,Reader, Dept. of ME, Mr. C.P. Gupta Reader, Dept. of SKIT, Mr. Pankaj Dadhich, Sr. Lecturer, Dept. of CS, Mr. Niranjan Kumar, Lecturer, Dept. of EE

## PAPERS REVIEWED

**Journal/Magazine:** MEEM- IEEE Multi Disciplinary Engineering Education Magazine
**Date:** 12 December 2011
**Reviewed By:** Prof.(Dr.) N. K. Banthiya, Head, Dept. of ME

## PH.D AWARDED

(a) Dr. Niraja Saraswat, Reader, Dept. of English, was awarded doctorate on 30 January 2012 by Malaviya National Institute of Technology, Jaipur. She worked on 'Victorian Drama and an Analysis of Women in Bernard Shaw's Plays' under the supervision of Dr. Nupur Tandon, Associate Professor, MNIT, Jaipur.

(b) Dr. Nidhi Sharma, Sr. Lecturer, Dept. of English, was awarded doctorate on 24 February 2012 by University of Rajasthan, Jaipur. She completed her research on ' The political Novel in India: Reshaping Nation Spaces' under the guidance of Dr. Mini Nanda, Associate Professor, University of Rajasthan, Jaipur.

In a day, when you don't come across any problems - you can be sure that you are travelling in a wrong path.

**SWAMI VIVEKANANDA**

## 4G

In telecommunications, 4G is the fourth generation of cellular wireless standards. It is a successor to the 3G and 2G families of standards. In 2009, the ITU-R (International Telecommunications Committee) organization specified the IMT-Advanced (International Mobile Telecommunications advanced) requirements for 4G standards, setting peak speed requirements for 4G service at 100 Mbps for high mobility communication (such as for trains and cars) and 1Gbps for slow mobility communication (such as pedestrians and stationary users).

A 4G system is expected to provide a comprehensive and secure all-IP based mobile broadband solution to laptop computer wireless modems, smart phones, and other mobile devices.

Facilities such as ultra-broadband internet access, IP telephony, gaming services, and streamed multimedia may be provided to users.

### 4G FEATURES

While maintaining seamless mobility, 4G will offer very high data rates with expectations of 100Mbps wireless service. The increased bandwidth and higher data transmission rates will allow 4G users the ability to utilize high definition video and the video conferencing features of mobile devices attached to a 4G network.



The 4G wireless system is expected to provide a comprehensive IP solution where multimedia applications and services can be delivered to the user on an 'anytime, anywhere' basis with a satisfactory high data rate, premium quality and high security.

- High usability: anytime, anywhere, and with any technology
- Support for multimedia services at low transmission cost
- Personalization
- Integrated services

### DIFFERENCE BETWEEN 3G & 4G

3G stands for 'third generation mobile telecommunications'. It is a way of classifying mobile phone connections, which is decided by IRT-U. 3G is improved network that allows faster and more secure transfer of data, making it easier to use your mobile phone to access the internet. 4G is the fourth generation of connection technology and has higher standards such as peak download speed of 100 Mbps while the user is moving in a car, and 1Gbps while stationary.

Although some mobile providers claim that they offer 4G networks, they use current technologies but do not meet the ITU-R's set of 4G standards. Due to this people argue that they can more accurately be called 3.9G networks. While 3G networks are in widespread use, 4G are not currently widely available.

**SOMNATH SAMANTO,** II Sem., EE Dept.

## NANOFLUID: PREPARATION AND APPLICATIONS

### INTRODUCTION

The heat transfer fluids are used as a medium for adding or removing an amount of heat from the system at an adequate rate to ensure the functionality and reliability of the system. The efficiency of such a fluid depends on both the physical properties of the fluid including thermal conductivity, viscosity, density, and heat capacity, and its interaction with the environment where heat is to be transferred. The examples of traditional heat transfer fluids include water, minerals oil and ethylene glycol, which have been widely used for many decades in various industrial sectors (e.g. power generation, chemical production, transportation and microelectronics) and offices and homes (e.g. refrigeration, air conditioning and central heating).

These conventional heat transfer fluids, however, are often limited by their poor thermal properties in particular thermal conductivity, which implies bulky heat exchangers and high pumping power. Driven by industrial needs of process intensification and device miniaturization, development of high performance heat transfer fluids has been a subject of numerous investigations in the past few decades. As solids materials in particular metals can have very high thermal conductivities, lots of studies have been carried out in the past on the thermal behaviour of suspensions of particulate solids in liquids. These early studies, however, used suspensions of millimeter or micrometer sized particles, which, although showed some enhancement, experienced problems such as abrasion and channel clogging due to poor suspension stability. The channel clogging can be particularly serious for systems using mini and/ or micro-channels. A recent invention termed 'nanofluids' has shown potential to resolve some disadvantages associated with suspensions of large particles

### NANOFLUIDS

Nanofluids are liquid suspensions containing particles that are significantly smaller than 100 nm in at least one dimension, and have bulk thermal conductivities orders of magnitudes higher than the base liquids. Alumina ($Al_2O_3$) and copper oxide (CuO) are the most common and inexpensive nanoparticles used in experimental investigations by many researchers. The potential advantages of properly engineered nanofluids include

- Higher thermal conductivities than that predicted by currently available macroscopic models,
- Excellent stability
- Little penalty due to an increase in pressure drop and pipe wall abrasion experienced by suspensions of millimeter or micrometer particles. As a result of these potential advantages, a number of studies have been performed on the thermal properties of nano fluids since the invention approximately a decade ago.

By suspending nanophase particles in heating or cooling fluids, the heat transfer performance of the fluid can be significantly improved.

The main reasons of improving heat transfer performance are

- The suspended nanoparticles increase the surface area and the heat capacity of the fluid.
- The suspended nanoparticles increase the effective (or apparent)

thermal conductivity of the fluid.

- The interaction and collision among particles, fluid and the flow passage surface are intensified.
- The mixing, fluctuation and turbulence of the fluid are intensified.
- The dispersion of nanoparticles flattens the transverse temperature gradient of the fluid.

## PREPARATION OF NANOFLUIDS

Preparation of nanofluids is the first main step in applying nanophase particles to change the heat transfer performance of conventional fluids. The nanofluid does not simply refer to a liquid + solid mixture. Some special requirements are necessary, such as even suspension, stable suspension, durable suspension, low agglomeration of particles, and no chemical change of the fluid. In general, these are effective methods used for preparation of suspensions

- To change the pH value of suspensions
- To use surface activators and/or dispersants
- To use ultrasonic vibration. All these techniques aim at changing the surface properties of suspended particles and suppressing formation of particles cluster in order to obtain stabile suspensions.

It depends upon the application case how these techniques are used. The common activators and dispersants are thiols, oleic acid, laurate salts. Selection of the suitable activators and dispersants mainly depend upon the properties of solutions and particles. For example, the aqueous-favoring dispersant may be fit for water + particle suspension.

## TRANSFORMER OIL + CuO NANOPARTICLES SUSPENSION

CuO nanoparticles are mixed with the transformer oil by 2 to 5 vol%. To stabilize the suspension, oleic acid is selected as the dispersant to cover the nanoparticles. The amount of mixed oleic acid is calculated with weight percentage of CuO particles. The suspension is vibrated for 10 hrs in an ultrasonic vibrator. The experimental results shows that in the case that the percentage of oleic acid amounts to 22 wt% of the particles, the stabilization of the suspension can last about 1 week in the stationary state and no sedimentation occurs. The distribution and cluster of the ultra-fine copper particles can been examined by a HITACHI H-8 electron microscope. Fig. 1 gives photographs of the suspension of transformer oil + CuO nanoparticles. The electron micrographs show that the particles are dispersed in the fluid and some clustering occurs.

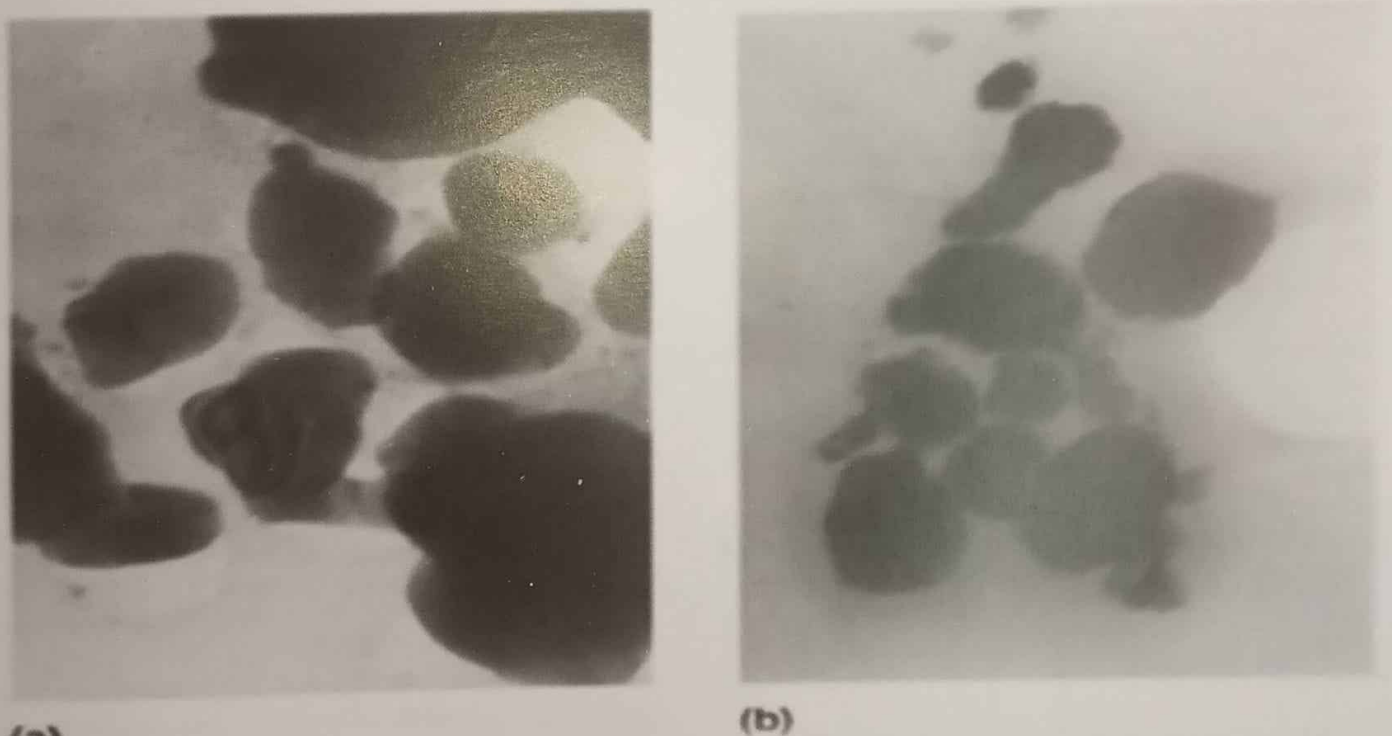


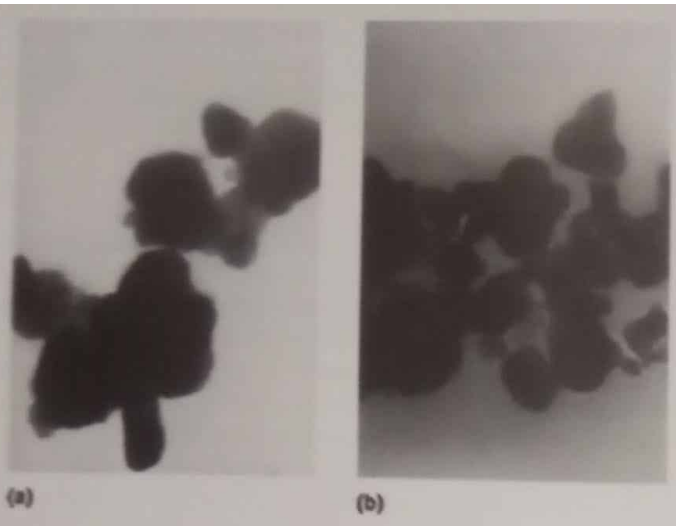

Fig. 1. Electron micrographs of nano CuO particles-transformer oil at pH=6.3 (a) 2 vol% suspension (b) 5 vol%

## WATER + CUO NANOPARTICLES SUSPENSION

The suspension contains 5 vol% CuO nanoparticles. The laurate salt is used to enhance stability of the suspension. The best case corresponds to the percentage of 9 wt%, which means that 9 wt% may be the minimum value for forming a stabile water + CuO particle suspension in this case.

After the suspension has been vibrated in an ultrasonic vibrator, the stabile suspension can last more than 30 hrs in the stationary state. Fig. 2 gives photographs of the suspension of water + CuO nanoparticles. Both these micrographs show that the particles are dispersed in deionized water and some clustering occurs.

Comparison between Figs. 1 and 2 and observation of the suspensions reveal that with respect to dispersion behavior and stability, the suspension of CuO particles in transformer oil has superior characteristics to the suspension of CuO particles in water. This explains that the viscosity of fluids may be an important factor affecting the dispersion of ultra-fine particles and the stability of suspensions. The properties of activators and dispersants also play a role in preparing the suspensions.



(a) (b)

Fig. 2. Electron micrographs of nano Cu particles-deionized water at pH=6.8 (a) 5 vol% suspension (b) 7.5 vol%

## EFFECT OF Al2O3 / WATER NANOFLUID ON EFFICIENCY OF A TWO-PHASE CLOSED THERMOSYPHON (TPCT)

A two-phase closed thermosyphon (TPCT) is a device for heat transmission. It consists of an evacuated close tube filled with a certain amount of working fluid. The heart of this system is a TPCT made of copper tube with internal diameter of 20 mm, 1 mm thickness and 1000 mm in length. The evaporator and condenser sections had 350 and 400 mm length, respectively. The electric heaters used around the evaporator section were made of a Nickel-Chrome wire having nominal power of 1000 W. An ammeter and a voltmeter are assembled in the circuit to measure the input power

$$Q_{in} = V \times I$$

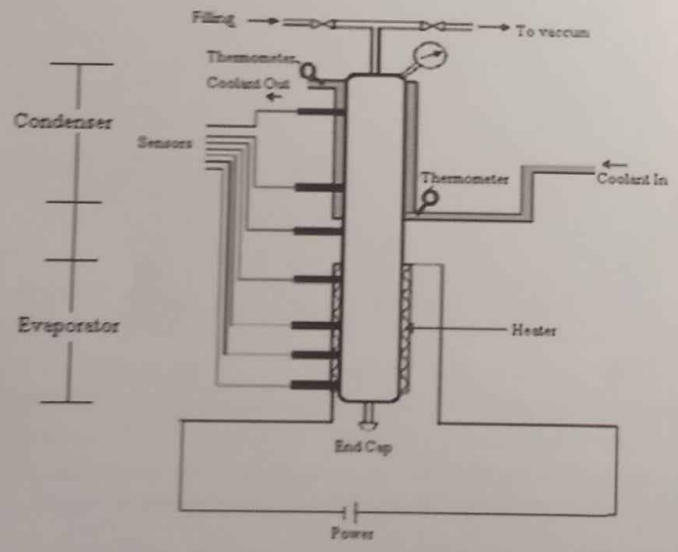



Fig 3 . Two-phase closed Thermosyphon

In the study done by Noie S.H. et al., 2009 aqueous Al2O3 nanoparticles suspensions was used in a TPCT as working media. In this study Al2O3 nanoparticles were dispersed in distillate water by ultrasonic vibrator without using any dispersant or stabilizer. Nanofluids of 1%, 1.5%, 2%, 2.5% and 3% volume fraction of particles were prepared.

To compare the efficiency improvement of the TPCT filled with nanofluids and pure water, the TPCT charged with pure water was examined too. For different input powers (48.4-195.2 W), the efficiency is presented in Fig. 3. When the TPCT is charged with nanofluids, the efficiency is significantly enhanced, i.e. the heat transfer capability improves. For example, at the input power of 97.1 W, 1% nanofluid can improve the efficiency of the TPCT from 75.1% to 81.56%. This improvement increases with the volume concentration of nanoparticles. Also, the TPCT efficiency continues to increase as the input power increases, however it is not the same. For all working fluids, the gradient of efficiency at lower input powers is larger than the higher ones.

For example when the input power increases from 48.4 to 97.1 W, the efficiency of TPCT loaded with a nanofluid of 2% concentration increase 14.7%, while for an increment of the input power from 146.3 to 195.2W this improvement is only 2.7%.

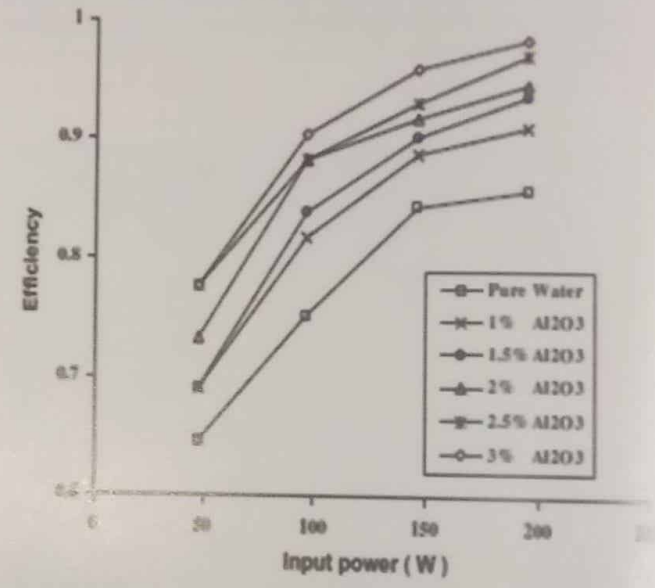



Fig 4. Efficiency of TPCT versus input power and concentration of Al2O3 / water nanofluid

The quantity of heat transferred to the coolant water can be calculated from inlet and outlet water temperature difference, taking into account the water mass flow rate and specific heat as,

$$Q_{out} = mC_p(T_{out} - T_{in})$$

The efficiency of TPCT can be expressed as a ratio of the output heat by condensation to the inlet heat by evaporation,

$$\eta = \frac{Q_{out}}{Q_{in}}$$

## CONCLUSIONS

The preparation method of Nanofluid explained in this article with several sampled Nanofluid by directly mixing nanophase powders and base fluids will reveal the possibility of practical application of the nanofluids.

The nanofluid shows great potential in enhancing the heat transfer

process. One reason is that the suspended ultra-fine particles remarkably increase the thermal conductivity of the nanofluid. The volume fraction, shape, dimensions and properties of the nanoparticles affect the thermal conductivity of nanofluids. Nanofluid Al2O3 in all concentration gives better thermal performance than pure water. They improved efficiency of the TPCT up to 14.7%.

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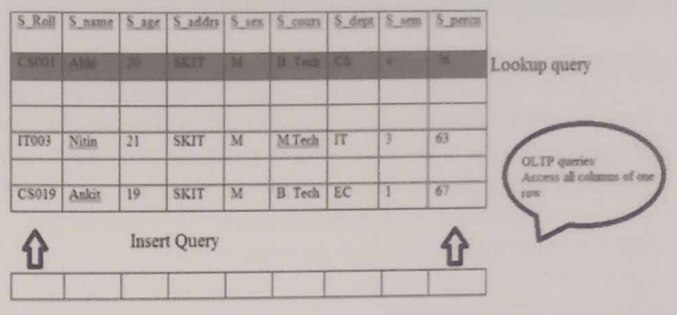
2. Ding Y.L., Alias H., Wen D.S., Williams R.A., Heat transfer of aqueous suspensions of carbon nanotubes (CNT nanofluids), International Journal of Heat and Mass Transfer 49 (2006) 240–250.
3. He Yurong, Jin Yi , Chen Haisheng, Ding Yulong, Cang Daqiang, Lu Huilin, Heat transfer and flow behaviour of aqueous suspensions of TiO2 nanoparticles (nanofluids) flowing upward through a vertical pipe, International Journal of Heat and Mass Transfer 50 (2007) 2272–2281.
4. Noie S.H., Heris S. Zeinali, Kahani M., Nowee S.M., Heat transfer enhancement using Al2O3/water nanofluid in a two-phase closed thermosyphon, International Journal of Heat and Fluid Flow 30 (2009) 700–705.
5. Xuan Yimin, Li Qiang, Heat transfer enhancement of nanofluids, International Journal of Heat and Fluid Flow 21 (2000) 58-64.
6. Yang Y., Zhong Z.G., Grulke E.A., Anderson W.B., Wu G., Heat transfer properties of nanoparticle-in-fluid dispersion (nanofluids) in laminar flow, Int. J. Heat Mass Transfer 48 (2005) 1107–1116.7. Hong Y.K., Eom D.H., Lee S.H., Kim T.G., Park J.G., Bushaina A.A., The effect of additives in post-Cu CMP cleaning on particle adhesion and removal, J. Electrochem. Soc. 151 (2004) G756–G761.


**MANOJ KUMAR SAIN,** Sr. Lecturer, Dept. of ME

# THE FUTURE: COLUMNAR DATABASES

Most information systems available today are implemented by using commercially available database management system (DBMS) products. It is a software which manages data stored in an information system, provides privacy and privileges to users, facilitates concurrent access to multiple users and provides recovery from system failures without the loss of system integrity. Relational database is most commonly used DBMS which organizes the data into different relations.

Each relational database is a collection of inter-related data, which is organized in a matrix with rows and columns. For example, in a table that represents employee, each row would represent a single employee. Columns might represent things like employee name, employee street address, his SSN etc. The popularity of RDBMS is mainly due to the support of on-line transactional processing (OLTP). Typically the OLTP system includes Student Management System, Bank Database etc. The queries include, "insert the new record for a new subject that is assigned to a student". These applications involve either no or very less analysis of data and serve the use of an information system for data preservation and querying. An OLTP query is for a short duration and requires minimal database resources.




In the mid of 1990's a new era of data management arises which was query specific and involve large complex data volumes. Example of such query specific DBMS are OLAP and Data mining. This tool summarizes the data from large data volumes and represents the query into results using 2-D or 3-D graphics to visualize the answer. The OLAP query is like "Give the % comparison between the marks of all students in B. Tech and in M. Tech". The answer to this query would be generally in the form of graph or chart. Such 3-D and 2-D visualization of data is called as "Data Cubes".

Data warehouses are used in almost every large organizations and research states that their size doubles after every third year. Moreover the hourly workload of these warehouses is huge and approximately 20lakhs SQL statements are encountered hourly. Column oriented database generally known as "columnar database" reinvents how data is stored in databases. Storing data in such a fashion increases the probability of storing adjacent records on disk and hence odds of compression.

This architecture suggests a different model in which inserting and deleting transactional data are done by a row-based system, but selective queries that are only interested in a few columns of a table are handled by columnar approach.

| SNO | SNAME | SSN | CITY |
|---|---|---|---|
| S1 | MEHUL | 200 | JAIPUR |
| S2 | VIPIN | 201 | HINDON |
| S3 | GIRISH | 300 | JAIPUR |

The data would be stored on disk or in memory something like:
S1S2S3MEHULVIPINGIRISH200201300JAIPURHINDONJAIPUR

This is in contrast to a traditional row based approach in which the data are more like this:

S1MEHUL200JAIPURS2VIPIN201HINDONS3GIRISH300JAIPUR

It must always be remembered that columnar database is only an approach of how data is stored in memory, it doesn't define any architectural implementation of database, and rather it follows the traditional database architecture.

**MEHUL MAHRISHI,** Sr. Lecturer, Dept. of CS

## WHY MATHEMATICS IS SO IMPORTANT

Hon'ble Prime Minister Dr. Manmohan Singh has declared the year 2012 as the "National Mathematical Year" as a tribute to maths wizard Srinivasa Ramanujan and also showed concern over the 'badly inadequate' number of competent mathematician in the country on the occasion of 125th birth anniversary of Ramanujan.

Every year at the beginning of the semester, I wish to ask my group of students "Why do we study mathematics?" Different students may have different answers to this question. Some possible answers are: "Mathematics is important and useful in our daily life","

"Mathematics provides an essential base for other subjects such as science and engineering", "Mathematics helps us to develop logical thinking and right way to solve the problems". Some students even say, "As it is a part of curriculum so we have to study."Each of these answers suggests a reason for the importance of Mathematics.

It is sometimes difficult for the students to appreciate the importance of Mathematics. They often find the subject boring and tough to understand. I think students dislike mathematics because it is assumed as an exercise in memorization. But mathematics is not a chore of memorization, it is an extension of few basic ideas to more and more complicated applications.



### KNOWLEDGE OF MATHEMATICS IN ENGINEERING CONTEXT

Mathematics is the language of physical science and engineering. It is the backbone of all sciences as the knowledge of Mathematics is essentially required to learn every branch of science, engineering and technology. It gives various tools which are applied in analyzing and solving scientific problems. Mathematics and engineering go hand to hand. It is a science of pattern that engineers seek out whether found in numbers, space, science, computer, imaginary abstractions or elsewhere. Knowledge and use of basic mathematics has always been an inherent and integral part of engineering. From stress analysis of simple machine components to numerical description of various shapes of new gadgets (using CAD packages), from using FBDs (free body diagram) for solving out the problem in engineering mechanics to using Bernoulli's equation or mass flow rate equation in fluid mechanics.

From calculation of heat and mass flow in various systems to calculating of engine power or shaft power in engineering systems, mathematics pervades everywhere. From reliability in electrical power circuits in household or any other appliances to traffic in networks (tar roads and optical fibres) , mathematics crosses boundaries in every field. In recent years some topics like Mathematical Modeling, Advanced Numerical Methods, Discrete Mathematics, Graph Theory, Information Theory and Computational Mathematics have become indispensable because of their applicability.

Apart from the vital role of mathematics, its learning also develops the following capabilities:

- The ability to identify and analyze patterns
- Logical and critical thinking skills
- Problem solving skills
- Ability to see relationships
- Intellectual maturity
- Capacity of reasoning so that one can think more logically and independently in making rational decisions.

This petite endeavour will hopefully develop a positive attitude among students towards mathematics.

**DR. REEMA JAIN**, Reader, Dept. of Mathematics

## ANGER

Buddha once said," Holding on to anger is like grasping a burning hot coal with the intent of throwing it at someone else; you are the one getting burned."

Anger is not a word whose definition is to be searched in a dictionary; rather it's a curse of contempt on someone. This five letter word is five times more devastating than what it means. Scientifically, anger is a feedback mechanism in which an unpleasant stimulus meets with an unpleasant response. Physically, it results in increased heart beat, blood pressure and levels of adrenaline and noradrenalin.

In many religions, anger is frequently attributed to the gods. Primitive people held that Gods were subject to anger and revenge in anthropomorphic form. The Hebrew Bible says that opposition to the gods results in their anger.

Anger is not less than an acute disease in a person which destroys him physically as well as mentally. The person goes out of his mind and his decisions become pessimistic. Anger can come up anytime whenever a person feels offended or denied, and then there rises a burning desire for retaliation. In such circumstances, even the wrong becomes right for the person and his mood swings faster than the pendulum.

Anger has menacing consequences for an individual himself as well as his surroundings. He becomes gloomy and impetuous. He listens to no one around and does whatever he feels like. The most affected are the people in the direct vicinity of that person. He wishes that every work should be done according to his will, though he himself is not sure whether it's correct or not. He grows frustrated and full of anguish, loses his temper and misbehaves with others.

Anger works as poison among good relationships. It is the only reason that leads countries to war or creates bad blood among family members or close neighbours.

So it's very important to calm the angry person and sublimate his anger; else his wrath would explode like a nuclear bomb. Then nothing is left except repentance...

**RISHABH JOSHI,** III Sem, C.S.

## *Stepping Out*

*I'm standing in the hallway*
*Of my strange new college*
*People laugh and chatter*
*Oh-to be so cool!*
*They go into the classroom*
*In groups of three and twos'*
*I feel like falling through the floor*
*As I stare down at my shoes.*
*My life the one I lived before*
*Has changed completely*
*I've gone from smart, popular perfect*
*To insignificant newbie.*
*My sadness turns to anger*
*As someone shoves me out of their way*
*Why would they have all the happiness that*
*I left behind one day.*
*I decide I do not care*
*Let them be who they are*
*I love to read, I have my books*
*That can take me to world afar*
*Sitting up in a leafy tree one day*
*Staring at the sea*
*Going over things in my head*
*A thought comes to me*
*What if I took a chance?*
*What if I tried to make some friends?*
*They might spare me a glance.*
*I'll turn over a new leaf*
*And step out of my old skin.*

***ANKITA GOYAL,** II Sem., IT*

# ROLE OF EDUCATIONAL INSTITUTES IN CULTIVATING DISCIPLINE IN STUDENTS

The citizens of the nation are formed in the educational institutes that instil in them basic values and give direction to their values. In the good old days, the word 'discipline' was equated with student's external behaviour. A set of rules were laid out to be adhered strictly, failing which corporal punishment was the only solution. 'Spare the rod and spoil the child 'was the motto.

Today discipline in institutes has undergone a vast change. In an age of nuclear families with just one or two children, leave alone corporal punishment, even a scolding is considered too much. Any institution cannot work without discipline. Rules and regulations are necessary for its' smooth functioning. The right attitude to discipline must come from the heart whereby a student is convinced that what he/she is doing is right and beneficial for their well being. Students must comply not because of the fear of getting caught and being punished but because they see the intrinsic good in it.

Today we live in a complex world. In the past in a rather static world, it was easy to determine what is good and what is not for students. In this techno savvy world when everything moves at such a supersonic speed, it is not easy to determine good and bad. Children are bombarded from all corners with modern gadgets that keep changing every day and every hour. Many of them supply instant information and modern means of education but sadly they also give access to pornographic material and encourage communism and terrorism, which the students are not mature enough to handle.

It is almost impossible to get rid of all this. Good discipline and character building can only come from teachers who have taken place of the ancient gurus. Discipline can be inculcated by patience and knowing that each child is unique. Before punishing them it is better to use counselling to understand the reason behind the child's actions. Since children are the future of India, so building their character is imperative otherwise our technological advancements may end up as means of degradation of the society.

**HARSHITA SHARMA,** II Sem., EE

# THE NOBEL PRIZE ACCEPTANCE SPEECH

***I AM GLAD THAT I HAVE BEEN ABLE TO COME AT LAST TO YOUR COUNTRY AND THAT I MAY USE THIS OPPORTUNITY FOR EXPRESSING MY GRATITUDE TO YOU FOR THE HONOR YOU HAVE DONE TO ME BY ACKNOWLEDGING MY WORK AND REWARDING ME BY GIVING ME THE NOBEL PRIZE.***

I remember the afternoon when I received the cablegram from my publisher in England that the prize had been awarded to me. I was staying then at the school Shantiniketan , about which I suppose you know. At that moment we were taking a party over to a forest nearby school , and when I was passing by the telegram office and the post office, a man came running to us and held up the telegraphic message. I had also an English visitor with me in the same carriage. I did not think that the message was of any importance , and I just put it into my pocket ,thinking that I would read it , when I reached my destination. But my visitor supposed he knew the contents, and he urged me to read it, saying that it contained important message. And I opened and read the message, which I could hardly believe. I first thought that possibly the telegraphic language was not quite correct and that I might misread the meaning of it but at last I felt certain about it. And you can well understand how rejoicing it was for my boys at the school and for the teachers. What touches me more deeply then anything else was that these boys who love me and for whom I have the deepest love felt proud for the honor that had been awarded to him for whom they had feeling of reverence , and I realized that my countrymen would share with me the honor which had been awarded to myself.

The rest of afternoon passed away in this manner, and when the night

came I sat upon the terrace alone, and I asked myself a question what could be the reason of my poems being accepted and honored by the west-inspite of my belonging to a different race, parted and separated by seas and mountains from the children of the west. I can assure you that it was not with the feeling of exaltation but with the searching of the heart that I questioned myself, and I felt humble at the moment.

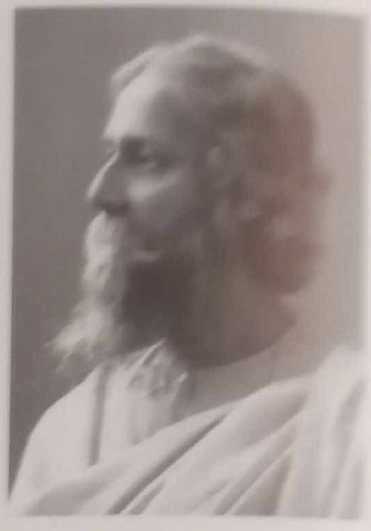
I remember how my life's work developed from the time when I was very young. When I was about 25 years I used to live in utmost seclusion in the solitude of an obscure Bengal village by the river Ganges in a boathouse. The wild ducks which came during the time of autumn from the Himalayan lakes were my only living companions, and in that solitude I seemed to have drunk in the open space like wine overflowing with sunshine and the murmur of the river used to speak to me and tell me the secrets of nature. And I passed my days in the solitude dreaming and giving shape to my dreams in poems and studies and sending out my thoughts to the Calcutta public through the magazine and other papers. You can well understand that it was a life quite different from the life of the west. I do not know if any of your western poets of writers do pass the greatest parts of their young days in such absolute seclusion. I am almost certain that it cannot be possible and that seclusion itself has no place in the western world.





And then came a time when my heart felt a longing to come out of that solitude and to do some work for my fellow human beings, and not merely give shapes to my dreams and meditate deeply on the problems of life, but to try to give expression to my ideas through some definite work, some definitive service for my fellow beings. And the one thing, the one work, which came to my mind, was to teach children. It was not because I was specially fitted for this work of teaching, for I have not had myself the full benefit of a regular education. For some time I hesitated to take upon myself this task, but I felt that I had a deep love for nature I had naturally love for children also. My object in starting this institution was to give the children of men full freedom of joy, of life and of communion with nature . I myself had suffered when I was young through the impediments which were inflicted upon most boys while they attended school and I have had to go through the machine of education which crushes the joy and freedom of life for which children have such insatiable thirst .And my object was to give freedom and joy to children of men.

The vigour and the joy of the children ,their chats and songs fill the air with a spirit of delight, which I drank every day I was there.And in the evening during the sunset hour I often used to sit alone watching the trees of the shadowing avenue and in the silence of the afternoon I could hear distinctly the voices of the childrén coming up in the air ,and it seemed to me that these shouts and songs and glad voices were like those trees , which come out from the heart of the earth like fountains of the life towards the bosom of the infinite sky. And it symbolized and it brought before my mind the whole cry of human life all expressions of joy and aspirations of men rising from the heart of Humanity up to this sky.



In this atmosphere and in this environment I used to write my poems Gitanjali, and I sang them to myself in the midnight under the glorious stars of the Indian sky. And in the early morning and in the afternoon glow of sunset I used to write these songs till a day came when I felt impelled to come out once again and meet the heart of the large world. And I felt that I must before I die coming to the West and meet the man of the secret shrine where the Divine presence has his dwelling, his temple. And I thought that the Divine man with all the powers and aspirations of life is dwelling in the West.

And so I came out. After my Gitanjali poems had been written in Bengali I translated those poems into English, without having any desire to have them published, being diffident of my mastery of the language, but I had the manuscript with me when I came out to the West. And you know that the British public, when these poems were put before them, and those who had the opportunity of reading them in manuscript before, approved of them. It was accepted, and the heart of the West opened without delay.

And it was a miracle to me who had lived for fifty years far away from activity, far away from the West, that I should be almost in a moment accepted by the West as one of its own poets. It was surprising to me, but I felt that possibly this had its deeper significance and that those years which I had spent in seclusion, separated from the life and the spirit of the West, had brought with them a deeper feeling of rest, serenity and feeling of the eternal, and that these were exactly the sentiments that were needed by the Western people with their overactive life, who still in their heart of hearts have a thirst for the peace, for the infinite peace. I know that I must not accept that praise as my individual share. It is the East in me, which gave to the West.

And I can assure you that the prize, which you have awarded to me, was not wasted upon myself. I as an individual had no right to accept it, and therefore I have made use of it for others. I have dedicated it to our Eastern children and students. But then it is like a seed, which is put into the earth and comes up again to those who have sown it, and for their benefit it is producing fruits. I have used this money which I have got from you for establishing and maintaining the university which I started lately, and it seemed to me, that this university should be a place where Western students might come and meet there eastern brothers and where they might work together and try to find treasures that have laid hidden in east for centuries and work out the spiritual resources of the east which are necessary for all humanity. It could not use it for its own children only. It had to open its gates in hospitality to all races of men. Chinese and Japanese and Persians and all different races of men came, and they had their opportunity of

gaining what was best in India, her best offering of all times and to all Humanity. And she offered it generously. You know the traditions of our country are never to accept any material fees from the students in return to the teaching, because we consider in India that he who has the knowledge has the responsibility to impart it to the students. It is not merely for the students to come and ask it from the master, but it is the master who must fulfill his mission of life by offering the best gift, which he has, to all who may need it. And thus it was in that self expression, of giving what had been stored in India and offering the best thing that she has in herself that made it possible and was the origin of these universities that were started in the different provinces of India.

And I feel that what we suffer from in the present day is no other calamity but this calamity of obscurity, of seclusion, that we have missed our opportunity of offering hospitality to humanity and asking the world to share the best things we have got. We lost our confidence in our own civilization for over a century, when we came into contact with the Western races with their material superiority over the Eastern Humanity and Eastern culture, and in the educational establishments no provision was made for our own culture. And for over a century our students have been brought up in utter ignorance of the worth of their own civilization of the past. Thus we did not only lose touch of the great which lay hidden in our own inheritance, but also the great honor of giving what we have and not merely begging from others, not merely borrowing culture and living like eternal schoolboys.

But the time has come when we must not waste such our opportunities. We must try to do our best to bring out what we have, and not go from century to century, from land to land and display our poverty before others. We know what we have to be proud of, what we have inherited from our ancestors, and such opportunity of giving should not be lost- not only for sake of our people, but for the sake of Humanity.That is the reason, and that led me to the determination to establish an international institution where the Western and Eastern students could meet and share the common feast of spiritual food.

And thus I am proud to say that your awarding me the prize has made some contribution to this great object, which I had in my mind. I do not thing that it is the spirit of India to reject anything, reject any race, reject any culture. The spirit of India has always proclaimed the ideal of unity. This ideal of unity never rejects anything, any race, or any culture. It comprehends all, and it has been the highest aim of our spiritual exertion to be able to penetrate all things with one soul, to comprehend all things as they are, and not to keep out anything in the whole universe- to comprehend all things with sympathy and love. This is the spirit of India. Now, when in the present time of political unrest the children of the same great India cry for rejection of the West I feel hurt. I feel that it is a lesson which they have received from the West. Such is not our mission. India is there to unite all human races.

We must go deeper down. We must discover the most profound unity, the spiritual unity between the different races. We must go deeper down to the spirit of man and find the great bond of unity, which is to be found in all human races. And for that we are well equipped. We have inherited the immortal works of our ancestors, those great writers who proclaimed the religion of unity and sympathy, and say: He who sees all beings as himself, who realizes all beings as himself, knows Truth. That has once again to be realized, not only by the children of the East but also by the children of the West. They also have to be reminded of these great immortal truths. Man is not to fight with other human races, other human individuals, but his work is to bring about reconciliation and Peace and to restore the bonds of friendship and love. We are not like fighting beasts. It is the life of self which is predomination in our life, the self which is creating the seclusion, giving rise to sufferings, to jealousy and hatred, to political and commercial competition. All these illusions will vanish, if we go down to the heart of shrine, to the love and unity of all races.

For this I have come to you. I ask you this and I claim it of you in the name of the unity of men, and in the name of love, and in the name of God. I ask you to come. I invite you.

**(An extract from Gitanjali by Rabindranath Tagore)**

## *Mother*

*If I could give you diamonds*
*For each tear you cried for me.*
*If I could give you sapphires*
*For each truth you've helped me see.*
*If I could give you rubies*
*For the heartache that you've known:*
*If I could give you pearls*
*For the wisdom that you've shown.*
*Have a treasure, mother,*
*That would mount up to the skies.*
*That would almost match*
*the sparkle in your kind and loving eyes.*
*But I have no pearls, no diamonds,*
*As I'm sure you're well aware*
*So I'll give you gifts more precious*
*My devotion, love and care.*

***DALEEP JAKHAR,*** *IV Sem., IT*

# अभिव्यक्ति

## रिश्वत

आजकल के पदाधिकारी चमकाते है अपनी किस्मत
इसके लिए वो लोगो से लेते है रिश्वत।।

गरीबों से भी वसूलते है मोटी रकम
फिर भी ईमान और कर्तव्यनिष्ठा की
तिरंगा तले वो खाते है कसम।

पैसे को मानते है सर्वे सर्वा भ्रष्टाचार को देते है बढ़ावा,
फिर भी भ्रष्टाचार मुक्ति का देते है दावा।।

क्या यही है जनता की सेवा ? उठो युवाओं जागो
मातृभूमि का आया है बुलावा निश्छल मन से आज ये प्राप्त करू
करनी है जनता की सेवा।।

विकास कुमार, बी. टेक., प्रथम वर्ष, सीएस

## राष्ट्रभाषा हिन्दी

दशकों बीते, हमारी स्वतंत्रता गति लाई है,
किन्तु राष्ट्रभाषा हिन्दी ने नही सफलता पाई है।

आता हिन्दी-दिवस, विवश हिन्दी मे लिख लेते है,
जैसे पन्द्रह पर्वो की, बेमन लेकर ढोते है।।

कौन विभाग बचा कि जिसमें अंगेजी का जाल नही
बिना पढ़े अंग्रेजी नौकरी मिलने का सवाल नही।।

हम सबने हिन्दी के विकास पर, अंकुश नया लगाया है,
आँख खोलती पीढ़ी को 'कॉन्वेन्ट स्कूल' पहुँचाया है।।

हर घर, हर परिवार, सभी अंग्रेजी के गुण गाते है,
भले गलत ही, बोल अंग्रेजी, अपनी धाक जमाते है।।

समय आ गया है संभलो, जागो निज भाषा अपनाओं
बनकर सच्चे भारतवासी, घर घर हिन्दी पहुँचाओ।।

राष्ट्रमान की रक्षा के लिए, यह आवाज उठाई है,
दशको बीते, राष्ट्रभाषा ने नही सफलता पाई है।।

राजदीप सुखवाल, बी. टेक., प्रथम वर्ष,
इलेक्ट्रीकल एवं संचार अभियांत्रिकी

## मुश्किल से मिलता है

जिसे हम कह सके अपना बड़ी मुश्किल से मिलता है।
चिजाओं में ऐसा पत्ता बड़ी मुश्किल से मिलता है।।

हम अपने खून के रिश्ते पर यूं नाज करते है।
मगर रिश्ता मुहब्बत का बड़ी मुश्किल से मिलता है।।

जरा सी बदगुमानी पर दिल तोड़ देते है सब
दिलों को जोड़ने वाला बड़ी मुश्किल से मिलता है।।

उदासी के आलम में तबस्सुम ढूँढ़ने वालो
यहाँ हंसता हुआ चेहरा बड़ी मुश्किल से मिलता है।।

तमन्ना सब ही करते है बुलंदी पर पहुँचने की
किसी को मर्तबा-ए-आला बड़ी मुश्किल से मिलता है।।

मै तुमसे प्यार करता हूँ गनीमत जान ये वरना
किसी को चाहने वाला बड़ी मुश्किल से मिलता है।।

दिये फानूस मे जलते तो देखे बहुत लेकिन
हवाओं में जलता दीया बड़ी मुश्किल से मिलता है।।

खुशी में बहुत हमराज मिल जाते है ' ममनून '
गमो को बांटने वाला बड़ी मुश्किल से मिलता है।।

ममनून आलम खान, बी. टेक., तृतीय वर्ष, सीएस

## इक अजनबी बच्चा

आज मै अपने शहर की गलियों में टहल रहा था
थोड़ा परेशान, थोड़ा गमगीन, बस यू ही इधर-उधर
टहलते हुये अपनी तकलीफों का हल ढूंढ रहा था

तभी जरा सी दूर एक अजनबी बच्चे को देखा
जिसके पे जिसके न पूरे कपड़े, न खिलौने और
ना प्यार करने वाला कोई था

मगर वो अपनी मस्ती में खोया हुआ, दुनिया की तकलीफों से कही दूर,
बस अपने आप में रमा हुआ, खामोश सी हंसी और उससे कही ज्यादा
चेहरे से खामोशी सी हंसी और उससे भी ज्यादा चेहरे से झलकती हुई खुशी

न उसे गम है, अपने इस हालात का और ना तकलीफ है इस बात की
कि कोई नही ऐसा, जो उसे प्यार करे, खिलौने लाये और अपनी गोद मे उठाये

मगर इस बात से बेखबर अंजान वो खुशनुमा अजनबी बच्चा
उसकी इस खुशी को एहसास करके ऐसा लगा
कि मेरी तकलीफों का हल मिल गया।
फिर मै मुस्कुराते हुए अपनी राह पर चल पड़ा
कुछ भी ना कहे बिना
खुश रहने की अदा सीखा गया वो अजनबी बच्चा

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