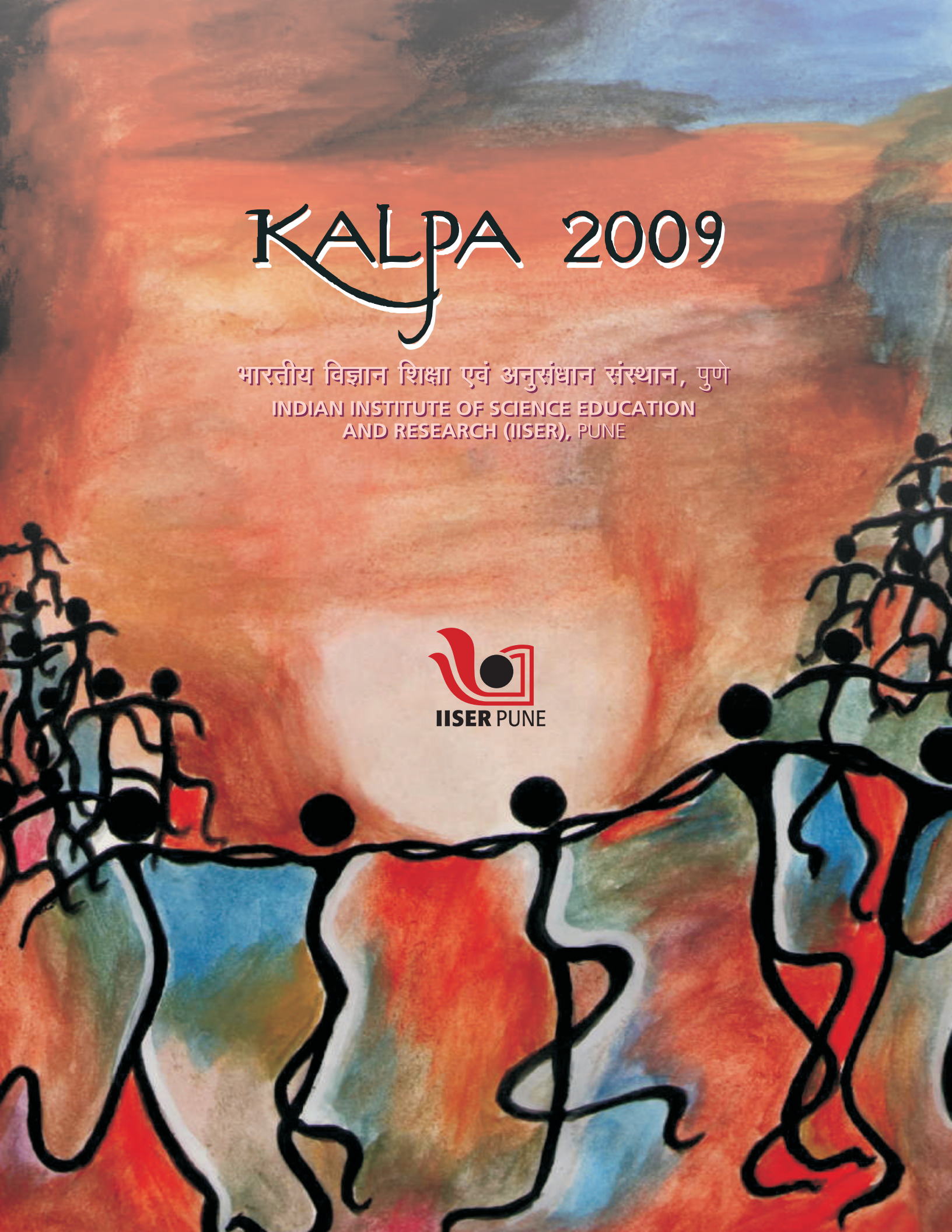
KALPA 2009

भारतीय विज्ञान शिक्षा एवं अनुसंधान संस्थान, पुणे

INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH (IISER), PUNE



Vision

- Create research Universities of the highest caliber in which teaching and education will be totally integrated with the state of the art research.
- Evolve undergraduate and post-graduate teaching in an intellectually vibrant atmosphere of research.
- Make education and careers in basic sciences more exciting through excellence in integrative teaching and learning of sciences

Mission

- Create quality education and research in basic sciences that will nurture curiosity and creativity
- Combine undergraduate and postgraduate teaching with cutting edge research in frontier areas.
- Provide entry into research at a younger age through flexible borderless curriculum and research projects
- Forge actively strong relationships with existing universities and colleges and network with laboratories and institutions
- Establish advanced research laboratories and central facilities to encourage interdisciplinary and

Our Values

- Dedicate to learn, teach and serve the society through excellence in education, research and public service
- Celebrate the spirit of academic excellence
- Create learning and working environment based on integrity, fairness, dignity and professionalism to provide equal opportunities for everyone
- Encourage creativity of students, faculty and staff, recognising individual and collaborative achievements
- Strive to develop tolerance of diversity in community, free of all acts of discrimination and harassment
- Respect, support and value the civil and respectful expression of individual beliefs and opinions
- Develop and encourage sense of environmental responsibility

KALPA
2009

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INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH, PUNE

where tomorrow's science begins today

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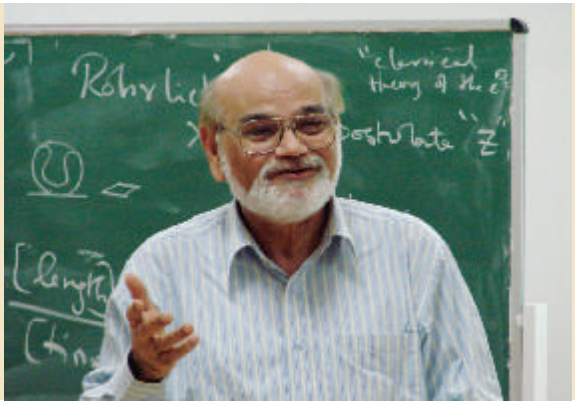


The Message

"Dear Students of IISER PUNE,

It is with much expectation that I look forward to the release of the third issue of the IISER PUNE Magazine--KALPA 2009. KALPA has already become the inner voice of IISER. I know that it is being heard now, and may that it be heard far into the future. Let it inform and critically analyse. Let it bring light and delight to the concerned readership.

Well done. CONGRATULATIONS!"

My best wishes for 2009,

N.Kumar
Chairman, BOG
IISER PUNE

From the Director's desk....

Dear Friends,

I have great pleasure in presenting the third issue of IISER Pune Magazine 'KALPA 2009'. With the first two issues in years 2007 and 2008, KALPA has already become a tool to discover the hidden talents of students and faculty and a window for the stakeholders to see the real growth of IISER Pune. It has been well appreciated by the recipients in the past and I am sure this year's issue will further expand its appeal.

IISER @SAI TRINITY

We have now completed two and half semesters at SAI TRINITY CAMPUS since January 2008 and all entrants have appreciated its functional planning, facilities and maintenance. Till a month ago, it housed only physics, biology and mathematics (faculty and laboratories) and the chemistry faculty had to shuttle between NCL Innovation Park and Sai Trinity building for lectures, seminars, colloquia, meetings, etc. We also encountered difficulty in successfully conducting the chemistry practicals. Due to space problems at NCL Innovation Park, we decided to lease out 3 additional floors (21,000 sq.ft.) in the west wing of Sai Trinity Building. In this space, we have now established Chemistry UG Laboratory for 40 students, research laboratory for about 24 Ph.D students on the 1st floor, a modern instrument hall on the second floor which houses all major analytical equipments such as advanced spectrophotometers (UV, IR, and fluorescence), HPLCs, peptide synthesizer, MALDI-TOF, GC-MS, ITC, DSC-TGA, and the sophisticated laser spectroscopy system. The 3rd floor houses faculty offices in addition to 3 tutorial rooms. Thus, all student activities and teaching / research activities of faculty are now in one site at Sai Trinity campus.

Academic courses

With the beginning of third year, students had to choose courses as per their interest from a *potpourri* of courses offered in different disciplines. One set of 4-credit main courses (40 lectures/semester) and another set of 3-credit courses (30 lectures/semester) of interdisciplinary nature have been offered in each of the disciplines of biology, physics, chemistry and mathematics. Each set comprises of 3-4 courses and students can choose them across the disciplines (minimum 2) summing up to 21 credits. The 4-credit courses are designed towards majoring in a particular discipline, while the 3-credit courses impart breadth. Some courses also have experimental or project components. It was gratifying to see that the students had made a rational and meaningful choice of courses from their interests to majoring in specific subjects. This system would also give each faculty an opportunity to design 3-credit courses in their research relevant topics to develop students' interests. Thus in this semester, IISER Pune is running a total number of 47 courses! While this allows a greater flexibility to students to pursue their interests without compromise, from an operational point of view, scheduling of lectures without overlaps for students, poses unexpected complications. This may perhaps continue to be a limitation as we expand further with this system. We are implementing on-line registration and management of courses using customized software from next semester.

Faculty appointments

Excellent faculty is a key component of any educational institution and I am pleased to inform you about the faculty appointments. The faculty selection process at IISER Pune has become extremely competitive and we have begun to attract the best of the candidates in all

disciplines. Several new faculty have joined IISER Pune during 2008-2009 and a few selected will join later this year. Faculty appointment is a continuous process and there is a pipeline of excellent shortlisted candidates. The number of regular faculty at present has reached 35, with a good balance in every discipline. Thus future faculty selections need not be based on teaching requirements, but mainly for their research potentials and capabilities. The low number of faculty in mathematics during the first two years was worrisome, but this year it is showing a healthy trend with this number reaching 6. In this context, I should welcome Prof. Sujata Ramadorai, a distinguished mathematician from TIFR as an Adjunct Faculty at IISER Pune, who would not only be involved in some teaching programme, but also in faculty development.

Research Publications

Notwithstanding the establishment of complete research facilities, IISER Pune faculty has been active in pursuing research through collaboration with other Institutions. This along with the work done at IISER Pune has already led to about 50 research publications. In particular, I should draw special attention to a few publications in high impact journals such as the one in J. *Am. Chem. Soc* by Dr V.G. Anand and in *Cell* by Prof L.S. Shashidhara. I must emphasise that IISER Pune will be primarily a research institute, with active and meaningful undergraduate teaching programme. The graduation of 1st batch of Masters students would happen only in the year 2011 and by that time, IISER Pune should have established its credentials through excellent research assisted by both undergraduate and research students. The research output would certainly be enhanced by next year as many of the essential facilities in biology and chemistry have been established this year. A matter of great pride for IISER Pune is the establishment of NMR Research Centre having 500 MHz and 400 MHz NMR spectrometers, which was inaugurated by Prof. C.N.R. Rao on 24th December 2008. This is absolutely crucial to all research in synthetic and structural chemistry. In the coming year, we will have established other essential high-end facilities such as confocal microscopy, X-ray diffractometer, cluster computer and many other instruments (TEM, SEM, AFM etc) necessary for research in nanomaterials.

Scientific meetings @ IISER Pune

A new feature this year at IISER Pune has been the organization of 3 scientific symposia which is vital for promoting research. The biology group organized Indo-Sokendai meeting on "Trends in Modern Biology" during 24-25th October, in which a number of Japanese academicians participated along with Indian speakers from IISER and other institutes (such as TIFR, NCCS, IISc, etc.). More than 150 UG students / research scholars from IISER and neighbouring institutions enthusiastically participated in the meeting. An off-shoot of this symposium has been the selection of Surojit Sural (2007 batch), a second year IISER student for an 8 week internships programme in Japan. In the Inter-IISER Chemistry meet organized here during 23-24th December 2008, all the chemistry faculty of all 5 IISERs, including the Directors made scientific presentations on their research programmes. The key note speaker Prof. C.N.R. Rao delivered a lecture extraordinaire on his work in the area of nanoscience which was not only exciting, but also motivating for all faculty on ways to discover new problems and invent novel solutions. This meeting provided an excellent opportunity for young chemistry faculty of all IISERs to know each other's science for future interactions. One session during the meet was to share UG teaching experiences and challenges and ways to find solutions to common problems. IISER Pune also co-hosted National Symposium in Chemistry (NSC-11) during CRSI meeting at NCL, Pune during 5-8th, February 2009. A meeting in Algebra which was organized by the mathematics group during March 9-11, 2009 brought together several distinguished mathematicians at IISER Pune and the deliberations would certainly boost interest in mathematics among the young students. In addition, on 19th November 2009, IISER Pune and NCL jointly organized the traditional "Nobel lectures" where Dr Aurnab Ghose (IISER) and Dr Venkat Panchagnula (NCL), Prof R. Ramachandran (IISER), Dr Debasish Mitra (NCCS), and Prof Pradip Apte (Fergusson College) enlightened the audience on Chemistry, Physics, Physiology and Medicine and Economics topics respectively for which Nobel prizes were awarded in 2008.

IISER – International collaborations

The novel pattern of IISER education, particularly the UG teaching - research model is already catching the attention of international academic community. The UK delegation led by Mr. Bill Ramnell, Minister of state for continuing education, visited IISER Pune with a team of eminent UK educationists. One of the outcomes of the first India-UK Education Forum held at London on 26th September, 2008, where the Indian side was led by Secretary, MHRD, was the decision of UK to collaborate with one new IIT, one new IISER and one new Central University. It was very heartening for us to know that IISER Pune was selected for such collaboration. Visit to IISER Pune by British Deputy High commissioner in October

2008 culminated in a call for expression of interest to all UK higher education institutions to work in partnership with IISER Pune. The short listed institutions for interaction with IISER Pune consists of 14 UK universities. A meeting to evaluate these proposals for selection of partner institutions is under progress. The range of activities include faculty development, joint research programmes, student exchanges and holding joint symposia in emerging areas of interdisciplinary sciences.

I was invited to participate in a meeting of the Asian Research Network (ARN) at Seoul, South Korea in March 2008. ARN aims at creation of future science networking among leading Asian institutes such as RIKEN (Japan), HYU, SNU, KRICT, PSTECH, IPK (all from Korea) and some Institutes from China, Singapore and Vietnam to promote research and development and higher education in basic sciences. IISER Pune was invited to join ARN and subsequently an MoU has been signed between IISER Pune and ARN. This provides an excellent opportunity for faculty and students of IISER Pune to access research facilities set up by ARN at Hanyang University, Seoul and to collaborate with ARN partners. The first symposium in nanoscience area is being held under ARN-NCL-IISER umbrella at Pune sometime in July 2009.

IISER Pune has also signed an MoU with the International Centre for Material Science (NIMS) at Tsukuba in Japan for exchange of researchers and joint research programmes, particularly in the area of material and nanosciences. The international MoUs provide excellent opportunities to IISER Pune to enhance research potentials and leverage the opportunities for fruitful scientific collaboration. I am also proud to report that Dr. Sudarshan Ananth, a faculty in physics at IISER Pune has been identified to lead Max Planck partner group activities in India in gravitational physics under joint funding by Max Planck - DST (New Delhi). Recently, a delegation of Rectors of German universities and an academic delegation of Physics professors from University of Goettingen, Germany visited IISER Pune to explore possibilities of joint programmes.

Student Activities

With already 152 UG students and 32 PhD students in campus, SAI TRINITY is humming and buzzing with innumerable student activities. IISER students from 2007 batch onwards have now become eligible for INSPIRE fellowship scheme launched by DST in which they would get a scholarship of Rs 5000/- p.m and a contingency grant of Rs 20,000/- per year. This is an excellent initiative by Govt. of India to encourage students to take up science. The number of invitees to IISER Pune, for colloquia in a wide variety of disciplines and for special seminars (both research and UG level) has exponentially increased and during most periods there are always a sizeable number of academic visitors. They actively interact with students and it is a common sight to see the academic visitors huddled with a group of students in the garden or cafeteria which have become discussion corners. Notable student activities during this year were the celebration of Darwin's bicentennial year on 12th February, 2009 with student talks, inauguration of International Year of Astronomy with an excellent exposition by *Paddy* (Prof. T. Padmanabhan, IUCAA), celebration of Science Day on 28th February, 2009 with student posters, Science book fair (9000 books), interaction with scientists etc. Other events include organization of an extremely competitive Science Quiz Contest "Mimamsa" with participation of teams from well known colleges in Pune, Karavaan 2009 – the Inter IISER cultural festival and SPICMACAY concert by Ustad Rahim Fahimuddin Khan Dagar. Several student clubs such as Aaroha (music), Science Club, Kalaa (art), Aks (drama) have been formed whose members meet on a regular basis. Madhur Mangalam, a second year student of IISER Pune was chosen for the Spirit of Invention Award for his project on Remote Controlled Auto-cleaning Chalkboard (rotoBOARD+). Gaurav Sawant, a student of 2008 batch has been selected by DST, New Delhi for participation in Lindau (Germany) meeting with Nobel Laureates in Chemistry in June 2009. Sports activities have also begun with IPL (IISER Premier League) Cricket. A new gymnasium, volleyball and basketball courts have been commissioned at HR-1. I wish to acknowledge Dr. Sutirth Dey for his leadership in development of "clubs & culture" @ IISER, Dr. Shivprasad Patil for sports activities and Dr. G. Ambika for organizing the Science day.

Administration

An important aspect of this year has been the progress in the recruitment of administrative and engineering services staff. The joining of Project Engineer and his team has tremendously accelerated the campus planning process right from the selection of Architect to finalizing the master plan, hostel construction, maintenance, arranging leased accommodation etc. A faculty team has spent considerable time in assessing the space required for academics in the envisaged campus and constantly interacting with the architect and project engineer in fine-tuning the internals. As we go to the press, an Asst. Registrar and Deputy Librarian have also joined and the day-to-day administration is now getting nicely streamlined. I must thank all the staff in administration, purchase, finance & accounts for going beyond the call of their duties in timely clearance of all necessary files. A

faculty strength of 35 needs as much administration staff, but with much less than half that strength, administration section has provided all necessary support with high efficiency in solving problems in each new situation, constantly arising as expected in an upcoming Institute. I should thank the Registrar for bearing the brunt of this responsibility. IISER Pune now has a well furnished guest house with 7 rooms which are almost always occupied.

Library and Information Management

During this year, IISER library has undergone a sea of transformation, not only with doubling of books, which is reaching 10,000 in number, but also providing on-line access to at least 150 premier journals on the intranet. Bar-coding and fully automated circulation and cataloguing are being introduced. I should acknowledge Dr. G. Ambika for handling the major responsibility in organising IISER library and Dr. M.S. Santhanam and Dr. Sudarshan Ananth for their technical expertise and constant interest in revamping our website and initiating the Intranet. The next semester will see the implementation of Students' Academic Management system (SAM) on intranet for web-based management of course registration, evaluation and other academic programmes. An energetic System Administrator who has recently joined is streamlining all web-based activities. In my opinion, IISER library should be developed on the model of Bibliotheca of Alexandria, as the main storehouse of information, knowledge and wisdom, and as an icon of IISER Pune.

IISER Campus and student hostel

One of the important steps at IISER Pune during 2008-2009 has been the appointment of architect for campus construction. M/s CRN Associates from Chennai were selected after standard competition procedure and the proposed campus plan has already attracted attention for its creative design and green architecture. A faculty committee interacted with the architect team for more than 2 months to optimize the internals for functional utility and the master plan is under process for approval by local authorities. It is envisaged that the actual construction of campus would begin by June-July 2009 and the first few buildings should be ready for occupation in the beginning of 2011. Meanwhile, the students' hostel of 250 capacity being constructed by CPWD on IISER campus is making good progress and will be ready for occupation by August 2009.

Future Challenges

IISER Pune should now address several future organizational, functional and academic challenges. The meshing of UG students in the research activities, creation of advanced interdisciplinary courses, initiating the 5-year integrated PhD stream, building advanced research facilities in tune with the present and future faculty needs and integration with global science challenges through high quality research contributions in forefront areas of science and attracting eminent national and international scholars for collaboration are the academic challenges. As the number of students continues to grow, creation of proportionate academic infrastructure with right ambience and accommodation needs and campus development constitute functional challenges. We also need to establish external linkages with other academic institutes and industries to facilitate appropriate student careers. Accelerating our campus construction to move at the earliest is one of the top priorities as it gives expression and means to fulfill all expected academic aspirations of IISER Pune. This is possible only with the physical, creative and emotional involvement of everyone at IISER Pune – students, faculty and the staff to the final purpose and meeting the chosen targets always ahead of schedules.

I wish to place on record our deep sense of gratitude to the Chairman and Members of the Board of Governors, for their constant advice and support in all IISER initiatives. I also thank all selection committee members for their immense contributions and outside contributory faculty for critical academic needs. IISER Pune also thanks Mr. R. P. Agrawal, Secretary MHRD, Mr. S. K. Ray, SFAO, MHRD for their acumen in administrative and financial advices and understanding, timely support to the special needs of a newly established institute and other officers of MHRD without whose assistance in various matters, IISER Pune would not have shaped up to take a small step towards growth within this short period.

I would end by quoting Dr. Sarvapalli Radhakrishnan who said, "Education should give us not only intellectual stimulation, but a purpose to live and …any satisfactory system of education should insist on both knowledge and wisdom, 'ज्ञानं विज्ञानं संहितं'." In this spirit, I dream to see IISER Pune create new knowledge while imparting known knowledge, to educate a new generation of students fully equipped to rationally analyse and creatively use that knowledge for the betterment of society.

- Krishna N. Ganesh

Contents

Contents ....

Editorial ...

Hi,

Here's my *'first'* audition for the editorial.

Nothing can be more depressing than to watch a hero crumble and fall and eat grass while you stare helplessly in terror and confusion. Nothing more pickling like seeing a hero embrace the naivety of childhood and cry over a lost toy. Nothing deflating like a hero bursting out emotional and broken for failing the expectations of the whistling crowd. Nothing deafening like listening to the silent speech of unutterable excuses for missing the mark.

To find a hero fallible and prone to unforced errors is the worst of nightmares. And harder still it is to disengage and wake up as you see the hero giving it the best and still getting the red card. You suddenly grow up, uprooted by the winds of tumultuous times. You want to defend the hero by befouling the rest. You want to clear up the field of all the debris and let the hero have it easy. Sometimes though it seems comforting and you find your confidence blooming as you start to think that it's time to usher in a flawless age, with the discovery of a new and revised edition of the next hero who overfills the shoes the former hero left behind. But it is indeed most painful to not have a hero at all and doubt that you might have to be the hero that the world is missing, fill in and stumble uncomfortably in footwear that's two sizes bigger than yours and play a game that's not yours to begin with.

To not have a slightest hope that someone will be there to catch the Earth when you lift it off your weary shoulders and give it a free kick and let it tumble... You wish to save the penalty for a hero grazing near deadly pastures and hope that you made all the difference (of your life) by just that small side kick of a move. You hope that you could shift the burden of your responsibilities to broader and sturdier shoulders; to a person who sticks to the goals and keeps it.

You want to stay away from the confining corners and not be on the offensive offside, wasting a concerted team effort. You wish that there are enough idols left in the world for you to resign into your idyllic island and remain idle with your ideals. You want to be the referee who waves flags maintaining the peace and hope to be capricious like the flight of the unknowing ball.

Everybody can be a staged hero for a short while and be the cause of an uproar of explosions; a clapping like thunder. And even take the central spotlight for a few fleeting moments. Even one who has been pushed to the wings of the stage seems outstanding to a cordoned section of the audience. Even if one is pancaked under the stampede of the heroes getting the spikes in the face, as long as you are on the stage and people are watching you and cheering you on, you are that fly-feast of a hero.

But the question is when you become that hero, do you happen to be a hero for yourself or a hero for the world. Or do you remain a hero only on the field? Most people draw the line at being a hero for fifty odd people within hundred odd yards. And that's where things go wrong. Insufficient heroes who are portraits of a partitioned world staying within the chalk lines and floodlights. To be that hero for humanity: that is a challenge that brings out the hero in yourself.

The world bravely gives birth to heroes and watches them rise and fall while lulling the rest of the world to slumber. But while the heroes team up with the world, the world teems with villains.

Bernoulli had it right when he said: the slower you flow the greater you are under pressure. Just keep enough pressure to bounce to the right height and stay aloft. As long as you are in the right stadium, you are destined for the goal.

Rub in with the blades of grass, and scuttle off outside the boxes. Rise to pluck a few feathers from the birds and alight on the roof. Give the rolling eyeballs a tackle in their orbits as you spent the day in passing. Your unpredictable bladder dances can make the hearts skip a beat and give the bleachers a rest.

You might not be made of gold and shall taste of leather and mud, but you know you will always have the ball. And the world will follow, catching up with you and pushing you ahead.

Cheers,

Sisir

P.S.: But if you're 'out of time' and the final whistle's blown, leave the ground in peace... whether you won or lost, for you've played your game.

And oblige the fans who crave for your autograph, they need you...

ACKNOWLEDGEMENT

At the end of the dashing day, when that comma is tucked in comfortably to sleep and the colon switches off its tail lights, always make it a period to be thankful to those whom you can quote without question.

Running through the huge traffic jam of words, honking at jagged lines that cut the lanes, gasping at that choke of an exhaust, and pausing with relish at the band of carefully crafted words orchestrating in tandem, the pedestrian words that shall matter here in this small intersection are those of red-light gratitude.

We raise a toast to all who helped us brew this delectable magic potion, this elixir of life at IISER : The visionary of this feast who chose the serene picnic spot and laid out the tables, Prof K. N. Ganesh; the host of the stirring evening who gave us a killer recipe, sparkling utensils and crystal goblets, and enchanted the hungry guests and kept them waiting, Dr. G. Ambika; for connectivity and fanfare Dr. Jayakannan, Dr. Girish and Koushik Mondal.

For a well cooked meal, we thank - Madhusudhan the sharpshooter for all the still life (which made us drop our forks), Sumeet the bard for tuning the harp of Hindi, Jagruti for lighting the bonfire with warrior like majesty in Marathi, Ankita for her cauldron of artistic tapestry, Sachit, Noaman, Pooja, Sameer, Ankur for keeping the squirrels out and guarding the sandwich hamper.

A tiring day spent weeding out the infidel herbs, grinding away at the stones to get that tangy sparkling taste, and shielding up your defenses for good fortune, at the end of it all we thank the warm crowd at IISER who complete the banquet of KALPA and spice it up.

Hope we weren't too many cooks that spoilt the broth...

Come and have a bite...

There, there... you got a bit of gravy on your chin... here's a napkin...

Psst! There's just no secret ingredient, but it still is special if you believe in it.

Auspicious moments !!!



Bhoomi Pooja
The construction of our new Hostel in our land started with Bhoomi Puja on 22 Aug 2008 4.30 PM. Dr Sivaram, Director, NCL was present on the occasion.


The NMR Research Center of IISER Pune was inaugurated by Prof C. N. R. Rao, Linus Pauling Research Professor, JNCASR, Bangalore on 23rd December 2008

Bruker 500 MHz NMR spectrometer

Congratulations!!! Congratulations!!! Congratulations!!! Congratulations!!!

Shanti Swarup Bhatnagar Award, 2008 to Prof Shashidhara

The prestigious Shanti Swarup Bhatnagar prize for the year 2008 in Biological Sciences has been awarded to Prof. L S Shashidhara for his outstanding contributions to the understanding of appendage development in animals. He is Professor and Coordinator of our Biology program.

Dr. Sudarshan Ananth heads the Partner Group of the Max-Planck-Institut für Gravitationsphysik hosted by IISER Pune. Partner groups are headed by scientists with proven research records. The Partner group will be jointly funded by the Max Planck Society and the Department of Science & Technology (DST), Government of India. In this capacity, he will receive research support for 5 years. Dr Ananth has also been selected for the award of the prestigious Ramanujan Fellowship by the DST.

Dr Sutirth Dey is awarded the guest fellowship of Wissenschaftskolleg zu Berlin 2008-2009. This year, he is the youngest recipient of this fellowship, the only one from India and one of two from Asia. He will be working at the Wissenschaftskolleg in Berlin from mid-March to mid-June.

Dr V. G. Anand was selected as Young Associate of the Indian Academy of Sciences.
He has also been chosen to serve on the International Advisory Board of a new Journal "Macroheterocycles".

Dr. A. A. Natu was felicitated with the *Aadarsh Shikshak Puraskar,* a prestigious award installed by Pune Vidyarthi Griha (PVG) and its alumni, for his services rendered to the field of science education.

CNR Rao Education Foundation Awards for academic excellence in Sem I & II, 2007-08

Surojit Sural, Sem I

Mohammed Zuhair M M, Sem I

Surojit Sural, Sem II

Academic Excellence prizes for Fall Semester 2007

Sisir C Anand, Sem III

C. B. Ajit, Sem III

Academic Excellence prizes for Spring Semester 2008

More Sushant Nivasrao, Sem IV

Academic Excellence

C B Ajit, Sem IV

Lakshmi Priya M E, Sem IV

Mohammed Zuhair M. M., Sem II

More Sushant Nivasrao has been selected as one of the 15 Rajiv Gandhi Talent Research Fellow (JNCASR) based on his project 'Study of Coarsening in Non-equilibrium Systems'. He did the project during summer 2008 under Dr. Subir K. Das, Theoretical Sciences Unit, JNCASR, Bangalore.

The Technology and Entrepreneurship Club (TEC) of National Chemical Laboratory (NCL) Pune organized NCL-TEC's Technology Idea Competition, during December 2008. Madhur Mangalam (Batch 2007) won the Spirit of Invention Award which consisted of a merit certificate from NCL Research foundation and a cash prize of Rs. 5000 for his project on Remote Controlled Auto-cleaning Chalkboard (rotoBOARD+) which is an electromechanical board that facilitates automation in the normal black board teaching, including multiple writing surfaces, remote control access, auto-cleaning and many other features.

Surojit Sural (Batch 2007) has been selected as a 10 week intern in a summer internship programme NIGINTERN-2009, in the National Institute of Genetics, Sokendai, Japan. His host laboratory is the division of Cytogenetics (Prof. Takeheko Kobayashi's group)

Gaurav Sawant (Batch 2008) has been selected by the DST for participation in the Lindau (Germany) Meeting with Nobel Laureates in Chemistry, in June 2009.

Thirteen students of Batch 2008 were selected for KVPY scholarship in Jan 2009. They are Ashwin T A N, Bhargava T, Kaustubh Sudhir Deshpande, Krithika Mohan, Madhusudan Raghunathan, Md. Noaman, Nishant Singh, Ramya Balaji, Iti Kapoor, Ravi Shankar P, Kumbhare Rohan Surendra, P Sruthi and Shreyas Supekar.

As part of Science Day celebrations at IISER, a poster contest was organized on the theme '**National Science Scenario**' on Feb 28, 2009. The prize winning posters are

First prize : Darshan Joshi & Shadab Alam - "ASTROSAT- Indian Multi-wavelength Astronomy satellite"

Second prize : Harita Rao - "Green Chemistry - Proline based asymmetric synthesis"

Third prize shared by, Madhuresh Sumit - "Towards Functional Materials; Emergence of an Interdisciplinary Science" and MM Mohammed Zuhair & P. Venkata Reghu Tej - "Primality Tests"

Director's Consolation prize for an Experiment - Gaurav Sawant, Piyush Agrawal & Abhinaw Kumar - "Chemical Oscillations".

In addition during 2008-09, Discussion club of IISER organized a Hindi Extempore competition **(Ashubhashan Pratiyogita)** on 18-Sep-2009 at Raman Hall.

I Prize : Kumar Saurav (Topic: Aaj ke yug mein Gandhigiri)

II Prize : Nishant Singh (Topic: Andhvishwas aur dainik Rashiphal)

III Prize : Parivesh Priye (Topic: Kabutar aur mobile).

IISER Pune Drama Society, AKS, organised a creative advertisement contest called **'Bech Sakho To Becho'.** 8 Teams participated in the event, out of which 5 teams were in Ab Becho and 3 in Sab Becho category.

The winner in Ab Becho category is the team consisting of :

Mohit Raghuwanshi, Piyush Agrawal, Abhinaw Kumar and Sandeep Suman

The best performance in Sab Becho category was adjudged to be by Madhur Mangalam

Kalaa, the Arts Club held a **Movie Poster Making Competition**

The winners are

1. The Dark Knight - Hemant Katiyar
2. Deewaar - Sameer Parihar
3. a. Rang de Basanti - Anuj Bisht, Karan kapoor, Sandeep Gupta, and
   b. Rang de Basanti - Madhur Mangalam

Our Hearty Congratulations to all !!!

Annual Day 2008

The ides of March brought out the spirit of the parade in early Rome. And so did we at IISER on March 15, 2008. The Annual Day at IISER was a day when we did a reality check on our standing, and patted ourselves on the back for our small steps towards growth and recharged ourselves for a grueling year ahead, ready to face bravely the challenges and surprises it would bring.

Director's welcome note : The Year's Progress

Prof Yash Pal releasing KALPA 2008

Prof K. N. Ganesh in his welcome note compressed a year's worth of painstaking progress into slide show minutes. Dr. Sivaram expressed hope that IISER's younger blood would fuel NCL and keep ageing science on its toes, and foresaw the symbiosis leading to groundbreaking collaborations. From amongst the students Surojit and Anuradha recounted their adventures as they merged with the IISER crowd and found their perch. Dr. R. G. Bhat, Dr. Mayurika Lahiri and Dr. Sudarshan Ananth shared their happiness at being involved with the successes and failures at IISER and envisioned happy years of tenure and looked forward to the interdisciplinary warfare at the cafeteria. Sisir proposed a toast to the ideas that save the world and urged everyone to rediscover their box of crayons that lay imprisoned in their vestiges of childhood. Prof Yash Pal finally freed KALPA from its long slumber.

Prof Yash Pal envisions IISER as a university

Audience interacts with Prof. Yash Pal

Prof Yash Pal, came on to the podium welcomed by roaring carefree claps, and turned this back on the audience, probing the science behind how the clap works and then went on to discuss the geophysical premise behind earth being a unique habitat for life. He then motivated the growth of independent Indian science towards developing indigenous instrumentation and technology, and reiterated its significance today as we heavily rely on importing science and hence living off only the canopy of science without cultivating it from the grassroot levels. Academic scholars and budding artists were ceremonially felicitated alike with cash/book vouchers.

Distinguished members of the audience

Prof. Ganesh presenting a memento to Prof. Yash Pal

Prof. Yash Pal appreciating the campus development staff

Administrative and engineering staff were lauded for their devotion towards keeping IISER from keeling in rough seas. The Registrar wound up the celebrations with a vote of thanks, saluting the spirit of IISER. Bedartha and Aksha compered with lively grace.

- Sisir

Karavaan '08

IISER Pune celebrated its second annual cultural fest, Karavaan-08 on 16/03/08. It was the first one to go by the name 'Karavaan' – one year later, we were to celebrate Karavaan-09. We increased the wing-span of Karavaan as well, with IISER Kolkata agreeing to come and be a part of the event. (Later, we went one step ahead and had IISER Bhopal in addition to IISER Kolkata, take the stage for Karavaan-09.)

On the day of the event, what the diverse and all-age audience saw in an almost packed Chandrasekhar Auditorium, IUCAA, was that which the performers had tried to master over weeks of intense preparations, for them. With a compering team of a journalist who surprised the host of the show unawares, we started our journey, showcasing our skills at performances, all very different, but complementing the ones which we do practice in our science routine. Group songs (from Hindi movies and albums) backed by guitars and a synthesizer, and occasionally the beats of a congo, did not just come once or twice but four times, to entrance the audience, with their haunting, soulful melodies. As if that weren't enough to exhibit the wide spectrum of talent we have, we had two solos too, a Western Classical piece on piano and a metal song from a foreign band, accompanied by vocals and a guitar. But the highlight of the show was definitely a pop song, rendered wonderfully well by the vocalist and efficiently backed by the synthesizer.

Dance performances kept coming at regular intervals – a number of students coming together to do a devotional folk dance; a romantic, heart-touching dance performance by two; a Bollywood fusion sequence; and a salsa pair. Besides that, we had another western dance, this time on a mix of a few English songs. IISER Kolkata also chipped in with their own Bollywood fusion

dance piece; and the mystic dance sequences within their drama performance also need to be mentioned. Speaking of drama, we had in total four plays, spanning a wide variety of genres. Two comedies, one on two boarders who finally meet each other in what they each claim to be their own lodging, and the whims of their greedy landlady; and the other one transcending eras where a scientist with his sidekick, go on an unexpected journey to witness the historical and mythological events of the past. There was also a romantic, heart-rending play

based on a series of letters exchanged between two childhood friends, portraying how people change with time. IISER Kolkata, on the other hand, through their play, showcased the inseparable companionship of angels and demons in the human history.

The winning entry of a competition on presenting photographs shot and compiled together into a 'still' video, which provided insights into the lighter side of IISER, was also projected. Karavaan-08 was also about team work by the back-stage staff, a big group of students working hard to make sure the food, the lights, the music, the props, the paper work, the hospitality, and that helping hand came, all the time.

We could very well call it an inter-IISER cultural fest, and with Karavaan-09, we took one more step forward in making it one of the most dearly awaited events of the year, for each of the IISERs.

- Sarthak Parikh

Updates on the present IISER campus

Culturing Biology in the Lab

Wander down the eastern end of the third floor of the central tower and you might smell a peculiar sweetish yeasty odour; peep into one of the rooms and you will see a thousand odd tubes plugged with cotton amid a small army of microscopes. That'll be the fly room of the biology lab, where the mysteries of life are investigated. Hey! But flies are not the only interesting creatures in this lab with over a dozen PhD scholars and project assistants. These researchers are here to study life and behold strange specimens like the Profs and undergrads.

Roam around the various sections (without making too much noise) and you'll pass through the research lab with every workbench stacked head high with battalions of bottles, equipment, boxes of pipette tips, comps, instruments and snaking wires (yes, Bio labs do have lots of wires); the microscope room with well, microscopes (really cool ones); the Tissue Culture room which you can't roam around in (sensitive to contamination); the instrumentation room packed with meters, hoods, centrifuges, fridges and microwaves (NO they are not for warming up your pastry) and the teaching lab home to more comps, meters, microscopes and other miscellany of equipment. The resident subjects of study are the cancer cell lines, chicken eggs and Drosophila. The teaching lab has housed at various times some fish, tadpoles and an assortment of various plants.

The stuff in the lab that needs to be highlighted (that we like to brag about) are : The Apotome-computer interfaced - optical sectioning capable - fluorescence enabled - differential interference contrast microscope, the multimode plate reader, the fly station, lots of stereo dissection microscopes, tissue culture set up, vacuum concentrators, ultracentrifuges, the inverted microscope with micromanipulators and the cell counter. Also to be mentioned are the RTPCR, numerous deep freezes and the GelDoc set up. But the last and not the least, the ultra-cold (near freezing) air-conditioning in the lab deserves special mention, as it was the first thing to pop up when the inhabitants of this lab were asked to tell us what they found 'cool' in there!

Seeing the labs, it's hard to imagine most of this has all come up in less than a year, described laconically as, 'in March '07 we had a biology floor...'. Some of the stuff was moved from the Innovation Park campus but the lab has been in a state of continuous growth. Even as I write this there are crates outside the lab, as always. It never seems to reach carrying capacity... and something tells me we can expect to be impressed by the productivity.

- Sachit

Working up Chemistry

And finally chemistry has moved to Sai Trinity from NCL Innovation Park in December-2008, the reason being insufficient space to carry out research activities. This problem was further aggravated due to the arrival of sophisticated equipments, which are crucial for the research and training and need to be installed for speedy progress.

It was decided then to acquire the three additional floors measuring 15,000 sq.ft. in the West Wing of the Sai Trinity. The main idea was to have all the science labs in the same premises, essentially for the students- teacher interaction as the classes are held in the Sai Trinity Campus. Once this decision was taken, our team started working for planning and execution of the work, which was completed by December-2008.

On the first floor we have our research lab, where forty students are pursuing their projects. The lab is well equipped with modern gadgets. As the safety is our major concern, we have also installed eight ductless fume hoods for carrying out hazardous reactions. All the research students have been made familiar with the safety aspects of lab experiments and waste disposal. Besides, there is a practical hall for 40 undergraduate students, which is supplemented by a small instrumentation room.

As modern Chemistry can't be done without using 'state of the art' analytical and separation instruments, the entire second floor is devoted to such equipments. Some of the major equipments that have been bought are MALDI-TOF, Mass Spectrometer, GC-MS, HPLC's, Flash Chromatography, Fluorescence Spectrometer, ITC (Isothermal Calorimeter), DSC, Peptide Synthesizer and so on (soon this list will appear on our website). A dedicated laser lab and high end computer cluster will also be housed on the floor. Adequate care has been taken for providing enough space for smooth operation and storage of spares etc.

The interdisciplinary nature of IISER is evident on the third floor, where 24 faculty members from all the disciplines will have offices. A small administrative office and a committee room have been also provided for closer interactions and scientific deliberations. There are also two tutorial rooms mainly for the courses of senior students.

Now are you tempted to enter the Chemistry premises? The only thing, do not enter from cafeteria side after sipping coffee, directly into the lab. We would rather much like you to use main entrance from the West Wing.

- A.A. Natu

Catching up on your reading

The library is now expanding at a very tremendous pace with about 10,000 books (including 2680 e-books) and access to 150 international journals. It is getting digitalised and automated fully. A multifunctional reprographic facility has been set up for the use of students and faculty.

Computing Facilities

Since its inception, the computing facility at IISER is centrally powered by world's leading manufacturer(s) which contributes almost entirely to the active components consisting of LAN Switching, IP telephony, perimeter security, wireless access, handheld, video and desk phones, intrusion detection and prevention system. It is a symbiosis of computing, network, graphics and visualization. To meet the ever-increasing demands of High Performance Computing (HPC) for scientific research among the students and faculty of the institute, IISER is expecting to procure a High Performance Computer within the next few months.

General purpose numerical packages such as Matlab, Mathematica along with architecture-specific mathematical libraries and some special purpose packages like software for computational chemistry such as Gaussian with Gaussview, software for Biology research groups such as sigmaplot and systat, software for Physics research groups such as LabView, support the computational facility at IISER.

The network operates at 10/100/1000 Mbps connectivity to the desktops and servers and also get connected to the network core at the same speed. To provide a high end-user performance, we have 10G capable inter-wing switch at the core, which operates at 128 Gbps switching back-plane, allows a 20Gbps inter-switch link and routes inter VLAN traffic seamlessly.

As IISER is an upcoming Institute, there exist a huge possibility of creating a high-end heterogeneous environment to provide different flavors of high performance computing and high-end graphics visualization. In the forth-coming years, we need man-power, computing power and all around positive support to build a state-of-the-art computing centre at IISER.

- Koushik Mondal

IISER Guest House

This year we have added a third part to our Hall of Residence, HR3, consisting of three bungalows and one flat in a housing complex in Sus area. In addition we run a guest house in Bhavani Ajala, Sutarwadi (Ladies) and another in Sus road (Gents) for Research Scholars and Post docs. Our new well-furnished guest house in Sus-Baner link road, Pashan has seven rooms and an in-house catering.

Sprouting roots… the upcoming campus

IISER Pune is developing its campus in the 98 acres of land near National Chemical Laboratory Pune. The Ministry of Human Resource Development (MHRD) has sanctioned Rs. 100 crore for campus construction. The campus consists of an academic block over 34,000 sq. mtr. and residential buildings over 83,000 sq. mtr. area. Other facilities like land development, roads, electrification, water supply and drainage, solar heating systems, rain water harvesting, solid waste management, etc. are also to be taken up. The site is rectangular in shape with its longer section parallel to the north south direction.

M/s. C.R. Narayana Rao, Architects and Engineers of Chennai, are planning and designing for the development of campus. They have prepared a project based on the "green field concept" :

- Organization zone which comprises Main block, Lecture theater block, and Laboratory complex, Library and computer center has been planned closer to the main entry from the Baner road.
- Residential zone which comprises of hostel buildings and Faculty housing occupies the southern private part of the site with a separate entry from Pashan road.
- Support zone which comprises of sports field, Swimming pool, and club house has been planned in close proximity to the residential zone.
- Services zone has been planned near the Baner road.
- Nature zone which runs as green belt from north to south links all the zones and also acts as buffer between the organization and residential zones.

Valuable inputs, active discussions!!

… our final campus

Already on the road…

Securing our boundaries

- Strong axis lines which connects the organization buildings.

Passive and active green building concepts is planned and Orientation, landscaped courtyards, wind tunnel effects, storm water management system, energy efficient lighting fixtures, are considered in the designing.

The laboratory block has been planned as G+2 structures with a central core and three radiating wings for four disciplines physics, chemistry, maths and biology. The internal atrium is an island of reflection having a kind of oasis of trees, water and flowers cut off from the wider world. Social interaction is the key element of the laboratory design.

Laboratory has been planned to accommodate three main spaces, the research laboratory, small teaching and seminar rooms and offices..The library and computer block has been clubbed together.

The IISER Pune is planning to implement the concept in to the reality soon and one of the hostel buildings is already under construction having (G+3) floors and construction is reached to the first floor level. The hostel will have 112 double bedded rooms, kitchen, and Dining hall having capacity of 210. Apart from above each floor will have TV room, indoor games facility, recreation room, laundry etc. Provision for power back up Diesel generator set and Solar heating system is also planned. The hostel building is likely to be completed with all respect up to Jan. 2010.

- A. K. Pandey

Up and up …..day by day

Center for Resonance

-T. S. Mahesh

*"**T**here the snow lay around my doorstep - great heaps of protons quietly precessing in the earth's magnetic field…"* : explained emotional Edward Purcell in his Nobel-lecture in 1952 about his feeling after the first successful observation of resonant electromagnetic absorption by nuclear spins in a kilogram of paraffin.

The hyperfine splittings of certain optical spectra were observed by Albert Michelson as long ago as in 1881. They remained unexplained for a long time. In 1924 Wolfgang Pauli proposed the existence of nuclear magnetic moments (spins), and explained the hyperfine splittings as due to the electron-nuclear interaction. The first experimental verification was made in 1938 by Isidor Rabi using molecular beams. Seven years later in 1945, Felix Bloch and Edward Purcell independently observed the resonant induction in probe coils by the bulk nuclear magnetization of solids and liquids. Since then the development of Nuclear Magnetic Resonance (NMR) spectroscopy has been staggering.

NMR has a diverse list of applications such as characterization of chemical composition, determination of molecular structures and their dynamics, studying lattices in crystalline, amorphous or polymer materials, monitoring phase transitions, understanding protein folding, discovering designer drugs, sensing explosives and landmines, identification of oil fields, and the list goes on. NMR characterization is vital for chemical synthesis, understanding biomolecules, polymers, ceramics, liquid crystals, superconductors, zeolites, geology, micelles, grains, glasses, etc.

NMR imaging, which is popularly known as the Magnetic Resonance Imaging (MRI) is a very powerful non-invasive tool not only for medical diagnosis but also for material characterization. The recently emerging functional MRI (fMRI) can capture dynamic information in the image area and has important applications from Physics to Psychology. For example, fMRI is used to study neural activities in brain by monitoring dynamic distributions of blood flow in cognitive areas.

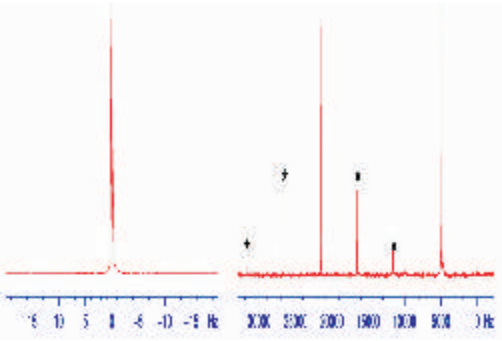
Apart from these applications, what fascinates most of us is that NMR provides a window into the deep concepts of the underlying quantum theory itself. Richard Ernst in his Nobel-lecture says "the world of the nuclear spins is a true paradise for theoretical and experimental physicists. It supplies, for example, the most simple test systems for demonstrating the basic concepts of quantum mechanics and quantum statistics, and numerous textbook-like examples have emerged". With the help of resonant radio frequency electromagnetic pulses, we can achieve precise control over nuclear spin dynamics. By monitoring the spin dynamics we can gain experimental knowledge on spin-field interactions, quantum coherence, spin-spin exchange interaction, dipole-dipole interaction, quadrupole interaction, hyperfine interaction, spin diffusion, chemical exchange, spin relaxation, geometric phase, quantum Zeno effect, quantum tunneling, quantum chaos and so on.

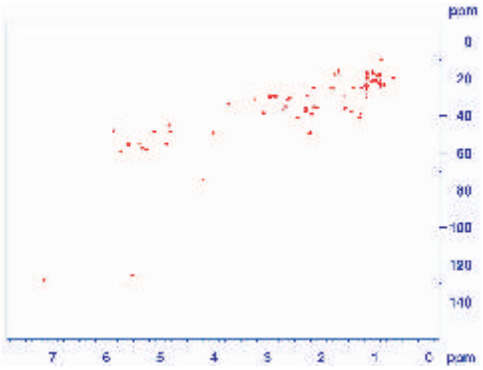
One exciting addition to the above list is the possibility of studying quantum information using a nuclear spin system. A system of N mutually coupled spin ½ nuclei provide 2^N level quantum system corresponding to N-quantum bits (qubits). Quantum computing has the potential to tackle certain complex problems that are intractable to ordinary computers. Building a quantum computer, however, remains a daunting challenge. A system encoding a non-trivial quantum information will be in such a delicate state that the information gets lost irreversibly in milli seconds due to the constant interference with the environment. Fortunately, as in most of the other NMR applications, the strength of NMR qubits lies in the weakness of nuclear interactions with the external world. As a result, the NMR qubits can encode and retain the coherent information for hundreds of milliseconds, which is sufficiently long to perform hundreds of unitary operations corresponding to various logic gates. Presently NMR is the most successful test-bed for quantum information. Currently the electron-nuclear spin-based architecture is one of the candidates for building a large scale Quantum Computer.

The NMR Research Center of IISER, Pune was inaugurated by C. N. R. Rao, Linus Pauling Research Professor, JNCASR, Bangalore on 23rd December 2008. The center currently has two state-of-the-art spectrometers. NMR techniques for liquids and solids differ both in terms of the hardware and in terms of spin control techniques. The Bruker 500 MHz (this is the Larmor frequency of proton in a magnetic field of strength 11.75 Tesla / 1,17,500 Gauss) spectrometer has a capability to carryout experiments with liquid, liquid crystalline, as well as solid samples. The sample quantity is generally a few milligrams. The wide-bore superconducting magnet is so well shielded that the stray field outside the magnet container is less than 5 Gauss. The spatial inhomogeneity of the magnetic field at the center is less than one part in 10^9. As a result, the spectrometer can provide a resolution better than 0.3 Hz out of 500 MHz. The whole magnet weighing more than a ton floats on an air cushion to damp floor vibrations. The spectrometer is equipped with five independent

radio frequency channels with high power (up to 1 kW) amplifiers. The solid samples can be spun inside the magnet at 15 kHz (9,00,000 rpm) to time average certain anisotropic inter nuclear / shielding interactions. The sample temperature can be varied from -140 to +150 degrees Celsius. The spectrometer is also equipped with triple axis gradient amplifiers to enable pixel selection. The JEOL 400 MHz (9.4 Tesla) spectrometer has an automatic sample changer. It is useful for high throughput screening of a large number of liquid samples. It has a standard-bore superconducting magnet with similar homogeneity and resolution as that of the Bruker magnet. This spectrometer has three independent RF channels and a single axis gradient. Both of these spectrometers span most of the elements and their isotopes.

The NMR Research Center aims to create an excellent environment for research in spin dynamics, quantum information processing, and for characterization of inorganic or organic compounds, biomolecules, polymers, nano materials etc. Apart from the research activities, the center intends to train students and PhD scholars on both theoretical principles and experimental aspects of NMR. It also looks forward to develop a close collaboration with the neighboring National Chemical Laboratory and other education and research institutes. The mission is clear and simple: science education and research.





^{1}H spectrum of Chloroform liquid (left) and ^{13}C spectrum of Glycine powder (right) spectra recorded in the Bruker 500 MHz spectrometer. The frequency axes are with respect to the carrier frequencies for ^{1}H (500 MHz) and ^{13}C (125 MHz) resonances respectively. ^{1}H spectrum has a line width of 0.27 Hz. The asterisks in the ^{13}C spectrum correspond to the magic angle spinning sidebands.

Two dimensional ^{1}H / ^{13}C correlation spectrum of cyclosporin recorded in the Bruker 500 MHz spectrometer. The spectrum provides information about the sequential arrangement of amino acids in the cyclic peptide.

IISER Hall of Residence 3 - Our HR3

On August 13, 2008 - day of registration at IISER for the new batch of students, we were asked to fill out forms and were given our hostel bed numbers. Brimming with curiosity, we were shuttled in batches to our hostel HR3 (Hall of Residence!). And so we were all packed into 3 bungalows and 1 flat in an apartment. Little did we know we would be living in the lap of luxury that our seniors were deprived of… All girls were packed into one bungalow (that's 14 of us); three batches of 12 odd boys in 2 other bungalows and the flat. Apart from the doorbell which the watchmen use rather infrequently, life is almost peaceful in the hostel. Late into the night, everyone is tucked in bed and by the daylight; everyone is shipped to the institute. The ground floor of our hostel is home to 6 girls and the top floor is occupied by 8 girls. And it won't be a wonder to see some of us balancing ourselves on the water-tank or on the roof as we enjoy our evening sunsets up on the terrace. The hostel is indeed a place where we share (foodstuffs from home), care (by fetching water for one another) and learn to live together. All we hope now is that this experience will be a bridge to our new life (in the new hostel) that we are all awaiting.

- Krithika

A Hearty Welcome to the IISER Family

Prasad Subramanian,
Assistant Professor

M.S. Santhanam,
Assistant Professor

Girish Ratnaparkhi,
Assistant Professor

Arijit Bhattacharya,
Assistant Professor

Anupam Kumar Singh,
Assistant Professor

Anjan Banerjee,
Assistant Professor

Shouvik Datta,
Assistant Professor

Arun Venkatnathan,
Assistant Professor

Seergazhi Srivatsan,
Assistant Professor

Apratim Chatterji,
Assistant Professor

Pranay Goel,
Assistant Professor

Deepak Barua,
Assistant Professor

Narmada Khare,
IISER Fellow

Harsh Chaturvedi,
IISER Fellow

Farhat Habib,
IISER Fellow

Bharathi Nuthakki,
Visiting Faculty

Nishikant Subhedar,
Visiting Faculty

Atul Kumar Pandey,
Project Engineer cum
Estate Officer

Ramesh Mohite,
Personal Assistant

Mahesh Rote,
Personal Assistant

Shraddha Visal,
Office Assistant
(Multiskill)

Koushik Mondal,
Scientific Officer
(System Administrator)

Manoj Chaudhari,
Personal Assistant

Manoj Mane,
Technical Assistant
(Electrical)

Vijaykumar Shinde,
Technical Assistant
(Civil)

Vinayak Vipat,
Assistant Engineer
(Electrical)

Santhosh Nevse,
Assistant Registrar

Umeshreddy Kacherki,
Deputy Librarian

Nilesh Gharge,
Assistant Engineer

PhD Program @ IISER Pune

The graduate program in basic sciences with pre-doctoral research leading to PhD is running in full swing since last year. We have at present 30 research scholars registered for research.

List of Research Scholars with their research areas

1. Amar Mohite - Enzyme Inhibitors, Organic Synthesis - Dr. R.G. Bhat
2. Ameya Mahajan - Understanding the molecular mechanism of macromolecules acting as long distance signals in phloem - Dr. Anjan K. Banerjee
3. Anupam Bandopadhyay - Unnatural Peptides for gp41 Inhibitors - Dr. Hosahudya N. Gopi
4. Anurag Sharma - Cytoskeleton remodelling during axonal outgrowth - Dr. Aurnab Ghose
5. Arthur Varghese - Study of Photovoltaic Cells - Dr. Shouvik Datta
6. Arun Babu K.P. - Study of Forbush decrease - Dr. Prasad Subramanian
7. A.V.R. Murthy - Microscopy - Dr. Shiva Prasad Patil
8. Deepak Jain - Peptide Nucleic Acid Chemistry - Prof. K.N. Ganesh
9. Jay Prakash Shukla - DNA damage and checkpoint protein interaction and signalling - Dr. Aurnab Ghose
10. Kanika Bansal - Electronic Properties of Photovoltaic Materials and Devices - Dr. Shouvik Datta
11. Madhusudan G Ingale - Theoretical Physics
12. Mahima Goel - Polymer Chemistry - Dr. Jaykannan M.
13. Maroti Pawar - Synthesis, Incorporation and Applications of Functionalised Nucleoside Probes - Dr. Srivatsan S.G.
14. Mithila Handu - Role of Sumoylation in Drosophila Innate Immune System - Dr. Girish Ratnaparkhi
15. Naveen Prasad - Evolutionary Aspect of Development of Flight Appendages in Insects - Prof. L.S. Shashidhara
16. Nitin Bansonde - Peptide Nucleic Acid Chemistry - Prof. K.N. Ganesh
17. Padmashri V Patil - Study of Nano Photovoltaic Cell - Dr. Shouvik Datta
18. Payal Arya - TopBP1 and its role in the ATR signaling pathway during DNA damage - Dr. Mayurika Lahiri
19. Prakash Sultane - Enzyme Inhibitors, Organic Synthesis - Dr. R.G. Bhat
20. Reshma Talreja - Investigating stability and life history traits in D. Melanogaster populations - Dr. Sutirth Dey
21. Sachitanand Mali - Peptide Chemistry - Dr. Hosahudya N. Gopi

22. Sandip Jadhav - Peptide Chemistry - Dr. Hosahudya N. Gopi
23. Savita Singh - Characterisation and Identification of targets of UBX in Drosophila melanogaster - Prof. L.S. Shashidhara
24. Senthilkumar D - Gene Regulation in Drosophila Development - Dr. Girish Ratnaparkhi
25. Shekhar Shinde - Nano-conducting Polymer Chemsitry - Dr. Jaykannan M.
26. Shree Harsha TT - Evolutionary Aspect of Development of Flight Appendages in Insects - Prof. L.S. Shashidhara
27. Sneha Bhogale - Understanding the molecular mechanism of macromolecules acting as long distance signals in phloem - Dr. Anjan K. Banerjee
28. Soumya Singha Roy - Wavelet Transform & Fractional Fourier Transform for NMR data processing- Dr.T.S.Mahesh
29. V Resmi - Synchronisation of Chaotic Systems - Dr. G. Ambika
30. Vikram Shettigar - Gene Regulation in Drosophila - Dr. Girish Ratnaparkhi

Post doctoral fellows

1. Arkaja Kumar - Developmental Biology
2. Anuradha Mehla - Developmental Biology

Project Assistants

1. Hardik Panjwani - Physics
2. Shekhar Shinde - Chemistry
3. Abhishek Kulkarni - Biology

Papers / Posters presented in conferences / seminars

1. 'Characterization of Neuronal Formin in Cytoskeletal remodeling at Axon Growth Cone' - **Anurag Sharma** – NCBS/Micromanager sponsored Microscopy course - 'Principles of Light Microscopy : A training course with focus on Asia' - 1-7 March 2009
2. "Synchronization in systems coupled through environment" - **V. Resmi** and G. Ambika - Raman Memorial Conference, University of Pune, 26 & 27 February 2009
3. Fractional Fourier Transform For NMR Data Processing- Soumya Singha Roy & T S Mahesh - NMRS 2009 (Nuclear Magnetic Resonance Socity) - IICT Hydearbad - 2-5 Feb, 2009 - selected as one of the best posters

Conferences / Workshops attended

4. V. Resmi- DST SERC school on Nonlinear Dynamics, Indian Institute of Science, Bangalore, 26 June - 16 July 2008
5. V. Resmi - International Conference on Nonlinear Dynamical Systems and Turbulence- IISc- IMI-Bangalore- July 17-22,2008
6. Ameya Mahajan - Global Potato Conference, Delhi - 9-12 Dec 2008
7. Abhisehk Sahasrabudhe and Anurag Sharma - 34th Mahabaleshwar Seminar on Modern Biology - 'Mechanosignalling in Cell and Developmental Biology' - 14-18 Feb 2009
8. Reshma Talreja - Evolutionary Biology Workshop held at Abasaheb Garware College, Pune.-12-14 Feb 2009
9. Aniruddh Sastry - Genomics, Model Organisms and Diseases, NCBS Bangalore- 1-2 Oct 2008
10. Abhishek Sahasrabudhe, Anurag Sharma, Naveen Prasad, Vikram Shettigar, Ameya Mahajan, Mithila Handu, Shree Harsha TT, Savita Singh, Payal Arya & Aniruddh Sastry - XXXII Conference of Indian Society of Cell Biology and Symposium on Stem Cells and Pattern Formation- 4th – 6th Dec 2008.
11. Abhishek Sahasrabudhe, Anurag Sharma, Mithila Handu, Aniruddh Sastry &Savita Singh - 4th Benny Shilo Developmental Biology course at NCBS-TIFR Bangalore - 23rd Dec 2008 to 3rd Jan 2009.
12. Amar Mohite, Anupam Bandyopadhyay, Mahima Goel, Prakash Sultane, Sandip Jadhav & Sachitanand Mali - **INSA-KOSEF** (Indo –Korean) **symposium in organic chemistry**, 12-13 Jan 2009, NCL, Pune
13. Amar Mohite ,Anupam Bandyopadhyay,Mahima Goel, Maroti Pawar, Nitin Bansode, Prakash Sultane, Sandip Jadhav, Sachitanand Mali & Deepak Jain - **RSC-CRSI Joint Symposium**, 5th Feb 2009, NCL, Pune
14. Amar Mohite, Anupam Bandyopadhyay, Mahima Goel, Maroti Pawar, Nitin Bansode, Prakash Sultane, Sandip Jadhav, Sachitanand Mali & Deepak Jain - **11th CRSI National Symposium in Chemistry**,6-8 Feb, NCL , Pune.

Academic activities of faculty during 2008-09

Research Publications*

1. Mode-specific photoionization dynamics of a simple asymmetric target: OCS, **Aloke Das**, E. D. Poliakoff, R. R. Lucchese, and John D. Bozek, J. Chem. Phys. 130, 044302 (2009).
2. Mutifractal Analysis of Physiological Data- a non-subjective approach – **G Ambika**, K P Harikrishnan & R Misra - Complex Dynamics of Physiological Systems: from Heart to Brain-S K Dana et al (eds)-Springer 2008-p 21
3. Virus Immune Drug Dynamics - **G Ambika** & Neelesh Dahanukar - Nonlinear Dynamics-M Daniel & S Rajasekar(eds) - Narosa 2008-p 207
4. An algorithmic computation of Mutifractal Spectrum of time series - K P Harikrishnan, R Misra & **G Ambika**-Nonlinear Dynamics-M Daniel & S Rajasekar(eds)- Narosa 2008-p 235
5. Anticipatory synchronization with variable time delay and reset - **G Ambika** & R E Amritkar- Phys. Rev E-2009(in press) - arXiv:0810.5613v1 [nlin.CD]
6. Combined use of correlation dimension and entropy as discriminating measures for time series analysis -K P Harikrishnan, R Misra & **G Ambika**-Communications in Nonlinear Science & Numerical Simulation-14,3608 (2009)
7. Efficient use of Correlation entropy for analysing time series data - K P Harikrishnan, R Misra & **G Ambika** - Pramana (J Phys) 72, 325 (2009)
8. Conjugacy Classes of Centralizers in G2 - **Anupam Kumar Singh** - Journal of the Ramanujan Mathematical Society vol. 23 no. 4 (2008).
9. Self-assembly of sparsely distributed molecules: an efficient cluster algorithm - **A. Bhattacharyay** & A Trvisi - Chem Phys. Lett 458, 210 (2008)
10. Morphological changes of superconducting phases in a mixed state with a normal current: a multiple scale analysis - **A. Bhattacharyay** - J Phys A: Math. Theor. 41,112001 (2008)
11. A simple model for dynamic phase transitions in cell spreading - **A. Bhattacharyay**- J Phys A : Math Theor. 41,055101 (2008)
12. Laboratory evolution of population stability in *Drosophila*: constancy and persistence do not necessarily coevolve- **Dey, S.**, Prasad, N.G., Shakarad, M., and Joshi, A. 2008. *Journal of Animal Ecology* **77** (4), 670-677.
13. *1,4-linked 1,2,3-Triazole des-peptidic analogues of PNA (TzNA): Synthesis of T-oligomers by "click" reaction on solid phase and stabilization of derived triplexes with DNA*, Gitali Devi and **Krishna N Ganesh**, *J. Org. Chem*. 2009 (in press)
14. Regulating receptor PTP activity- **Ghose, A**. and Van Vactor, D. in R. A. Bradshaw and E. A. Dennis (eds.). Handbook of Cell Signaling. Elsevier, Inc. (2008) (in Press).
15. Fak56 functions downstream of integrin áPS3âí and suppresses MAPK activation in neuromuscular junction growth - **Ghose,A** ., Tsai, P-I., et al. Neural Development, 3, 26(2008)
16. Introducing metallocene into a triazole peptide conjugate reduces its off-rate and enhances its affinity and antiviral potency for HIV-1 gp120. **Gopi, H.**, Cocklin, S., Pirrone, V., McFadden, K., Tuzer, F., Zentner, I., Ajith, S., Baxter, S., Jawanda, N., Krebs, F. C., Chaiken, I. M. *J. Mol. Recognit*. 2009, 22(2), 169-174.
17. Structure-based rationale for interleukin 5 receptor antagonism. Ishino, T., Harrington, A. E., **Gopi, H.,** Chaiken, I. *Curr. Pharm. Des*. 2008, 14(12), 1231-1239.
18. Structural determinants for affinity enhancement of a dual antagonist peptide entry inhibitor of human immunodeficiency virus type-1. **Gopi, H.**, Umashankara, M., Pirrone, V., LaLonde, J., Madani, N., Tuzer, F., Baxter, S., Zentner, I., Cocklin, S., Jawanda, N., Miller, S. R., Schön, A., Klein, J. C., Freire, E., Krebs, F. C., Smith, A. B., Sodroski, J, Chaiken, I. *J. Med. Chem*. 2008, 51(9), 2638-2647
19. Divergent Nanostructures from Identical Ingredients: Unique Amphiphilic Micelle Template for Polyaniline Nanofibers, Tubes, Rods and Spheres. Anilkumar, P.; **Jayakannan, M**. *Macromolecules,* 2008, *41*, 7706- 7715.
20. Hydroxyl Functionalized Polyaniline Nano-spheres: Tracing Molecular Interactions at Nano-surface via Vitamin-C Sensing. Anilkumar, P.; **Jayakannan, M**. *Langmuir*, 2008, *24*, 9754-9762.

**some of the publications are based on work done by faculty prior to joining IISER*

21. Probing the p-stack Induced Molecular Aggregation in p-Conjugated Polymers, Oligomers and Their Blends of Poly(phenylenevinylene)s. Amrutha, S. R.; **Jayakannan, M**. *J. Phys. Chem. B*. 2008. *112*, 1119-1129.

22. Polyurethane-Oligophenylenevinylene Random Copolymers: p-Conjugated Pores, Vesicles and Nano-Spheres via Solvent Induced Self-organization. Deepa, P.; **Jayakannan, M**. *J. Polym. Sci. Polym. Chem.* 2008, *46*, 5897-5915

23. Solvent Free and Non-isocyanate Melt Transurethane Reaction for Aliphatic Polyurethanes and Mechanistic Aspects. Deepa, P.; **Jayakannan, M**. *J. Polym. Sci. Polym. Chem. 2008, 46*, 2445-2458.

24. Renewable Resource based Poly(m-phenylenevinylene) and their Statistical Copolymers: Synthesis, Characterization and Probing of Molecular Aggregation and Forster Energy Transfer Processes**.** Anish, C. Amrutha, S. R. and **Jayakanann, M**. *J. Polym. Sci. Polym. Chem.* 2008, *46*, 3241-3256.

25. Nitric Oxide Decreases Motility and Increases Adhesion in Human Breast Cancer Cells. **Lahiri, M**. and Martin, JHJ. *Oncology Reports*, 21, 275-281(2009).

26. Spins as qubits: Quantum information processing by nuclear magnetic resonance, Dieter Suter and **T. S. Mahesh**-*J. Chem. Phys.*128, 052206, (2008)

27. NMR implementation of adiabatic SAT algorithm using strongly modulated pulses, Avik Mitra, **T. S. Mahesh**, and Anil Kumar-*J. Chem. Phys*. 128,124110, (2008)

28. Gelation of Covalently Edge-modified Laponites in Aqueous Media: Rheology and NMR, S. Patil, R. Mathew, T. G. Ajithkumar, P. Rajamohanan, **T. S. Mahesh**, G. Kumaraswamy-*J. Phys. Chem B,* 112, 4536, (2008)

29. Polynomial Representation of Long knots- **R Mishra** & M Prabhakar- International Journal of Mathematical Analysis(in press).

30. Synthesis of 2-amido, 2-amino, and 2-azido derivatives of the nitrogen analogue of the naturally occurring glycosidase inhibitor salacinol and their inhibitory activities against O-GlcNAcase and NagZ enzymes- Niloufar Choubdar, ***Ramakrishna G. Bhat***, Keith A. Stubbs, Scott Yuzwa and B. Mario Pinto; ***Carbohydrate Research***, 2008, *343* 1766–1777

31. Nanoscale organization of Hh is essential for long range signaling. Vyas, N., Goswami, D., Manonmani, A., Sharma, P., Ranganath, H.A., VijayRaghavan, K., **Shashidhara, L.S.,** Sowdhamini, R. and Mayor, S.- ***Cell*** 133, 1214-1227. (2008).

32. Cell cycle regulation by the pro-apoptotic gene Scotin**.-**Gupta, R.K., Tripathi, R., Naidu, B.J., Srinivas, U.K. and **Shashidhara, L.S**. - ***Cell Cycle*** 7, 2401-2408 (2008).

33. Human APC sequesters â-catenin even in the absence of GSK-3â in a Drosophila model. Ramesh Rao, P., Makhijani, K. and **Shashidhara, L. S**.- ***Oncogene*** 27, 2488-2493. (2008).

34. Involvement of neuropeptide Y Y1 receptors in the nicotine triggered and withdrawal responses with reference to feeding behavior in rat. Nakhate, K.T. Dandekar, M.P., Kokare, D.M., and **Subhedar, N.K**. European J. Pharmacology (2009). (in press).

35. $GABA_A$ receptors in nucleus accumbens shell mediate the hyperphagia and weight gain following haloperidol treatment in rats. Meena, H., Nakhate, K. T., Kokare, D.M., **Subhedar N.K** Life Sciences. (2008). (in press).

36. Cocaine- and amphetamine-regulated transcript (CART) containing systems may play a major role in the manifestation of depression: social isolation and olfactory bulbectomy models reveal unifying principles. Dandekar, M.P., Singru, P.S., Kokare, D.M., R.M., Thim, L, Clausen, J.T., **Subhedar, N.K**. Neuropsychopharmacology(2008). (in press).

37. Transient up-regulation of cocaine- and amphetamine-regulated transcript peptide (CART) immunoreactivity following ethanol withdrawal in rat hypothalamus. Dandekar MP, Singru PS, Kokare DM, **Subhedar, N.K.** Brain Research 1240: 119-131(2008)..

38. Neurosecretory neurons of the nucleus preopticus (NPO) express salmon GnRH mRNA and show reproduction phase-related variation in the female Indian major carp, *Cirrhinus mrigala* (Ham.). Sakharkar, A.J., Mazumdar, M., Singru, P.S., **Subhedar, N.K.** Comparative Biochemistry and Physiology-Part A: Molecular and Integrative Physiology (in press: doi:10.1016/j.cbpa.2008.07.005) (2008)..

39. Association of cocaine-and amphetamine-regulated transcript and neuropeptide Y in the forebrain and pituitary of the catfish, *Clarias batrachus*: A double immunofluorescent labeling study. Singru, P.S. Mazumdar, M., Barsagade, V., Lechan R.M., Thim, L., Clausen, J.S., **Subhedar, N.K**. J. Chem Neuroanat. 36: 239-250(2008)..

40. Forbush decreases and turbulence levels at CME fronts-**Subramanian, P**., Antia, H. M., Dugad, S. R., Goswami, U. D., Gupta, S. K., Hayashi, Y., Ito, N., Kawakami, S., Kojima, H., Mohanty, P. K., Nayak, P. K., Nonaka, T., Oshima, A., Sivaprasad, K., Tanaka, H. and Tonwar, S. C., Astronomy and Astrophysics-2009(in press).
41. Driving Currents for Flux Rope Coronal Mass Ejections-**Subramanian, P**. and Vourlidas, A.,, Astrophysical Journal-2009-(in press).
42. The quintic interaction vertex in light-cone gravity, **Sudarshan Ananth**, Physics Letters B 664 (2008) 219.

Papers presented in conferences

G. Ambika

- Stochastic resonance in discrete systems- Stochastic Resonance 2008(SR2008)- Perugia, Italy Aug 17-21,2008
- Bifurcation sequences in synchronized maps- Bedartha Goswami & G Ambika- International Conference on Nonlinear Dynamical Systems and Turbulence- IISc- IMI-Bangalore- July 17-22,2008
- Antiphase Synchronization in Environmentally Coupled Oscillators- G Ambika & Sheekha Verma- National Conference in Nonlinear Systems and Dynamics(NCNSD), Kolkata, March 5-7,2009

Anjan Banerji

- Moving a signal mRNA through Phloem superhighway IISER (India) - SOKENDAI (Japan) Lecture Workshop on "Trends in Modern Biology" 24th to 25th October, 2008,
- Long-distance trafficking of mobile RNAs in phloem, Dept of Microbiology and Cell Biology, Indian Institute of Science, Bangalore, India, 5th November, 2008
- From light to dark, understanding molecular signals for potato tuberization, Potato Genomics and Biotechnology, Central Potato Research Institute (CPRI), Shimla, 14th November, 2008.
- Transport of RNAs/proteins in Phloem and their potential roles in long distance signaling. Dept of Zoology, Ahmadnagar College, Ahmadnagar, Maharashtra, IISER Pune Outreach programme, 10th January 2009,
- Molecular Biology of tuberization in Potato, Global Potato Conference in New Delhi, from 9th to 12th December. 2008.

Girish Ratnaparkhi

- "*Genomics, model organisms and Disease*", Oct 1-2,2008, at the National Centre for Biological Sciences, Bangalore.
- "*International Symposium on Nuclear Architecture and Chromatin Dynamics*", Nov 26-28, 2008at the Centre for Cellular and Molecular Biology, Hyderabad.
- "*XXXII All India Cell Biology Conference &. Symposium on Stem Cells and Pattern Formation*". Agharkar Research Institute, Pune, India 4th-6thDec, 2008.

Mayurika Lahiri

Lahiri, M and Freudenreich, C.H. Expanded CAG repeats activate the DNA damage checkpoint pathway. The Young Investigators' Meeting, Poovar, Kerala, India-Feb2009

Prasad Subramanian

"Constraints on turbulence in the solar corona: results from GMRT-NRH observations at 327 MHz" - 'Low Frequency Radio Universe', Dec 8-12 2008 , NCRA-TIFR, Pune

Invited lectures

Aloke Das

1. "Mode-specific photoelectron dynamics in polyatomic molecules using synchrotron radiation", RRCAT (Raja Ramanna Centre for Advanced Technology) Indore on April 10, 2008.

2. "Old electrons falling in new traps: Mode-specific photoionization dynamics in polyatomics", Discussion meeting on Spectroscopy and Dynamics of Molecules and Clusters (SDMC 09) on February 20-22, 2009 at the Sana Beach Resort, Mandarmoni, West Bengal.

G. Ambika

1. Virus Immune Drug dynamics- C V Raman Memorial lecture- Rajiv Gandhi Centre for Biotechnology, Trivandrum - Nov 07, 2008.
2. Synchronisation with variable delay & reset- Pune-Goettingen Workshop- University of Pune, Feb 28, 2009.

Anupam Kumar Singh

Real and Strongly Real Classes in Algebraic Groups-HRI-24 Dec 2008

Arun Venkatnathan

1. "Modelling and simulation of polymer membrane nanostructure and molecular transport in fuel cells", Inter-IISER Chemistry Meet held at IISER, Pune, December 22,23, 2008.
2. "A computer simulation of polymer membrane nanostructure and molecular transport in fuel cells",Discussion meeting on theoretical chemistry, TCS-2009, Indian Institute of Science, Bangalore, Jan 18-22, 2009.

Aurnab Ghose

1. Building Nervous systems-Indian Academies- Workshop, 150 Yrs Since Darwin: Behavioral Adaptations & Evolution at Sophia College, Mumbai, India
2. Cell Biological Logic of axon guidance: Insights from a single receptor-Trends in Modern Biology, Indo-Japan Symposia at IISER Pune, India
3. ECM as instructive cues for axon guidance-Research seminar at BioQuant, University of Heidelberg, Germany

Anjan Banerjee

1. StBEL5 –a long distance signal for potato tuberization. "Research and development needs in transgenic farming era, December 11-31. 2008, University of Agricultural Sciences, Dharwad, Karnataka
2. RNA transport and long distance signaling– an insight from phloemics. Dept of Biotechnology, University of Pune, Pune, on 23rd November, 2008

K. N. Ganesh

1. *Collagen Analogs: Synthesis and Biophysical Studies on 4-Aminoproline Collagen,* Recent Trends in Collagen, Central Leather Research Institute, Chennai, 24 January 2008
2. *Discovery of novel HIV Tat –NFkB DNA interactions by SELEX.* Institute of Life Sciences, Hyderabad, 29 January 2008
3. *Nano DNA: Templated assemblies of Gold/Silver nanoparticles on DNA towards function,* International meeting of "Impact of Nucleic Acid Nanostructure on Function" (INSOF), NCBS, Bangalore, 13 February 2008.
4. *Indian Institute of Science Education and Research, Pune,* Presentation at Asian Science Forum, Hanyang University, Seoul, 29 Feb 2008.
5. *Nanostructure of nucleic acids,* BARC Symposium on Functional Materials, BARC, Mumbai, 6 March 2008.
6. *Nano DNA: From Genetics to Generics*, Rotary Club meeting, National Chemical Laboratory, Pune 22 March 2008
7. *Nano DNA-Future Directions: From Genetics to Generics,* Future Directions in Advanced Material Research, Shimla -18 April 2008
8. *Nanobiology: From Genes and Gene products to Generic products*. Indo Iran Joint Conference in Nanoscience, Teheran, Iran, 29 April 2008.
9. *Challenges at the interface of chemistry and biology*. RSC-WIS meeting, University of Pune, 5 September 2008
10. *4-Substituted proline collagen analogs as potential biomaterials: Design, synthesis and molecular properties.*

International Symposium on Frontiers of Functional Materials, University of Kolkata, Kolkata. 6 October 2009.

11. *Electrostatic encapsulation of DNA with gold/silver nanoparticles and study of DNA-Ferrocene conjugates.* Academy for Developing World (TWAS), Annual Meeting, Mexico, 13 November 2008.
12. *Bionanotechnology*, Bangalore Nano, Bangalore 12 December 2008
13. *Science Career*, CPYLS, NCL, Pune, 19 December 2008.
14. *Bio-inspired Chemistry: From collagen analogs and peptide nucleic acids to DNA Nanotechnology and HIV*, Inter IISER Chem, IISER Pune, 22 December 2008.
15. *NMR solutions to seemingly trivial but tricky problems: Some interesting examples from our research*, NMRS 2009, Indian Institute of Science and Technology, Hyderabad 3 February 2009
16. *Discovering novel HIV Tat –NFkB DNA interactions by SELEX,* Conference on Interface of Chemistry and Biology, NCBS-IISc, Indian Institute of Science, Bangalore, NCBS-17 February 2009
17. *Nucleic acid based Based therapeutics*, Poona College of Pharmacy, Pune, 23 February 2009
18. *On becoming a successful researcher,* Institute of Bioinformatics and Biotechnology, University of Pune, Pune, 28 February 2008.

Girish Ratnaparkhi

1. "Genomic Recycling by NF-kappaB proteins in *Drosophila*" Indo-Japan Trends in Modern Biology, IISER, Pune, India.
2. "The making of the Fly: The first few hours"-Ahmadnagar College, as part of the IISER-Outreach teaching Program.

M. Jayakannan

1. Mutiple conducting polymers: Nanostructures from Identical chemical ingredients- International conference on Polymers: Micro to Nano Scale - September 22-24, 2008, M. G. University, Kottayam.
2. Conducting Polymer Nano materials : Design strategies for molecular sensing-International conference on Smart materials, Structures and Systems during July 24-26, 2008, IISc Bangalore.
3. Conducting Plastics: Fundamentals and Applications- meeting for popularizing science on "Conducting plastics: fundamentals and Applications", Pune University, September 5-6, 2008.

Mayurika Lahiri

1. The DNA Damage Surveillance Pathway in Human Pathologies.-National Symposia on Recent Trends in Modern Biology, Pune University, India.
2. Expanded CAG repeats activate the DNA damage checkpoint pathway. -Genomics, Model Organisms and Disease, NCBS, Bangalore, India.
3. The DNA Damage Surveillance Pathway in Human Pathologies. -Trends in Modern Biology, IISER, Pune, India.

A. A. Natu

1. Phytochemistry (FMR Mumbai March 2008)
2. Industry-Academia interaction (DY Patil University Pune, March 2008)
3. Conceptualization in Chemistry (HBCSE Mumbai May 2008)
4. High throughput Synthesis (Goa University, July 2008)
5. Natural product processing (Forensic Lab ,Delhi , September 2008)
6. Interdisciplinary Biology ,(MS University Baroda, September 2008)
7. Newer diagnostics (Khalsa College Mumbai , October 2008)
8. IISERs (Creative academy Pune, October 2008)
9. Mass Spectroscopy for Biologists (Pune University and Fergusson college, Pune - November 2008)

10. Biotechnology (SNDT University Pune, November 2008)

Prasad Subramanian

1. "Forbush Decreases and CME turbulence" Second Indo-Chinese wokshop in Solar Physics, Kunming, China, Aug 7-8 2008
2. "Driving Currents for CMEs" Magnetic Coupling between the Interior and the Atmosphere of the Sun: international meeting commemorating the centenary of the Evershed effect, Dec 2-5 2008, Indian Institute of Astrophysics, Bangalore
3. "Forbush Decreases observed with the GRAPES-3 telescope" - Winter School on Astroparticle Physics, Dec 21-29 2008, Tata Institute of Fundamental Research, Ooty
4. "Physics of the Solar Corona" - Winter School on Radio Astronomy, Dec 15-23 2008, NCRA-TIFR and IUCAA, Pune
5. Short video clip on "Space Weather and the Solar-Terrestrial connection" produced by the Homi Bhabha Centre for Science Education, Tata Institute of Fundamental Research, on the occasion of the International Year of Astronomy

Rama Mishra

1. Projective Knots – Knots in Washington- Washington, USA- Feb 28, 2009
2. From Polynomial Knots to projective Knots- univ of Rochester- March 3, 2009
3. Projective Knots- Conference on low dimensional topology and geometry at NEHU, Shillong, July 2008:
4. Polynomial Knots- Seminar on Analysis, Differential Equations at MS University, Baroda, Jan 2009
5. Khovanov topology- IISc Bangalore: Feb 2008
6. A categorization of Jones Polynomial- IIT Guwahati: April 2008

Ramakrishna G. Bhat

"*Synthesis of Novel Glycosidase Inhibitors*" -1st Inter IISER Chemistry meet held at IISER Pune on Dec 22-23, 2008

M. S. Santhanam

1. "Chaotic ratchet : dynamics of particle in finite well" International Conference on Cold Atoms - IISER Kolkatta - Dec 12-16, 2008.
2. Quantum Chaos and 1/f noise- Pune-Goetingen Workshop- University of Pune, Feb 28, 2009

L. S. Shashidhara

1. *"Drosophila* homologue of ataxin-2 binding protein-1 functions as a context-specific cofactor of Ci/Gli, the key mediator of Hedgehog signaling". International Symposium on 'Model Organisms and Stem Cells in Development, Regeneration and Disease.' NCBS, Bangalore. February 23-25, 2008.
2. "Wing to haltere transformation in Drosophila: prepared and executed by a Hox protein". Institute of genetics, Mainz, Germany. 13th June 2008.
3. "On the evolution of insect wings". International Entomology Congress. 6 - 12 July 2008, Durban, South Africa.
4. "Ataxin-2 Binding Protein 1 is a context-specific cofactor of Cubitus-interruptus in Drosophila". Institut de Recherches "Signalisation, Biologie du Développement et Cancer" Nice, France. 15th October 2008.
5. "Model organisms in Drug discovery". Advinus, Pune. 14th November 2008.
6. "Basic Biology to Biotechnology" Maharashtra Biotechnology Day. University of Pune. 14th November 2008.
7. "Making of a fly wing: an evolutionary perspective". Platinum Jubilee Celebrations of Indian National Science Academy, New Delhi 10th January 2009.
8. "Making of a fly wing: an evolutionary perspective". University of Pune, Dept of Zoology. 24th January 2009.
9. "Science & technology and peace: Understanding human evolution". International Seminar on the Centenary of *Hind Swaraj*. 12-14th February 2009.

10. "Making of a flight appendage: an evolutionary perspective". Indian Agricultural Research Institute (IARI). New Delhi 20 February 2009.
11. "Making of a flight appendage: an evolutionary perspective". Young Investigator meeting. Trivandrum 24-28 February 2009.

N. Subhedar

1. 'Synapses and Neurotransmitters' at the Department of Biochemistry of the University of Baroda, Baroda, on September 27, 2008 – IISER outreach programme
2. 'Synapses and Neurotransmitters' at the Department of Zoology, Ahmadnagar College, Ahmadnagar, on November 10, 2008 – IISER outreach programme
3. 'Neuroanatomical basis of circadian rhythms' at the DST sponsored School in Chronology, Department of Zoology, University of Lucknow, Lucknow on November 19, 2008.
4. 'The fine art of immunocytochemistry' at the Central India Institute of Medical Sciences, Nagpur on December 8, 2008.

Sudarshan Ananth

1. Perturbative relations between gauge theory and gravity, Theoretical Physics Colloquium, Tata Institute of Fundamental Research, May 2008
2. Gravity as the square of Yang-Mills, "New Trends in Field Theories" Conference at the Banaras Hindu University, Nov 2008
3. The forces of Nature, School of Physical Sciences Seminar, Jawaharlal Nehru University, Nov 2008
4. The forces of Nature, Physics Seminar, Chennai Mathematical Institute, Chennai, Nov 2008

Sutirth Dey

1. An overview of Biology & How populations stabilize- IISER Lecture Series at MS University, Baroda: 27-Sep-2008.
2. Stability through mortality - *Drosophila* meeting at the University of Mysore: 29-March-2008.
3. Space matters: Metapopulation dynamics of *Drosophila melanogaster*- Trends in Modern Biology conference (IISER-Sokendai), IISER-Pune : 24-Oct-2008.

Participation in workshops/conferences/seminars

G. Ambika

1. International Conference on Nonlinear Dynamical Systems and Turbulence- IISc- IMI-Bangalore- July 17-22,2008
2. Women in Science- A career in Science- 5 April, CUSAT, Cochin
3. Workshop on Grading system- Higher Education Council, Kerala-April 2008

Aurnab Ghose

1. "Model Organisms and Stem Cells in Development, Regeneration and Disease" meeting at Bangalore, India
2. "Genomics, model organisms and disease" at Bangalore, India
3. XXXII All India Cell Biology Conference and Symposia on "Stem cells and Pattern formation" at Pune, India

Arun Venkatnathan

11th CRSI National Symposium at NCL, Pune, Feb 6-8, 2009

Ramakrishna G. Bhat

1. 4th INSA-KOSEF (Indo-Korean) Symposium in Organic Chemistry (Held at National Chemical Laboratory, Pune, Jan, 2009)

2. CRSI-11 and RSC symposium in chemistry (held at National Chemical Laboratory, Pune, Feb 5-8, 2009) Member-Organizing Committee

Shivprasad Patil

Nanosikkim III - Mechanics and friction at the nanoscale at Pelling in Sikkim India. Nov 10-14, 2008

Organization

L. S. Shashidhara

A session on "Evo-devo of insect wings" at International Entomology Congress. 6 - 12 July 2008, Durban, South Africa

Organizing committee meeting of Indo-US Frontiers of Science Symposium. Washington DC, USA, 26th July 2008.

Lecture workshop on "Behavioral Adaptations and Evolution" at Sophia College, Mumbai, 29-30 August 2008.

Lecture workshop on "Evolution" at Vivekananda College, Shimoga, 3rd January 2009

National Frontiers of Science Symposium of the Indian National Science Academy, New Delhi 21-22 January 2009.

Memberships and affiliations

K. N. Ganesh

1. JC Bose Fellow, National Chemical Laboratory, Pune 411008
2. Honorary Professor, Jawaharlal Nehru Centre for Advanced Scientific Research, Jakkur, Bangalore
3. Member, Board of Governors
   - Indian Institute of Technology, Bombay, Mumbai
   - Indian Institute of Science Education and Research, Kolkata
   - Indian Institute of Science Education and Research, Mohali
   - Indian Institute of Science Education and Research, Bhopal
   - Indian Institute of Science Education and Research, Thiruvananthapuram
4. Member, Nanoscience Advisory Group, Department of Science and Technology, New Delhi
5. Member, Research Council, Indian Institute of Chemical Biology, Kolkata
6. Member, Indian Advisory Council, Lady Tata Memorial Trust, Mumbai
7. Reviewer, ERC grants (Materials and Synthesis), European Commission, Zurich
8. Titular Member, International Union of Pure and Applied Chemistry.
9. Member, Editoial Board, *Chemistry, a Asian Journal*, Wiley-VCH, Germany
10. Member, board of studies, Biotechnology, University of Pune, Pune

A. A. Natu

1. Hon Advisor to German Academic Exchange Service Bonn
2. Member , Scientific Advisory committee , ICMR Institute of Herbal Medicines
3. Member of senate SVNIT University Surat
4. Member , Board of studies DY Patil University Pune
5. Convener , Burro of Indian standards Delhi
6. Fellow of Maharashtra Acdemy of Scinces
7. Board of Directors , Bakul Pharma ltd.
8. Member of three DSIR monitoring committees

L. S. Shashidhara

1. Member, Taskforce on Seribiotechnology, DBT, New Delhi.
2. Member, Expert Committee on BOYSCAT, DST, New Delhi.
3. Member, Faculty Selection Committee, IISER-Kolkata.
4. Member, Faculty Selection Committee, IISER-Trivandrum.
5. Member, Faculty Selection Committee, Dept of Zoology. University of Pune
6. Member, Platinum Jubilee Advisory Committee, Indian Academy of Science, Bangalore.
7. Member, Selection Committee (Animal Sciences). Indian National Science Academy, New Delhi.
8. Chair, Organizing Committee: National Frontiers of Science Symposium.
9. Chair, Organizing Committee: Indo-US Frontiers of Science Symposium.

Mayurika Lahiri

1. Member of Indian Society of Cell Biology [Life]
2. Member of Indian Association for Cancer Research [Life]

International visits

G. Ambika

1. Noise in Physical Systems Lab, University of Perugia, Italy- International Confrence, Stochastic resonance 2009-August 2008
2. University of Maryland for discussions - May 2008

Aurnab Ghose

1. Research seminar at BioQuant ,University of Heidelberg, Germany-Dec2008

K. N. Ganesh

1. Asian Research Network (ARN) at Seoul, South Korea in March 2008.
2. Academy for Developing World (TWAS), Annual Meeting, Mexico, 13 November 2008.
3. Indo Iran Joint Conference in Nanoscience, Teheran, Iran, 29 April 2008

Rama Mishra

1. Visit for discussions- Mt Holyoke College, MA, USA- May 2008 & Boise State University- June 2008
2. Lecture and discussions,University of Washington, Rochester-Feb 2009

L. S. Shashidhara

1. Institute of Genetics and Department of Neurobiology, University of Mainz, Germany for collaborative work - **June 2008**
2. Durban, South Africa-as invited speaker and organizer of a session at the International Entomology Congress - **July 2008**
3. US National Academy of Science, Washington DC, USA-as Chair of the organizing committee on Indo-US Frontiers of Science Symposia - **July 2008**
4. Institute of Developmental Biology and Cancer, Nice, France for collaborative work- **October 2008**

Prasad Subramanian

1. Second Indo-Chinese workshop on Solar Physics, Kunming, China Aug 7-8, 2008

Exposure to research at the UG level

IISER aims at promoting research at a young age and combining UG teaching with research in the frontier areas. This is practised by encouraging the students to take projects during the winter and summer vacation in IISER itself or in other Institutes of the country. Several of our students have been selected by Indian Academy of Sciences for the Summer Program and in the VSP of many other Institutes like JNCASR, Bangalore and NBHM, TIFR etc. They also participate in research level conferences, seminars, workshops, summer and winter schools etc. The detailed list for the year 2008-09 is given below.

Moreover the research component is integrated into the course work by introducing a 3- credit course as Lab training / Theory project from Semester V onwards. The students who opt for this can work in the lab or in a theory project under one faculty in one semester at the end of which, he/she will be assessed, graded and credited for the work done throughout the semester. In the next semester, they could work with the same faculty or with another faculty. This novel feature introduced in IISER Pune is well received by students and is expected to give them sufficient training to start on a project right at the beginning of the final year.

- **Bedartha Goswami** presented a poster on Bifurcation sequences in synchronized maps at International Conference on Nonlinear Dynamical Systems and Turbulence - IISc-IMI-Bangalore - July 17-22,2008

- **Shadab Alam & Mohammed Zuhair M.M.** presented a poster with the interactive session on Generating fractals from regular n-gons at National Conference on Nonlinear Systems & Dynamics (NCNSD 2009), Saha Institute of Nuclear Physics, Kolkata, March 5-7, 2009

Sr.	NAME	TOPIC OF PROJECT / SEMINAR	INSTITUTE	DURATION
1	Sushant N More	Coarsening in Non-Equilibrium Systems (Rajiv Gandhi Science Talent Research Fellowship)	JNCASR, Bangalore	Summer '08
2	Sisir C. Anand	Evolution of Eusociality in Insect Colonies	JNCASR, Bangalore	Summer '08
3	C B Ajit	Many Body Physics with Ultracold Gases,	Harishchandra Research	
		Summer School in Biophysics	Institute, Allahabad	Summer '08
4	Lakshmi Priya M E	MTTS – 2008 (Level1)	RIE, Mysore	Summer '08
		VSRP – 2008	TIFR, Mumbai	
5	Nitin Singh Chouhan	Aggression in Flies	IISER, Pune	Aug'08-Jan'08
6	Harita Rao	Application of Propargyl oxychloride in CLICK CHEM	IISc, Bangalore	Summer '08
7	Bedartha Goswami	DST SERC School in NLD	IISc,Bangalore	Summer '08
		NCNSD	PRL, Ahmedabad	Jan' 08
8	Ruchi Gupta	YSFP – 2008	Physics Department,	
			IISc, Bangalore	Summer '08
9	Prakhar Arora	Game Theoritical Model & Urban Bio-diversity of Bangalore	ATREE, Bangalore	Summer '08
10	Sheetal Kumar Jain	Decoupling in liquid state NMR	IISER, Pune	Summer '08
11	Lokeshwar Bandhu	Development Biology	NCBS, Bangalore	Summer '08
12	Ankur Gupta	Frequency Locking in Laser Lab	IISc, Bangalore	Summer '08
13	Varun Rishi	Superconductors	JNCASR, Bangalore	Summer '08

Sr.	NAME	TOPIC OF PROJECT / SEMINAR	INSTITUTE	DURATION
14	Madhuresh Sumit	Summer School in Biophysics	Harishchandra Reasearch Institute, Allahabad	Summer '08
		Fluorescence Study in Protein- DNA interaction	CDFD, Hyderabad	
		Synthesis & Spectroscopy of Gold and Silver	NIUS Camp, HBCSE –	
		Nanoparticles	TIFR, Mumbai	Apr,Oct,Dec '08
15	Ashutosh Priyadarshi	Peptide Synthesis	IISER, Pune	Summer '08
16	Shishir Chourey	Peptide Synthesis and Peptidomimetics	IISER, Pune	Summer '08
17	Vivek Anand	Financial Mathematics, IAS Summer Research Fellowship	Department of Mathematics, IISc,Bangalore	Summer '08
18	Mohammad Zuhair M M	DST SERC School in NLD	IISc,Bangalore	Summer '08
		International Conference on NLD		
		Winter project on Analytic Number Theory	NIAS, Bangalore	
		NCNSD	SINP, Kolkata	Mar2009
19	Shadab Alam	DST SERC School in NLD	IISc,Bangalore	Summer '08
		International Conference on NLD		
		Radio Astronomy Winter School	NCRA,Pune	Dec,'08
		NCNSD	SINP, Kolkata	Mar 2009
20	Akshaa Vatwani	DST SERC School in NLD	IISc,Bangalore	Summer '08
		International Conference on NLD		
		Project on Electronic Structure	NCL,Pune	May,'08
21	Darshan Joshi	Summer School on Astronomy/Astrophysics	IUCAA,Pune	Summer '08
		Radio Astronomy Winter School	NCRA,Pune	Dec,'08
		2- Day Workshop on "Frontiers in Astronomy"	Fergusson College, Pune	Feb,'09
22	Behlool Sabir	Summer School on Astronomy/Astrophysics	IUCAA,Pune	Summer '08
		2- Day Workshop on "Frontiers in Astronomy"	Fergusson College, Pune	Feb,'08
23	P. Vivekanada Reddy	Poster Presentation	AMI,New Delhi	Nov,'08
24	Ajinkya Deogade	Poster Presentation	AMI,New Delhi	Nov,'08
25	Mohit Ranghuwanshi	Modification to Newton's Rings Calculations using Plano - convex Lens	NIUS Camp, HBCSE – TIFR,Mumbai	Summer '08
26	Neelesh Soni	Workshop on Nanoscience & Technology	NCL,Pune	March,'08
		Paper Presentation at the Evolutionary Biology Workshop	Abhasaheb Garware College, Pune	Feb,'09
27	Surojit Sural	Cloning and Characterisation of a Novel Cardio-vascular Gene, SRFP	Vascular Biology Lab, JNCASR, Bangalore	Summer '08
28	Piyush Agrawal	Project on Molecular Modelling	Pune University	Summer,'08
29	Abhinaw Kumar	Project on Hartree-Fock Theory : Calculation & Interpretation for Small Molecules	NCL,Pune	Summer '08
30	Kunal Sinha	IAS SRFP 2008	CES,IISc,Bangalore	Summer '08

Sr.	NAME	TOPIC OF PROJECT / SEMINAR	INSTITUTE	DURATION
31	Abhijeet Awadhiya	Project on Neurobiology	IISER,Pune	Summer '08
		Project on Complex Analysis	University of Hyderabad	
		"On the fabrication of novel and robust technology for water purification using Cryogel Matrix"	IIT Kanpur	Dec,'08
32	Guhan Venkat	Attended NBHM Nurture Programme	IMSc,Chennai	Summer '08
33	Danveer Singh	"Optimize the size of the cushion material based on Compression Load Test"	DRDO Reasearch Laboratory, ADRDE, Agra	Summer '08
34	M Dinesh Kumar	Project on Aerosols : Its Characteristics and Effect on Climate	Andhra University, Andhra Pradesh	June & Dec,'08
35	Anuradha Bhukel	Project on Aerosol and its impact on the Earth's Radiation Forcing	Department of Earth and Atmospheric Sciences, NPL, Delhi	Summer '08
36	Srija Bhagavatula	Adaptive Mutations	CCMB, Hyderabad	Summer '08
37	Anup Savale	Mathematical Logic : Using Prolog as a language tool	IIT, Guwahati	Summer '08
38	J. Madhuri	Study of optical parameters of Gold nano rods and Bio- conjugated gold nano-particles	NCL,Pune	Summer,'08
39	Vivek Krishna	Cryptography : Provable Security	IIT Madras	Dec,'08
40	Kaustubh Deshpande	Winter Camp :NIUS Chemistry	HBCSE, Mumbai	Dec,'08
41	Tushar Sanjay Shrotriya	Radio Astronomy Winter School	NCRA,Pune	Dec,'08
42	Harshawardhan Ostwal	Winter Camp :NIUS Chemistry	HBCSE, Mumbai	Dec,'08
43	Siddharth Iyengar	Evolutionary Biology Worskshop	Abhasheb Garware College, Pune	Feb,'08
44	Roshni Bano	Evolutionary Biology Worskshop	Abhasheb Garware College, Pune	Feb,'08
45	Sachit	Evolutionary Biology Worskshop	Abhasheb Garware College, Pune	Feb,'08
46	Jagruti Pattadkal	Evolutionary Biology Worskshop	Abhasheb Garware College, Pune	Feb,'08
47	Swetha P Bhagwat	Workshop on "Trends in Astronomy"	Fergusson College, Pune	Feb,'08
48	P Sruthi	Workshop on "Trends in Astronomy"	Fergusson College, Pune	Feb,'08

An hour and a half with Shashi

"I genuinely felt happy. Happy for myself, my family members and my students", was his immediate response when we met him soon after the great news. (IISER's very own Prof. L. S. Shashidhara about receiving the CSIR Bhatnagar Prize 2008 in Biological Sciences). Later we sat with him for almost an hour and a half, and it was a pleasure to get to know him and his views. Here are the highlights -

S&S: *Do you believe that scientific research has to be directed towards a purpose, towards a visible application?*

LSS: No, not at all. According to me, the purpose of all scientific research should be to develop a deep understanding of nature. If one works towards getting a direct application of your research, then you will not understand the phenomenon properly, and then the technology you develop may be flawed, or used wrongly. Alexander Fleming himself wrote that the unscrupulous use of antibiotics may lead to the development of microbes that can resist them. So I strongly believe that research directed towards immediate application won't serve to answer questions properly.

S&S: *There are a number of interesting names of mutations in the fruit fly* Drosophila melanogaster, *which is a great source of entertainment for newcomers to the field. What is your favourite fruit fly mutant name?*

LSS: There are so many good ones. My favourite is Prospero. It is the name given to a gene which decides to form different types of cells in the nervous system. One can say that since it directs how the brain develops, something so important to the organism, it was given the name Prospero.

S&S: *You did a lot of work to make IISER what it is now, by supervising the setting up of the campus at Sai Trinity. How did this experience affect your outlook towards research and how an institute is run?*

LSS: Once you are part of building an organisation, at all levels, and discussing with the director and faculty on various policies, you start thinking of every small thing that you do in the larger perspective of how useful it is for the institute. That kind of understanding does not come by just doing your own work in one corner of the institute. Many times, small steps that we take may have a larger impact on everyone. That understanding comes from being involved in things like this.

S&S: *What would you say is your main motivation for doing your current job as a coordinator at IISER?*

LSS: Understanding nature in general, biology in particular, and specifically some aspects of how we evolve, how we develop. Right now, my interest is always to see that knowledge is available to all. For that to happen, one has to facilitate others to learn. In that process, others might learn much more than me, but I'm fine with that. If I have to do research myself, and my contribution to science is say 1.0 arbitrary units. If I cultivate the spirit of research in others and the net contribution goes up to 1.2 units, I would rather do the second one, ultimately we can get better science done. Someone needs to do the facilitating.

S&S: *You have a long experience with people in research and science. What, in your opinion is the most important qualities that must be possessed by a student, a teacher or a researcher?*

LSS: Actually it's very simple. They should get excited about everything, show a deep interest in everything. Students shouldn't have a bias that they have to do this or that in particular. Whatever it is, they should have real excitement to get quality work done, and to understand the intricacies whatever they see.

Teachers should be excited in their subject. If they are not excited they will become very stereotypic, very boring. When I'm teaching genetics or developmental biology, it is what I practise every day, so I'm always excited. Every day I learn something new, either in the lab or by talking to my peers and friends. So next year when I teach the same course, I will be improvising a lot based on what I have seen over the past year. We want our faculty to be excited about what they are teaching.

All human beings, irrespective of which profession they are in, must have the same qualities – integrity, deep interest, devotion, focus, concentration etc. You could be a labourer, a clerk in a bank, a philosopher or a scientist, the qualities wouldn't change much. But why am I interested in science, why not in literature or drama? There is really no explanation for why our brain works the way it does. Ideally everybody has to excel, that should be their aim, their goal. If that is to happen, these qualities are required. I don't think scientists are different from any other profession in this regard.

S&S: *Tea, coffee, or milk?*

LSS: Coffee – South Indian Filter Coffee.

S&S: *Do you believe that there is a higher mission, or purpose to your life?*

LSS: I don't. If you look at what your life means from a materialistic point of view, everything is meaningless. The origin of the universe, of life, what happens next, molecules colliding here and there, all of it tells you that your life is essentially meaningless. Although your brain is a derivation of this process, its emergent properties make us to think of a purpose for life. So that way, being a human being, I am inclined to have some kind of mission. Otherwise there is no motivation to do anything. So now repeat the question.

S&S: *Well, rephrasing the question - Being a human being, what are your motivations in life?*

LSS: My main motivation is that directly or indirectly, I should influence more people to think logically and scientifically, I believe a lot of conflicts and problems in society can be solved by people thinking and working rationally.

S&S: *What do you do to unwind on a weekend? Do you go to any specific place to relax?*

LSS: There are so many things that one wishes to do, but only a few of them end up happening. My wife and I regularly go for long walks near our house, and we greatly enjoy trekking up the Tekdi. Apart from that I relax by listening to music. More often, talking to my daughter and other family members is also very relaxing.

S&S: *How has your career and your life influenced your children's choices ?*

LSS: I have always encouraged my daughter to be independent. And she is very independent, not influenced by what I say and what I do. But I can still see bits of my influence in her. One definite influence I can point at is that she is definitely interested in science. While she has deep interest in drama and literature, and spends so much time reading novels and short stories, she is clear in her mind that she wants to do science.

S&S: *What kind of music do you like to listen to?*

LSS: Both Hindustani and Carnatic Classical Music. Since I grew up in Dharwad, I'm more inclined to Hindustani Music.

S&S: *What is your attitude towards mistakes?*

LSS: I'm actually OK with mistakes, because I think that unless you make mistakes, you won't learn enough. Whatever experiment you do, or decision you take, if by some chance it turns out to be right, then you won't know why it went alright, or how things work. However, if there was a mistake, then you start looking at what went wrong, and in the process you learn more. I get annoyed if people repeatedly make the same mistake. If it's a different mistake every time, I have no problem with it.

S&S: *A slightly offhand question; when did you last change your hairstyle?*

LSS: I never changed it. My mother, when I was 3 years old, started combing my hair like this, and I picked it up in the same style, and it has never changed.

S&S: *What sports do you follow, or play?*

LSS: Like all Indians, I follow a bit of cricket. I can't name all 11 players on the Indian team, but I know 2 or 3. I don't play any games. Last time I played cricket was some 20 years ago.

S&S: *What kind of books do you like to read?*

LSS: It's come down a lot in the last 5-6 years, but I generally like to read classics. My all time favourite for light reading is *Sherlock Holmes,* and in classics *Dostoevsky's Crime and Punishment.* In Kannada, my mother tongue, I most admire *Mankuthimmana kagga* - a collection of poems by D.V. Gundappa.

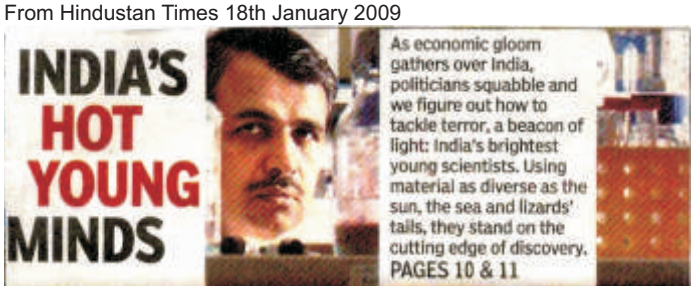
S&S: *One last question. If you were to meet a genie, and you were given one wish, what would you ask for?*

LSS: I really can't think of anything. I'm blank. I can't imagine a genie coming in front of me… I have everything that I want. The thing is if you have the ability and put in the right effort, you will obviously get whatever you want. Asking for more means that you are asking for something that you anyway don't deserve. People speak of leading a happy life and a comfortable life, and they say that this is generally difficult as a scientist. But now the salaries are so good, and I've also managed to earn money through my own work and research. So I'm quite happy with whatever I have.

S&S: *Thank you sir, it was great speaking to you. And congratulations again.*

- As told to Siddharth B.I. and Sachit
Inputs from Harshavardhan Ostwal

From Hindustan Times 18th January 2009



IISER Colloquia 2008-09

Once a week, IISER Pune gathers for colloquia - when a distinguished speaker talks on his/her field of research or interest. The talks are very interesting, and share a broader perspective of the world. Many attend the colloquia, and take part in the interactive sessions over tea and coffee.

The first colloquium (20 Aug 2008) of the new academic year was given by **Dr. Ashok Kolaskar**, former vice-chancellor of Pune University, on " New skill development: Animation/video gaming based product design". He showed how animation contributes to the pure sciences, arts, and entertainment. He stressed on the challenges of making a decent animation film; a huge amount of information, innovation, creativity and hard work goes into making a good 15 minute clip.

Colloquia do not just mean serious scientific talk. Many of us got the opportunity to learn something quite unique from **Dr. Amitabh Joshi** (JNCASR, Bangalore) who shared his passion about an icon of Urdu poetry - "Sheikh Mohammed Iqbal - His Life, Poetry and Thought" (27 Aug 2008). His recitation of the Urdu verses took the audience to a spiritual plane, and kept them mesmerised for the entire hour.

"Is there a final theory?" (3 Sep 2008), is a question asked by many including **Dr. G. Rajasekaran** (Chennai Mathematical Institute). He told of how new ideas have constantly replaced the old and how the approach to physics has changed over generations. He showed how the modern physics is based on simple fundamentals. He emphasized on the approach towards unification that has been followed for past few decades, and what the main challenges are today.

'The remains of stellar explosions recorded over the last millennium" (10 Sep 2008) represented a beautiful colloquium, presented by **Dr. David Green** (Cavendish Laboratory, Cambridge University, UK). At the onset, he showed us astronomical events recorded in ancient Chinese scriptures and medieval European records and correlated these records to the present day high-resolution observations of supernova remnants. The colloquium ended with informal interaction session with the students.

Dr. Kishore Marathe (Department of Mathematics, City University of New York), is quite well-known at IISER, Pune (17 Sep 2008). For his second colloquium, he spoke on "Plimpton 322- An excursion into the history of mathematics". Showing us scans of the Plimpton 322, a Babylonian clay tablet, he explained how they recorded Pythagorean triplets, reflecting their prowess and revealing the beauty in the mathematics of the ancients. He also showed how mathematical wisdom flowed around the ancient world, and in particular, the contribution from Indian scholars.

The next colloquium appealed to interdisciplinary scientists - "An invitation to biological physical chemistry" (24 Sep 2008), which was given by **Dr. K. L. Sebastian** (Department of Chemistry, IISc, Bangalore). Earlier in the day, he gave a beautiful lecture on the concepts of nano motors, molecular rollers,

rockers and other fascinating moving chemical structures with beautiful properties. Through scientific simulations on Mathematica he showed us how physical chemistry helps in understanding various biological processes at the molecular level like the coiling of a long strand of DNA into a small compact virus capsid.

The LHC has been the hot topic rife with speculations in the media (and for particle physicists, of course !). **Dr. Naba K. Mondal** (Senior Professor, Department of High Energy Physics, TIFR, Mumbai) (15 Oct 2008), explained about the idea behind the gigantic instrument, its operation (in detail, the design of the CMS detector), and the questions it tackles. and the large scale congregation of international scientists and engineers who came together to make it functional. Beyond giving essential experimental data, LHC will also give to the world data-transfer technology much superior to the World Wide Web (WWW), called the GRID.

Dr. Indira Parikh (Founder President, FLAME, Ahmedabad), spoke on "Young Generation's Heroes and Villains" (22 Oct 2008). Dr. Parikh needed no blackboard or slide-show to tell us what she wanted to as she was a great story-teller. She narrated how today's generation has mixed role models, often confusing heroes and villains. She peppered the audience with thought-provoking questions on the choices the youth take. Interest and Interaction: the two words that sum the 1 hour session. (And the photographer was too engrossed that he forgot to take a snap!)

Mr. Anirudh Chaoji (Director, PUGMARKS Ecologix), presented elegantly "Discover Nature, Discover Yourself" (5 Nov 2008). He told us that nature is an exciting place if one knows what to see and how exactly one should see it. People discover hidden courage and learn to understand themselves when in contact with nature. During all this, he dropped tidbits about various animals, and mimicked the voices of many of them and showed us amazing snaps of pristine nature that completed the ambience of the colloquium.

The next colloquium "Science for Profit-making and Social good", attracted many to the talk given by **Dr. Satyajit Rath** (National Institute of Immunology, New Delhi). "What defines Science?" (12 Nov 2008) he asked and in the process explained how different scientific disciplines think differently. His answer was that we do science because we are afraid about what may happen to us tomorrow and are curious about it. He went on to how and why patent laws are formed. In today's world, where patent laws have slowed down science, he introduced the idea of "Copyleft" and "Commons". He ended the talk by reciting a Sanskrit sloka from "Meghdoota".

The first colloquium of 2009 was given by **Dr. V. Balakrishnan** (IIT-Madras, Chennai) on "Can we hear the shape of a drum?" (7 Jan 2009). Explaining that if one knew the shape of a drum, then one can know its normal modes of vibration, he asked if by listening to the sound of a drum if we could predict a unique shape. He explained various attempts to solve the problem, and the development made in these attempts. So, the answer was: For a few cases: Yes, For a few cases : No and rest of the cases : Can't Say.

Dr. Ashoke Sen (HRI, Allahabad), gave the next colloquium on "Search for a unified theory" (12 Jan 2009). Even though the title was quite serious, the subject couldn't have been presented any better. Starting with how physics developed, he explained the concept that when physicists discovered a phenomenon which got them to resolve better into the atom, they started searching for the basic constituents of the atom itself. He then proceeded to open a window to the basic idea behind string theory and M-theory.

The next colloquium "Emerging concepts in drug discovery" (21 Jan 2009), was presented by **Dr. P Venkata Palle** (Senior Director, Advinus Therapeutics, Pune). He emphasized on how it was very essential for a drug to clear all the phases of its testing as well as show no harmful long term effects. He stressed on the point that it took a total of about 20 years for a drug to be released in the market, after all phases and patents are cleared.

In his talk 'Game Theory and Metabolic Syndrome' (28 Jan 2009), **Dr. Milind Watve** brought an evolutionary ecologist's perspective to the age old problem of diabetes. He suggested that diabetes and the metabolic syndrome should be viewed as a result of the huge changes in lifestyle over the course of human evolution. He finally said diabetes should not be fought with drugs but behavioural changes.

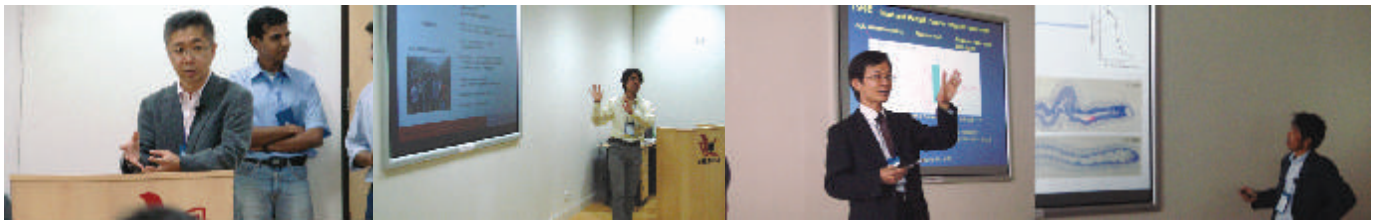
Dr. Ramana Athreya (NCRA, Pune), gave a rather interesting colloquium on "Exploring Biodiversity and its conservation in Arunachal Pradesh- India's wildest frontier" (4 Feb 2009). Talking about Eaglenest Wildlife Sanctuary in Arunachal Pradesh, he gave an idea about the state of the area and the people living there. He highlighted the conservation efforts that have been made by volunteers at Eaglenest, and how a little help could make a huge difference. He ended the talk by inviting interested students to come and work with him in Eaglenest.

Dr. Chandan Singh Dalawat (HRI, Allahabad) thrilled all the math buffs with his colloquium on "The theorem of the century: Serre's modularity conjecture and beyond" (11 Feb 2009). He started off illustrating Fermat's Last Theorem, and went on to highlight the efforts to solve it over the course of history. He very simply explained how Andrew Wiles and R. Taylor managed to complete the proof in 1995, and then left everyone with a problem for the new century to solve – Serre's Modularity Conjecture, which has just been solved recently by an Indian mathematician Chandrashekhar Khare.

Now it was the turn of music lovers to rejoice, **Dr. Tejaswini Niranjana** (Centre for the Study of Culture and Society, Bangalore) presented a Colloquium on "Jahaji Music: Culture and Politics from India to the Caribbean"(18 Feb 2009). She told the tale of her first trip to the Caribbean, as a social scientist trying to understand their music - Calypso, and see the influence of the immigrant Indian population on their hybrid culture and the hardships they face in seeking social acceptance. She even showed parts of a film on the Caribbean which clearly showed how important dance and music are for a society to express itself.

- Madhusudhan Raghunathan & Siddharth

Academic Events 2008-2009



Trends in Modern Biology

'Trends in Modern Biology' was the first international workshop hosted on the 24th and 25th of October by IISER Pune. It was a joint Indo-Japanese workshop covering the frontiers in biology. The workshop was organised jointly by IISER Pune and Sokendai (The Graduate University for Advanced Studies, Japan). It was aimed at giving the participants a front seat view of the cutting edge of research, across the vast field of the biological sciences.

A total of 19 speakers and 100 students attended the workshop – 8 delegates from Japan, 5 from IISER Pune, and 6 from various labs in India and gave a succinct presentation on their current research and cleared questions from the young audience. The compact schedule ensured that a healthy mixture of all aspects of science which made the two days extremely useful for the largely undergraduate audience.. Some of the topics covered were – Mapping Melancholy in Motherless Mice (Rats actually), Sexual Plasticity in Medaka, Sperm Differentiation in *Drosophila,* Mathematical modelling of the Cytoskeleton, Metapopulation Dynamics in Drosophila, Epigenetics and miRNA, mRNA as signals in plants.

The Japanese delegates greatly appreciated the politeness and hospitality they were being shown, and the audience too learnt a lot from the Japanese. Scientific and cultural exchange proceeded at a remarkable pace. All in all, it was an amazing learning experience to be part of such an event. We look forward to more such workshops in IISER

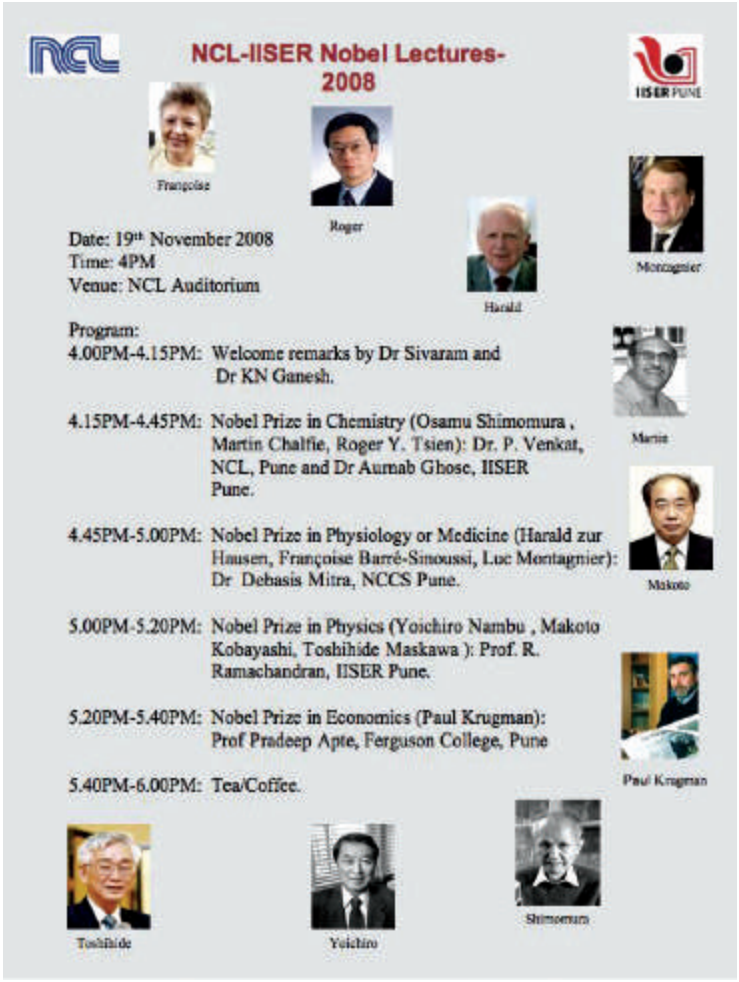
- Siddharth

The NCL-IISER Nobel Lectures

The time was October 2008 and the members of scientific community world over were eagerly awaiting the

announcement of the most coveted prize in science, The Nobel Prize. In and around our own IISER Campus, the excitement was palpable. Our institute faculty took care to keep us updated to the latest announcements by the Nobel foundation.

Finally, by mid-November, it was all over. What ensued in this one month were discussions and debates, among the students and the faculty alike, about the topics which had fetched the prize for the winners, the importance of their work and so on. Thus, it was a matter of great relief and happiness when we heard that a series of talks on the works of the Nobel Laureates had been organized jointly by IISER and NCL, Pune (We, being from the newest batch of IISER-P were not aware that that these were a regular feature every year). Of course, not to be forgotten was the great deal of confusion that followed when a lot of people actually thought that the Nobel Laureates themselves were coming to deliver lectures! It was enthusiastic bunch of students (sadly, consisting of mostly first years, the others busy working towards seeking their own) from IISER-P, who reached the NCL Auditorium at 4 pm on the 19th November, 2008 for the talks. The welcome remarks were given by the NCL director, Dr. Sivaram and the IISER director, Dr. K. N. Ganesh. It was particularly hilarious, when Dr. Ganesh, in the middle of his speech mentioned how in one of his talks in one of the previous Nobel Evenings, he put up a slide saying "How to Win a Nobel Prize". The next slide said, "I don't know." And the one after that said, "Even if I did, I wouldn't tell you."



The first serious talk was on the Chemistry Nobel, 'for the discovery and development of the Green Fluorescent Protein". We were 'educated' about the wonders of the GFP, by both a biologist, Dr. Aurnab Ghose (from IISER-P) and a chemist, Dr. P. Venkat (from NCL, Pune). Next in line was the 'Medicine and Physiology' Nobel, this year given jointly to two different teams for their discovery of the HPVs (human papilloma viruses) and the HIV. These discoveries have, undoubtedly, been invaluable in terms of their importance to human healthcare. It was very interesting, though, to hear about the details of the physiological mechanisms of infection by these pathogens from Dr. Debasis Mitra from NCCS, Pune.

Our own Prof. Ramachandran (affectionately referred to as 'RR') told us about the Physics Nobel, which incidentally went to one of his PhD thesis reviewers and two others. The works were on "the discovery of the mechanism of spontaneous broken symmetry in subatomic physics" and " the discovery of the origin of the broken symmetry which predicts the existence of at least three families of quarks in nature". The programme closed with a talk on the Economics Nobel, by Prof. Pradeep Apte from Fergusson College, Pune.

- Roshni Bano

Inter-IISER Chemistry Meet: Confluence of Chemists

The vision of our Director, Prof. K. N. Ganesh, to bring all five IISERs together on a single platform culminated in the form of first Inter-IISER Chemistry Meet. IISER Pune organized a two day meet on 22nd and 23rd of December 2008 with the main objective of bringing all faculty members in chemistry and allied disciplines together to establish professional contacts, exchange their scientific ideas and to share their teaching experiences. Thirty faculty members associated with chemistry research and teaching attended the meeting and presented their research work.

Prof. Sushanta Dattagupta, Director, IISER Kolkata, was the lone non-chemist and gave a black board lecture on thermodynamics.

The Inter-IISER Chemistry Meet also hosted a two hour meeting to discuss and share the teaching experiences, merits and demerits of current chemistry curricula and also how to improve current chemistry syllabi. Innovative ways of teaching chemistry to motivate young people to study chemistry and also increased and enhanced uses of modern technologies in teaching and research were also discussed.

A highlight of the two day Inter-IISER Chemistry meet was Prof. C. N. R. Rao's plenary talk on *"Novel Chemistry with Nanomaterials".*

The following faculty presented their research work at this first Inter IISER Chemistry Meet : Prof. K. N. Ganesh (IISER-P), Prof. Sathyamurthy (IISER-M), Dr. Aloke Das (IISER-P), Dr. Sanjib Bagchi (IISER-K), Dr. Subhajit Bandyopadhyay (IISER-K), Dr. Partha Hazra (IISER-P), Prof. E. D. Jemmis (IISER-T), Dr. Amlan K. Roy (IISER-K), Dr. Arun Venkatnathan (IISER-P), Dr. Ayan Datta (IISER-T), Dr. C. Malla Reddy (IISER-K), Dr. Balaram Mukhopadhyay (IISER-K), Dr. Ramakrishna G. Bhat (IISER-P), Dr. Sanjay Mandal (IISER-M), Dr. Hosahudya N. Gopi (IISER-P), Dr. Srivatsan S. G. (IISER-P), Dr. Bharathi Nuthakki (IISER-P), Dr. Sanjio S. Zade (IISER-K), Dr. M. Jayakannan (IISER-P), Dr. Raja Shunmugam (IISER-K), Dr. Debasish Haldar (IISER-K), Prof. Vinod K. Singh (IISER-B), Dr. Swadhin K. Mandal (IISER-K), Dr. V. G. Anand (IISER-P), Dr. Sanjay Singh (IISER-M), Prof. Ramesh Kapoor (IISER-M), Prof. Sushanta Dattagupta (IISER-K), Dr. K. George Thomas (IISER-T). It is expected that such inter IISER meet in other disciplines such as biology, mathematics and physics will also be conducted as and when possible.

- H N Gopi

11th Chemical Research Society of India National Symposium in Chemistry

The 11th CRSI National Symposium in Chemistry was organized jointly by NCL, Pune, IISER, Pune and University of Pune from 6th to 8th February 2009 on the theme 'Functional Materials'. Scientists from laboratories and institutes in India gave lectures, while more than 200 posters were presented by participants.

The opening ceremony was chaired by Dr. S Sivaram. Presidential address was delivered by Prof. V. Krishnan (Chemical Biology Group, JNCASR) on *Nitroporphyrins* and photo excited electron transfer reactions. Prof. C. N. R. Rao gave an intoxicating keynote lecture on '*Graphene: The New Nanocarbon'* and synthesis of single and bilayers of graphene sheets.

Dr. A. K. Shukla from CEERI, Karakudi talked on fuel celss which merges the combustion engine and the battery. Prof. Henry Schaefer from University of Georgia talked about Gallium nitride oligomers and nanorods used for hydrogen storage towards renewable energy sources. Topics in other medal lectures: peptidomimetic synthesis,

photoresponsive soft matter, molecular designing, hydrogen storage, biology and chemistry of cholesterol, molecular optical materials, functional nanoparticle crystals, modelling through density functional theory, computer simulations of ionic liquids, functional carbon nanostructures, nano-materials for solar energy and optoelectronics and optical properties of core-shell quantum dots. People also discussed about how to popularise chemistry among common people. IISER Pune took part in the symposium quite enthusiastically. All the chemistry research scholars and 3rd year Masters students attended the symposium. Dr. R. G. Bhat, Dr. Aloke Das and Dr. M. Jayakannan from our institute worked actively as the member of the local organising committee.

- Madhuresh Sumit

Science Day

Fresh from a colloquium on 'Viewing Raman through his effects' by Prof N. Kumar, RRI, Bangalore, the students of the

Science Club organized a gala of scientific activities. Starting with a short video of Raman's life and science at absolute zero, students found a surplus of activities to be done, with further screenings at almost zero attendance. The second wing of IISER took flight with a bustling book fair with about 8000 tomes showcased by local vendors. Almost everyone ended up choosing a book to add to the library stock. Posters were launched into deep space and chromed to a greener science as students probed the current scenarios in science of prime interest to the nation. The labs periodically glowed with chaotic spirits and hoisted the spectrum of science giving it a platonic symmetry. As the afternoon matured, students were given to interacting with real world scientists tackling challenging problems. Dr. Vidya Gupta, NCL spoke about revolutions in biotechnology towards eradicating food scarcity and enriching nutritive foods. Dr. Srianand Raghunathan, IUCAA, discussed cosmological time-scales and telescoped on how he went, back in time. Dr. Sourav

Pal, NCL, travelled with frequent flyer miles around the integrating world of science as a physical chemist and hinted at everything a scientist needs. Dr. Sukumar Devotta, Ex-Director NEERI refined the ugly environmental hazards and pollution bottlenecks that needed plumbing. Prof. Ravi Kulkarni, spaced out time and geometry with Bertrand's Paradox and calibrated ambiguous probabilities with the right measure.

Darwin Day

Human beings gathered together, gave speeches, recollected history, listened intently, noted tidbits, nodded pensively, sat patiently and waited for delicious cupcakes and tea. The topic: How this edifice of civilization came about? They tried to trace their origins and credited their modern ancestor who took the first steps on Darwin Day (Feb 12, 2009). Prof Amitabh Joshi, JNCASR, Bangalore pointed out anisogamy as the keystone of evolution as we know it. Prof K. N. Ganesh took us through Darwin's abode and his adventures abroad, Prof L. S. Shashidhara left a lasting impression on why man should not be the last species around. Sisir approximated the evolution of an ultimate theory, Ajay hovered about how Darwin changed the game of life, Surojit pointed how Darwin eventually reached at evolution.

- Sisir

Workshop on Algebraic Groups

IISER Pune organised a meeting on the "Classification of Algebraic Groups" from 9 March to 12 March 2009. Apart from some introductory lectures by experts on the subject of Algebraic Groups, the discussion was primarily focused on the "Classification Problem over arbitrary Field". It is a programme guided by the fundamental paper of Borel and Tits (both masters of the subject) which outlines the classification. This problem is still not completely solved and there is a lot to be understood. Algebraic groups and Lie groups are very fundamental to the foundation of sciences notably in Physics apart from being a celebrated topic in Mathematics.

The leading mathematicians of the country, who are active researchers in the subject, participated in this meeting. In view of India hosting next ICM in 2010 this meeting will go a long way to prepare people to actively participate in ICM and make full use of the opportunity that all leading mathematicians of the world will be present there.

- Anupam Kumar Singh

Seminars at IISER during 2008-09

Name & Affiliation	Title of the seminar	Date
Subhendu Rakshit, Univ. of Dortmund, Germany	Ice fishing for neutrinos	29 Feb, 2008
Prasad Purohit, SUNY, Buffalo	A Random walk through moving domains of gating mechanism in a ligand-gated ion channel	29 Feb, 2008
Umesh Kadhane, Dept. of Physics & Astronomy, Univ. of Aarhus, Denmark	Photo-absorption and mass spectroscopy of stored ions	Mar 7, 2008
Ronald D. Vale, Univ. of California, San Francisco	Molecular Motors and Cytoskeleton Dynamics	Mar 12, 2008
Rama Mishra, IISER Pune	Polynomial Knots	Mar 19, 2008
Govindan Rangarajan, IISc	Chaos, Synchronization and Extinction of Species	Mar 26, 2008
Upendra Kulkarni, CMI	Primes and Codes	Apr 9, 2008
Arun Venkatnathan, Directorate Pacific Northwest National Laboratory Richland, Washington, USA	A Computer Simulation of Polymer Electrolytes, Membrane Nanostructure & Molecular Transport in Fuel Cells	Apr 2, 2008
Mohan Agashe, Former Director Film and Televison Institute, Pune	What we really need in life: Art or Science	Apr 10, 2008
Sitabhra Sinha, IMSc, Chennai	Physics goes to the movies	Apr 17, 2008
Jaya N Iyer, IMSc, Chennai	Vector bundles in Algebraic Geometry	Apr 23, 2008
Ramanathan Vaidhyanathan, Dept. of Chemistry, Univ. of Calgary	Proton conducting metal organic frameworks	Apr 24, 2008
Sudhir Husale, Rowland Institute at Harvard, Harvard Univ.	Biological applications of single molecule techniques: optical tweezers and AFM	May 5, 2008
Pranay Goel, US National Institutes of Health (NIDDK)	Modern developments in understanding glucose sensing in pancreatic islets	May 16, 2008
Parahallad Pradhan, MINT, Univ. of Alabama Tuscallosa, USA	Basic Devices in spin electronics	May 20, 2008
Punit Parmananda, Facultad de Ciencias, UAEM, Morelos, Mexico	Chaotic Synchronization in Chemistry	June 4, 2008
Aditi R Simha, Polymers and Complex Fluids Group, School of Physics and Astronomy, Univ. of Leeds United Kingdom.	Statistical Mechanics for a class of boundary-driven steady states	July 2, 2008
Sanjay Swain, Post doc, SLAC, Stanford, CA	Matter antimatter Asymmetry, CP violation and beyond	July 24, 2008
Sumathi Rao , Professor of Physics, HRI	Novel phenomena in mesoscopic physics	July 28, 2008
M. Teresa Cuberes, Laboratory of NanoTech., Univ. of Castilla-La Mancha,	Nanoscale Mapping Of Mechanical Properties Using Ultrasonic Force Microscopies	Aug 19, 2008

Stephane Noselli , Director, Institute of Developmental Biology and Cancer, Nice, France.	How to break Left-right symmetry in animals?	Aug 19, 2008
Santanu Dey, Institut fur Mathematikund Informatik, Ernst-Moritz-Arndt Univ. Greifswald, Germany	Characteristic Functions of Liftings	Aug 21, 2008
Manoj K. Mishra, Dept. of Chemistry, Indian Institute of Tech. Bombay	Vibrational excitation resulting from electron capture in LUMO of N_2, H_2 and CO molecules – a treatment using the Time Dependent Wave Packet approach	Aug 25, 2008
Debjani Bagchi, ESPCI, Paris	Fluctuations in equilibrium and out of equilibrium systems	Aug 25, 2008
Arjun Guha, Univ. of California, San Francisco	One surprise after another: Studies on the development and function of the Drosophila air sacs	Aug 27, 2008
Ashis Biswas, Dept. of Pathobiology, Cleveland Clinic Foundation, Cleveland, OH, USA	The Other Side of Maillard Reaction	Aug 28, 2008
Harsh Chaturvedi, Dept of Physics and Optical Sc. Univ. of North Carolina at Charlotte	Molecular interactions: Single Walled Carbon Nanotubes and Ruthenium Metallodendrimers	Aug 29, 2008
Ajit Joglekar, Brookhaven National Laboratory, Upton, NY	High-Throughput Structure Determination and Characterization of New Protein Families	Sep 8, 2008
Saikrishnan Kayarat, Clare Hall Laboratories, Cancer Research, UK	Towards Understanding the Mechanism of the Molecular Machine RecBCD	Sep 9, 2008
K.L. Sebastian, Amrut Mody Chair, Divison of Chemical Sciences, Indian Institute of Science	Molecular Rollers, Wheels and Rattle - using fluxionality	Sep 24, 2008
Sarika Jalan, Max Planck Institute for the physics of Complex Systems, Dresden, Germany.	Coherence at different levels: Synchronization, Symbolic synchronization and all that!	Oct 3, 2008
Juan Botas of Baylor College of Medicine, Texas, USA	Drosophila models of human neurodegenerative diseases	Oct 6 , 2008
Lourderaj, Texas Tech Univ., USA	Chemical simulation of reactions - theoretical studies	Oct 14, 2008
Harinath Chakrapani, NCI, USA	Nitric oxide releasing drugs - Cancer treatment	Oct 14, 2008
Sreeraj Srivatsan, Univ. San Diego, CA, USA	Fluorescent probes - synthesis and biological applications	Oct 14, 2008
Partha P Datta, Wadsworth Center, Albany, New York, USA	Exploring Macromolecular Structural Dynamics through Cryo-Electron Microscopy: The Ribosome as an Example	Nov 3, 2008
Eka Sambandan, Phosphor Scientist, Authentix Inc., USA	Hydrogen Cell: The Role of Chemists	Nov 4, 2008
Sanjay Sane, Insect Flight Lab, National Center for Biological Sciences, Bangalore	Aerodynamics and sensory control of insect flight	Nov 10, 2008
Jayendra N. Bandyopadhyay, Dept. of Physics, NUS	Quantum Signatures of Chaos: Entanglement and 1/f noise	Nov 14, 2008

Ranjith Padinhateeri, Curie Institute, Paris, France	Dynamics of nucleosome assembly and disassembly	Nov 17, 2008
Prashant Gade, Centre for Modelling and Simulations, Univ. of Pune	Persistence in spatially extended dynamical systems	Nov 21, 2008
Prof. Shiny Varghese , Univ. of California, San Diego	Regenerative medicine- Stem cell biology meets materials science and Engg.	Nov 25, 2008
Pinaki Sengupta, Los Alamos National Laboratory, Los Alamos, NM	Bose Einstein condensation of magnons in quantum magnets	Dec 8, 2008
Abdur Rahman, MGCB, Univ. of Chicago	Novel Role of A Dynamin-Related Protein in the Nuclear remodeling of Tetrahymena	Dec 10, 2008
Parthasarathy Sampathkumar, Eli Lilly and Co., San Diego, CA, USA	Tale of two drug targets: Mycobacterium tuberculosis and Trypanosoma brucei Peroxin 5 (PEX5)	Dec 12, 2008
Vishwanath R. Lingappa, M.D., Ph.D. Professor Emeritus, UCSF & Chief Tech. Officer and Co-CEO Prosetta Bioconformatics, Inc. San Francisco, CA	Host Catalyzed Capsid Assembly: From Novel Paradigm to a New Generation of Anti-Viral Drugs	Dec 15, 2008
Basant K Patel, PhD, Dept. of Biological Sciences, Univ. of Illinois Chicago	Prions: the “protein-only” infectious agents and conduits of protein conformation-based genetic inheritance	Dec 15, 2008
Archana Pai, Max Planck Institute fur Gravitationsphysik, Albert Einstein Institute D-14476 Potsdam, Germany	Fishing gravitational wave chirps with a multi-detector network	Dec 18, 2008
Prakash R. Somani, Dept. of Quantum Engg., Nagoya Univ., Nagoya 464 – 8603, Japan. & Dept. of Electronics and Information Engg., Chubu Univ., Aichi-Ken, 487-0025, Japan.	Carbon NanoTech. for Future Electronics…Aiming towards Carbon Valley	Dec 18, 2008
Partha Prathim Mandal, MIT	Super Resolution, Photobleachingless Imaging and Advanced Image Reconstruction Techniques in Biophysics and Bioimaging	Dec 18, 2008
S Shankaranarayanan, Institute of Cosmology and Gravitation, Univ. of Portsmouth, Mercantile House, Hampshire Terrace, Portsmouth, PO1 2EG, UK	Spinor driven inflation	Dec 19, 2008
Shantha Bhushan, (formerly) IIT Bombay	Knot theory in understanding proteins	Dec 22, 2008
Shriram S Abhayankar, Dept. of Mathematics, Purdue Univ.	Glimpses of Algebraic Geometry	Jan 2, 2009
Saurav Banerjee	Regulation of synaptic plasticity by a brain specific microRNA"	Jan 7, 2009
Mahesh Nerurkar, Rutgers Univ.	Thinking Dynamically	Jan 8, 2009
Amita Sehgal, Howard Hughes Medical Institute, Dept of Neuroscience, School of Medicine, Univ. of Pennsylvania	Genes that drive sleep-wake cycles	Jan 8, 2009
N. G. Deshpandek Dept. of Physics Univ. of Oregon, Singapore	Physics at the LHC	Jan 9, 2009
Chaitanya Athalek, EMBL, Heidelberg	Modeling and Experimental Testing of Sub and Multi-Cellular Pattern Formation	Jan 12, 2009

Megha Budruk, School of Community Resources & Development, Arizona State Univ.	Natural Resource Management: A Social and ecological perspective	Jan 12, 2009
Soumen Basak, Signaling Systems Laboratory, Univ. of California, San Diego	Crosstalk between Inflammatory and Developmental Signaling via the NF-kappaB System"	Jan 13, 2009
Farhat A. Habib, The Ohio State Univ., Columbus, OH	Large scale genotype-phenotype correlation using phylogenetic trees	Jan 23, 2009
Aparna Baskaran, Physics Dept., Syracuse Univ., Syracuse NY	Self-propelled particles: From Microdynamics to Hydrodynamics	Jan 28, 2009
Joby Joseph (Faculty candidate, Biology) from NIH, USA	Spontaneous activity in the antennal lobe, cause and effects	Jan 29, 2009
C. V. Dharmadhikari, Centre for Advanced Studies In Materials Science And Solid State Physics, Univ. of Pune	Scanning probe microscopy of complex materials	Jan 30, 2009
Monideepa Roy, Brigham and Women's Hospital, Harvard Medical School, USA	Regulation of Notch signaling in T-cell mediated acute lymphoblastic leukemia (T-ALL).	Feb 5, 2009
Nandkumar K. Khaire, Laboratory of Cancer Biology, Univ. of Oxford	Regulation of Retinoblastoma protein activity by lysine methylation	Feb 6, 2009
Alejandro Lara, Instituto de Geofisica UNAM, Mexico	Dynamics of coronal mass ejections	Feb 6, 2009
Amit Singh, UAB Dept. of Microbiology, Birmingham	Mycobacterium tuberculosis redox sensing mechanisms: Linking environmental cues and virulence pathways	Feb 10, 2009
Prasenjit Mal, Dept. of Chemistry, Univ. of Cambridge, UK	Subcomponent Self-assembly Approach: An Iron Cage in Water	Feb 12, 2009
Arindam Kundagram, Dept. of Polymer Science and Engg., Univ. of Massachusetts, Amherst, USA	Physics of charged polymers as soft materials: how are they different from simple salts	Feb 13, 2009
Rajesh Mishra, Dortmund Univ. of Tech., Germany	Amyloid Proteins and Diseases	Feb 14, 2009
Prabhat Sahu, Universitat Wurzburg, Institut fur Organische Chemie, Wurzburg	QM/MM investigation for the SARS COV Main Protease	Feb 14, 2009
Suhas Pandit, ISI / IISc Bangalore	Algebraic and geometric intersection numbers in free groups	Feb 16, 2009
Rishikesh Vaidya, BITS - Pilani	Issues in particle physics phenomenology	Feb 19, 2009
Nilotpal Ghosh, IGCAR, Kalpakom	Andreev Reflection in Nano Junctions And Physical Property Measurements of Single Crystals	Feb 20, 2009
Pavan Kumar, Rockefeller Univ.	Structural and functional characterization of small RNAs	Feb 23, 2009

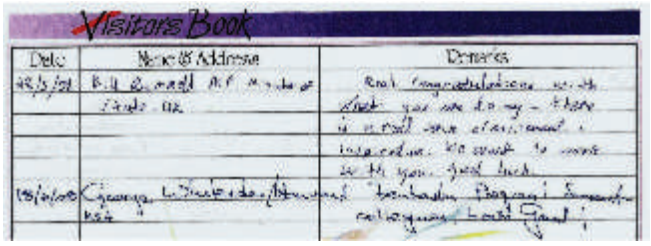
International Relationships and Visitors

A delegation from UK, headed by Bill Rammell MP, Minister of State for Lifelong Learning, Further and Higher Education along with a team of UK Educationalists, visited IISER on 28 May 2008. Prof Caroline Gipps, Vice-Chancellor, University of Wolverhampton, Ms Karen Price OBE CEO, e-skills UK, Pro Mary A Ritter MA, DPhil, FRCPath, FCGI, FRSA, Pro-Rector for Postgraduate and International Affairs, Imperial College London, and Ms Win Harris, Director, Joint International Unit were the dignitaries in the delegation.

George Whitesides from Harvard University, USA visited us in June 2008 and interacted with students and faculty on topics ranging from importance of research topics to secrets of becoming a successful scientist.

This was followed by the visit of British deputy High Commissioner in Oct 2008 which resulted in an understanding for selected Institutions in UK to work in partnership with IISER, Pune.

In February, a delegation of German Rectors led by Margaret Wintermantel visited to discuss about curricula and studies at IISER and possible collaborations in future.



Visit of the Korean Chemists delegation (KOSEF) on Jan 12, 2009 :

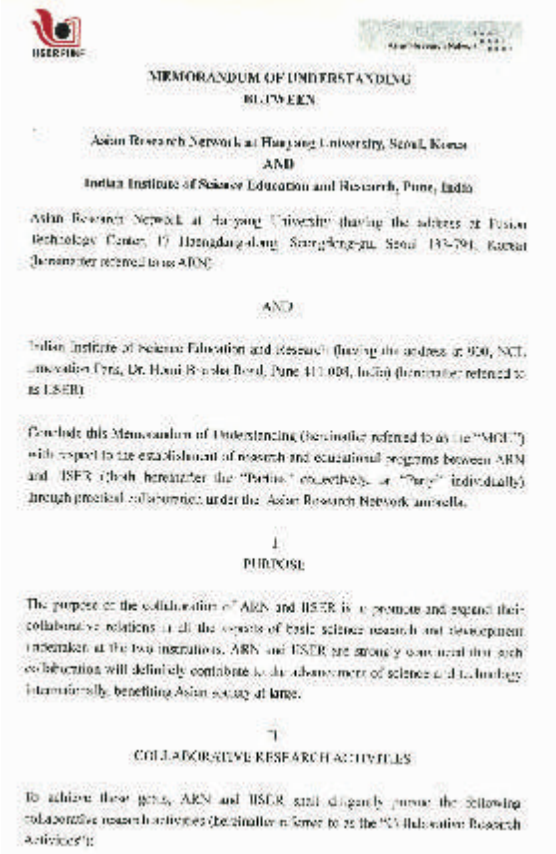
A team of Physicists from Göttingen visited IISER on 27 Feb 2009. **Prof. Dr.Philipp Gegenwart** , **Prof. Dr.Hans Christian Hofsäss**, and **Prof. Dr. Rainer G. Ulbrich** from Physikalisches Institut , Göttingen ,**Prof. Dr. Reiner Kree**, **Prof. Dr.Thomas Pruschke** and **Prof. Dr. Kurt Schönhammer** ,Institut für Theoretische Physik , Göttingen were in the team. They were accompanied by Dr. Ramesh AHUJA, Director Indian Affairs and Göttingen-India Liaison Office, Göttingen

This year, IISER Pune has signed a Memorandum of Understanding with Asian Research network (ARN) which will provide opportunities to students and faculty to access research facilities set by ARN at Hanyang University, Seoul.

We also signed Memorandum of Understanding with International centre for Material Nanoarchitectonics (MANA), National institute for material Science (NIMS), Tsukuba, Japan. This will lead to exchange of researchers and joint research programs.

With Mr. Ulrich Podewils, Director, DAAD , New Delhi

MoU between ARN and IISER, Pune



MEMORANDUM OF UNDERSTANDING
BETWEEN

Asian Research Network at Hanyang University, Seoul, Korea
AND
Indian Institute of Science Education and Research, Pune, India

Asian Research Network at Hanyang University (having the address at Fusion Technology Center, 17 Haengdang-dong, Seongdong-gu, Seoul 133-791, Korea) (hereinafter referred to as ARN)

AND

Indian Institute of Science Education and Research (having the address at 900, NCL Innovation Park, Dr. Homi Bhabha Road, Pune 411 008, India) (hereinafter referred to as IISER)

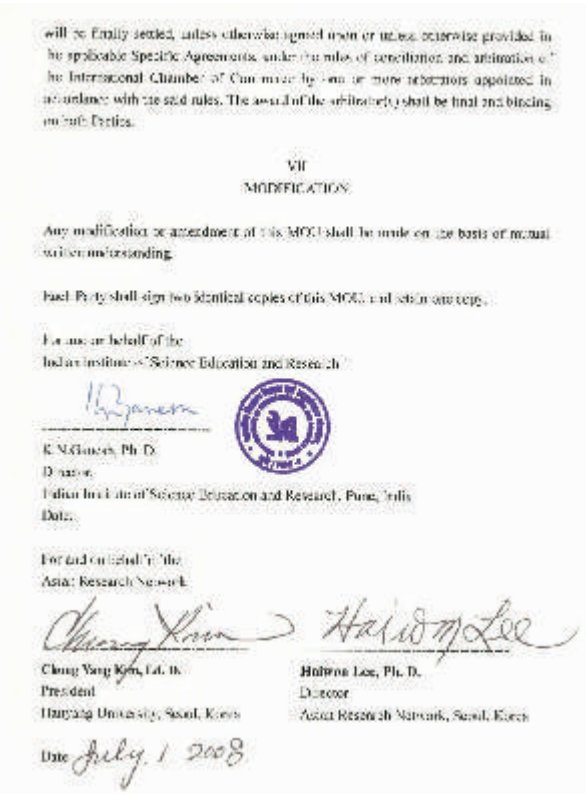
Conclude this Memorandum of Understanding (hereinafter referred to as the "MOU") with respect to the establishment of research and educational programs between ARN and IISER (both hereinafter the "Parties" collectively, or "Party" individually) through practical collaborations under the Asian Research Network umbrella.

1
PURPOSE

The purpose of the collaboration of ARN and IISER is to promote and expand their collaborative relations in all the aspects of basic science research and development undertaken at the two institutions. ARN and IISER are strongly convinced that such collaboration will definitely contribute to the advancement of science and technology internationally, benefiting Asian society at large.

2
COLLABORATIVE RESEARCH ACTIVITIES

To achieve these goals, ARN and IISER shall diligently pursue the following collaborative research activities (hereinafter to refer to as the "Collaborative Research Activities"):



will be finally settled, unless otherwise agreed upon or unless otherwise provided in the applicable Specific Agreements, under the rules of conciliation and arbitration of the International Chamber of Commerce by one or more arbitrators appointed in accordance with the said rules. The award of the arbitrator(s) shall be final and binding on both Parties.

VII
MODIFICATION

Any modification or amendment of this MOU shall be made on the basis of mutual written understanding.

Each Party shall sign two identical copies of this MOU and retain one copy.

For and on behalf of the
Indian Institute of Science Education and Research

K.N.Ganesh, Ph.D.
Director
Indian Institute of Science Education and Research, Pune, India
Date:

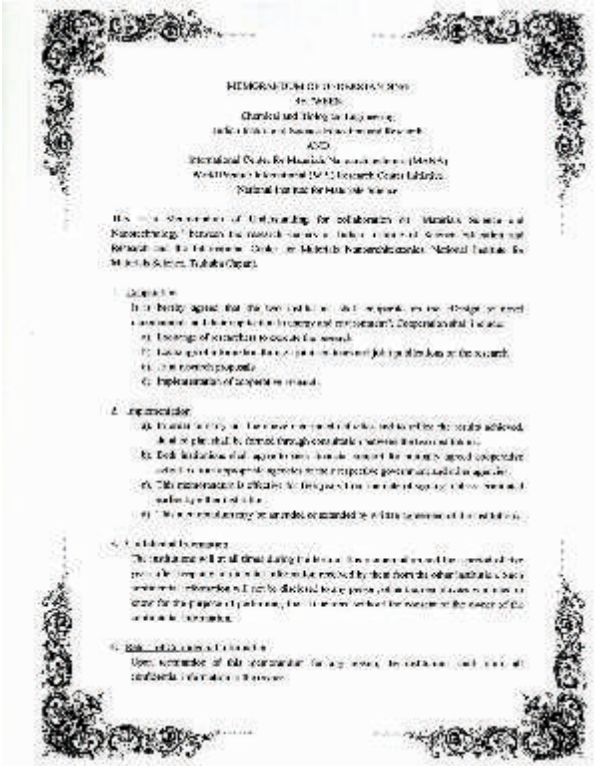
For and on behalf of the
Asian Research Network

Chung Yang Kim, Ed. D.
President
Hanyang University, Seoul, Korea

Haiwon Lee, Ph. D.
Director
Asian Research Network, Seoul, Korea

Date July. 1 2008

MoU between NIMS, Japan and IISER, Pune



Glimpses of 2008-09

Prof C. N. R. Rao honoured by all IISERs on his 75th birthday

Prof Ganesh at the Academy for Developing World (TWAS) Annual Meeting, Mexico

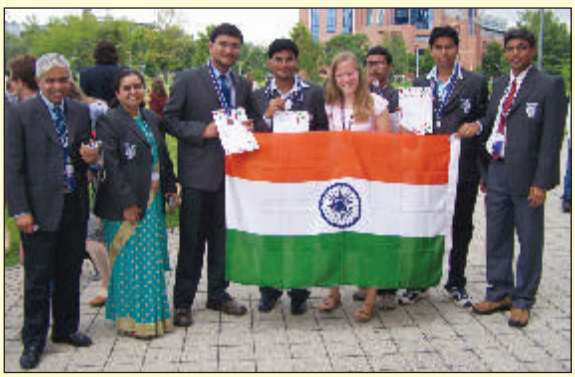
To the right: In front of the largest step pyramid in the world, Mexico

Our faculty at the workshop '150 years since Darwin' at Sophia College, Mumbai

Dr. Ambika attending 'Noise in Physical Systems' exhibition during the conference 'Stochastic Resonance 2008' Perugia, Italy

Field Trip to Giant Metrewave Radio Telescope, NCRA, Narayangaon

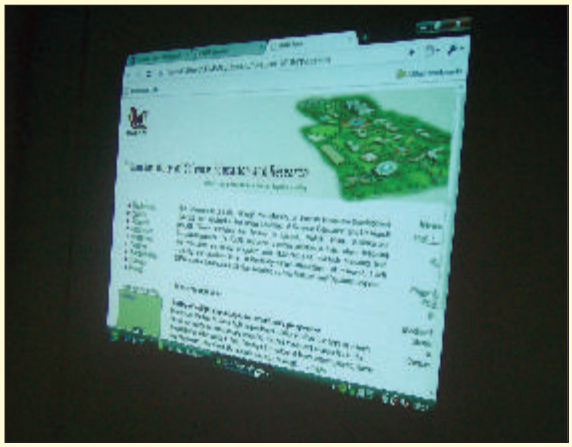
Independence Day Celebrations



Dr. A. A. Natu, along with Dr. D. K. Maity from Bhabha Atomic Research Centre, Mumbai and Mrs. Swapna Narvekar from Homi Bhabha Centre, led the Indian contingent to the 40th International Chemistry Olympiad held in Budapest, Hungary between 12th and 22nd July, 2008.

Absorbing Hours
in Raman Hall

Above : Trends in Modern Biology
Left : Inter IISER Chemistry Meet



Our redesigned website and Intranet
launched on Republic Day

Science or arts - we are ready to contest…

Sleepless Nights - Pre-Karavaan

Marching On To Karavaan

Relaxing On The Lawns - Post-Karavaan

Onam celebrations in Ajala Guest House

Saraswati PUJA in HR1 (on Jan 31st)

Sorting and Solving - Bills, Invoices… ?

Who Beats Whom…? -
Evening Cricket In The Cafeteria

IYA Activities At IISER

-Darshan Joshi

If I ask you, "How far can you see through your naked eyes?" I am sure you are wise enough to answer that we can see up to infinity; Rather, we can see an object situated at any distance, provided the photons (light particles) emerging (produced or reflected) from it are received (and resolved) by our eyes (visible spectrum). Well, then if that is the case, why do astronomers use a 'telescope'‡ to view distant stars, clusters, or galaxies etc.? The reason is simple: through a telescope you can see a magnified view of very distant objects i.e. distant objects appear to be closer. This facilitates the astronomers to study the finer details of the objects. Due to this amazing property, telescope has become an inseparable part of astronomy since its invention by a Dutch optician 'Hans Lippershey'.

I guess many of you are stunned by the above statement! What about Galileo ?? I am sure, somewhere in the corner of your mind, Galileo Galilei is knocking persistently. But I did not mention him as the inventor of telescope! However, this does not diminish Galileo's importance, since his real genius lies in the fact that he was the first to use the telescope for astronomical observations! From then on, the curtain of the cosmic theater unraveled slowly, and we could see many cosmic characters, their expressions and we started understanding their roles.

Now, in the 21st century, when there is an emerging international race to build bigger and better telescopes, it's indeed the time to peep 400 years into the past, at a time when the first telescopic sky observation was made by Galileo (in 1609, to be precise). This was the time when he first observed the craters on the moon, the beautiful phases of Venus, the spectacular rings of Saturn, discovered the four moons of Jupiter, and the sun spots and so on. Today, after 400 years, in order to celebrate and honor the revolutionary idea due to Galileo, the UN has declared the year 2009 as the 'International Year of Astronomy' (IYA). IYA is a joint initiative of 'International Astronomical Union (IAU)' and 'UNESCO' to globally spread awareness about astronomy and induce a feeling of wonder and curiosity in people, by giving them opportunities to make telescopic observations. To achieve the objectives of IYA, 'national nodes' in various countries are organizing several activities throughout the year. In India, IUCAA (Inter University Centre for Astronomy and Astrophysics, Pune) is the national node for IYA-2009.

Being a science institute, IISER has also taken an initiative to celebrate IYA through joint efforts of Dr. G. Ambika and its Science Club. The main aim of the initiative is to provide an opportunity of sky observation through telescopes to as many people as possible. In this vein, IISER is purchasing a 6-inch Newtonian telescope with Dobsonian mount.

To start with, a sky observation session for IISER students is planned. Later in the year, many public sky observation programs have been planned especially during some important astronomical events. This year nature has rewarded us with many spectacular events like the visit of comet Lulin (which was closest to earth on 24th February), the total solar eclipse (22nd July), Venus appearing as an evening as well as a morning star and a lot more. Special efforts are being made to organize a camp for total solar eclipse observation from the totality belt. Students shall visit 'Lonar crater' which is world's oldest impact crater. It has an average diameter of about 1.8 km and a depth of about 150 m. It is a spectacular site to be visited and a treasure for astrophysical, geological and geophysical studies.

To provide an opportunity to IISER students to make astronomical observations at different wavelengths, Science Club volunteers are planning to setup a dipole antenna for Jupiter observation at 20MHz frequency. Also, to create an awareness about astronomy among other students and to bring together interested students, an inter college Astronomy meet has been planned during the latter half of this year. There is a great enthusiasm among the students to participate and volunteer for many of the activities organized by IUCAA, the national node for IYA. During this year long festivities we hope we succeed in spreading the joy of astronomy and help people find their place in the Universe, albeit using a torch light given by Galileo.

‡ Here and throughout the write up, by telescope I mean only the optical telescope. We will not discuss about telescopes at other wavelengths here.

The activities of IYA at IISER was inaugurated by an inspiring talk by Prof. T. Padmanabhan, (Distinguished Scientist and Dean, Core Academic program, IUCAA, Pune) on 20th February. Students later caught up with Prof Thanu Padmanabhan and asked him to share his edge on his spirit towards astronomy, physics and life in general.

How/when did you realise you would be/could be a cosmologist?

That's funny, I've always thought of myself as a physicist, not as a cosmologist! I am interested in every area of physics and have worked on a few of them. My PhD was on Quantum gravity. Currently I'm interested in black hole entropy and some aspects of condensed matter theory. I first came in touch with cosmology at TIFR while my wife was working on dark matter physics. Cosmology is probably just a passing but exciting phase and also the 'in' thing to do.

When did you start stargazing? What are the three most fascinating things out there?

At school, I was fond of astronomy and used to identify all constellations. Now I don't find the time. This year being the international year of astronomy, I've made a telescope and hope to pursue it. In good skies unlike Pune and Mumbai, I like spotting the Milky Way, Orion with Sirius and Andromeda.

When will we reach a cosmological dead end ?

Big Bang exists in the theory only because we don't have the right theory. If you sit at the surface of a collapsing star and decide to commit suicide, you should be able to predict what should happen to you beforehand using the laws of physics. Einstein's theory doesn't allow you to do that. The theory fails. It'll kindle progress as long as there is a problem. Black hole singularity and big bang singularity are two major open problems. Even in "well-established" areas, there are deep and open questions: the very successful standard model of particle physics still doesn't explain why a muon is heavier than an electron. If you think properly, at any point of time, and every moment you'll have interesting questions to ask and answer.

In the 'history of ideas' what stands out ? Will science ever reach the perfection sought in theology ?

The perfection one sees in theology is that of a dead plant. Science is vibrant and is like a growing plant and it'll shed its leaves and you cannot cry over the leaves it has shed because new leaves will come up and it's a process of growth. I find the creative/artistic expression of human thought (from cave painting to gauge theory) very amusing, and it is not clear to me why dogs don't do that, while humans do. I don't believe human progress can be measured in simplistic terms.

The qualities in an ideal scientist you cherish ?

It depends on what level of scientist you are talking about. A senior scientist is expected to be concerned about issues like science policy, scientific ethics, and moral responsibility towards the society and possibly about leaving a legacy. But you don't expect a student who just finished PhD to contribute to policy making in science.

Pre-PhD students should have a very strong motivation and fascination for what they are doing. If you like rock music, don't try to do physics. There will always be a hidden peer pressure saying physics is somehow "superior" to rock music. But one should never look at it like that. You should do what you like to do as long as you don't create trouble for others. You should sit and think through what you really derive happiness from and chase that dream.

The other thing about students that is very underrated is good, old-fashioned, hard work. I think most graduate students do not put in as many hours of physics as I do. Even today, I clock around 9 hrs a day on the average in physics. There's no substitute for putting in more number of hours or focusing on what you are doing. The usual feeling is that a productive scientist is very smart. Though it is true, smartness is not enough; it boils down to nitty-gritty hard work. The classic example is Einstein whom people think is a super-brain; but he needed to compute the perihelion precession of Mercury and if you look at his calculations, you'll find that he was really meticulous and had an eye for detail. If you are a prodigy, you have to work harder than the average ones. If your talent pool limits you, then there's no point in working harder. But a gifted individual needs to certainly work harder to reach a higher level and realize his or her potential. Today, creativity is over-hyped and hard work is underrated.

If you have fascination and motivation, and an ability to put in hard work and an infinite amount of time, anyone can become an Einstein. Usually the problem is with this availability of infinite amount of time!

Can you teach anyone to be a scientist ?

Given infinite time.

Do you worry about the fragility of Earth ?

I'm a complete optimist. When science discovers new things, there are always good aspects and bad aspects. Radio waves were thought to be harmful. Mobiles might cause cancer. People might die in the process. But humanity is much more than a collection of individuals living during a small period of time, say a few hundred years. Over a large enough time scale, even if there

might be a phase lag, science will take care of the problems science creates

Since you have interacted with Indian giants like Chandrasekhar and Narlikar, do you feel you have huge shoes to fill ?

I'm perfectly happy filling my own shoes !

When do you have your 'spark' moments ?

People usually say things like while going for a walk, taking a bath. Never happens for me. But in general, ideas come to prepared minds, after thinking for a long time, and after lots of goof ups and processing. There is no special moment.

Do you think experimentation is needed for a physicist ? Do you still perform experiments ?

Theoretical scientists need to know how to do experiments, as it instills common sense which can be sorely lacking at times. Good experiments are fascinating, so why miss out on the fun? If you are creating your own experiments they are more enjoyable. I used to do my share while at school but do not get enough time now.

Could space time be discrete ?

It is a possibility. Certain space times exhibit temperature. Anything with temperature has a microscopic structure, needing discrete degrees of freedom.

Should scientific research be teleological ? Should there be a sense of progress?

I do physics the way fish swim. I don't think fish swim with motive. I am not interested in end results and goals. I consider it common sense that when you are doing something, if you concentrate on doing it, you do it better. When you build a theory you try to understand something that you didn't get earlier, you enjoy the moment which is like Martin Gardner's 'Aha effect'. You ask curious questions and you like to solve them, but it is never a goal driven process. You try to enjoy what to do. You may not enjoy everything you do and may have to do 10% junk to have 90% fun.

Mimamsa '09

- Sarthak Parikh

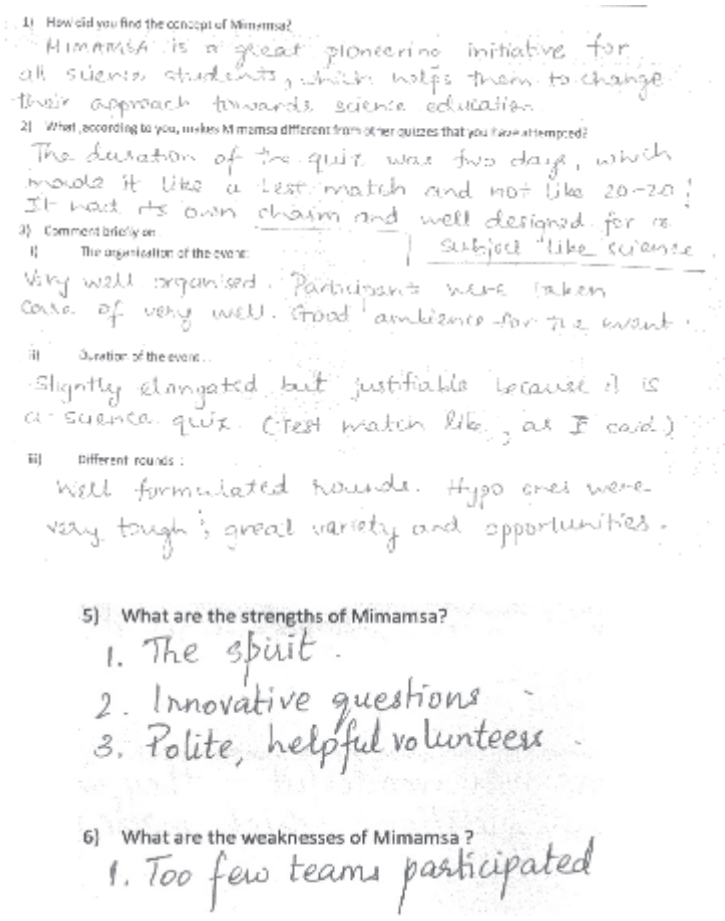
Mimamsa '09, a noteworthy success,
in January.
Inter-college Science Challenge
for science colleges (Pune).

Mimamsa '09, organised
by Science Club, under Dr. Dey (10th Jan)
Elimination round, (17th-18th)
4 teams compete in Finals.

Mimamsa '09, thought provoking questions, from
Biology, Chemistry, Mathematics, and Physics,
Not memory based.
Testing analytical reasoning,
Scientific exposition, and alert audience skills
First intuitions in rapid round, and slow hypothetical thinking,
Visual neuronal activity, with hand-eye-brain coordination in buzzer round, and of course, team work.
Basic concepts, that's all...

Mimamsa '09, for the audience,
purplexing puzzles,
all quiz questions open.

Mimamsa '09, about judges,
scientists from various branches,
and their helpful
remarks and suggestions.


1) How did you find the concept of Mimamsa?
Mimamsa is a great pioneering initiative for all science students, which helps them to change their approach towards science education
2) What, according to you, makes Mimamsa different from other quizzes that you have attempted?
The duration of the quiz was two days, which made it like a test match and not like 20-20! It had its own charm and well designed for a subject like science
3) Comment briefly on
i) The organisation of the event:
Very well organised. Participants were taken care of very well. Good ambience for the event.
ii) Duration of the event:
Slightly elongated but justifiable because it is a science quiz (Test match like, as I said)
iii) Different rounds:
Well formulated rounds. Hypo ones were very tough; great variety and opportunities.
5) What are the strengths of Mimamsa?
1. The spirit.
2. Innovative questions
3. Polite, helpful volunteers
6) What are the weaknesses of Mimamsa?
1. Too few teams participated

Mimamsa '09, for collaborations -
instant ones for participants,
and long term for
Organisers - collect questions, sort, solve, argue, appreciate, test time, meet, mull, laud, learn, nights, number, reject, rearrange, guess, guard, decorate, delve, vote, verify, feast, finish.

Mimamsa '09, about
speaking up,
listening patiently,
and clapping for all,
and for science.

Mimamsa in action

Science Club, IISER Pune, under the guidance of young and versatile Dr. Sutirth Dey, hosted Mimamsa 2009, on 17th and 18th January, a novel inter-college Science Challenge. It wasn't a factual quiz, but a contest where the participants' basic foundations in the subjects of Science were shaken and put to test over a two day period, spanning more than ten hours.

Four teams *[Abasaheb Garware College, Fergusson College, Institute of Bioinformatics and Biotechnology, Nowrosjee Wadia College],* comprising four members each, qualified for the final event on the basis of an elimination round held a week before on 10th January.
The six unique and diverse rounds not only kept the enthusiastic participants on their toes, but also kept the judgement panel, consisting of twelve eminent scientists from various branches of science, deeply involved.

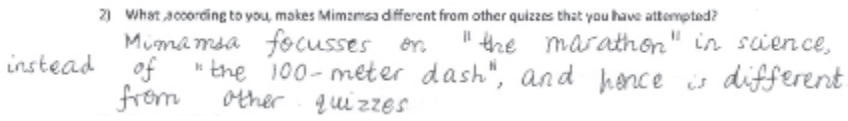
Of the many rounds, one also demanded the teams to present a half-hour talk on a scientific topic of their choice followed by a question - answer session. They were given one week to prepare their talks. The participants found the comments by the judges very helpful.

The audience too racked their brains over the questions which the teams were asked, and were accordingly rewarded. Not just that, there were separate "audience questions" as well.

The event was received well by everybody, especially the participants, as could be seen from their feedback.

Prof. K. N. Ganesh, Director IISER Pune, handed out the awards at the end, promising *gulab jamuns* next year, to add a new flavour to Mimamsa 2010.

This year, *Institute of Bioinformatics and Biotechnology* were runners-up, while *Fergusson College* emerged winners.



Warheads & Soldiers after crossfire

Karavaan '09

2 months of preparation, 2 weeks of intense practise, 6 hours to set up, and 6 hours to perform. One year later, Karavaan is back, bigger and better. The 8th of February 2009 was an amazing day, an amazing journey.

Two weeks before the final day, IISER Pune came alive at night. Every night, a bus-load of students would get off at IISER after dinner, and the halls would resonate with music, dance, drama and laughter until well past midnight. With no one who could complain about excessive noise, and every room free for our use, we let our enthusiasm and energy run free. It was a weary band of performers who reached their hostels late at night, every night, with only enough energy to flop onto their beds and fall asleep. Two days before the show, we were joined by the participants from IISER Bhopal and IISER Kolkata. They added their energy into the rehearsal sessions, and it was a great experience to get to know our contemporaries.

The 8th of February dawned, and students began trickling into IISER. Buses began shuttling between

IISER and the DRDO Auditorium, as performers, props and instruments started filling the auditorium. The backstage was controlled chaos, with people running all around, only pausing to move aside for a desk to shoot

past into the green room. Outside, the huge Karavaan poster was being put up by adventurous students, while others struggled to get the audio and video running. By

lunch time, we had reached a semblance of organisation and readiness, and waited for the audience to arrive. The last hour before the show passed very slow for some, really fast for others, but the wait finally came to an end.

The show began with an electrifying dance, followed by the first of IISER Pune's sketches (one of four short plays). An energetic and eloquent compéring team from IISER Pune guided the audience through the show. The first half of the show saw a hearty music performance

and a down to earth play from the students of IISER Bhopal. From Pune came a hilarious comedy of disastrous blind dates, a sketch in a psychiatrist's office, a solo song, and an atom-smashing fusion dance. After another sketch, the audience left the hall at gunpoint(the "gun" being pointed from on stage..), for snacks waiting outside.

After a short break (when confusion again reigned backstage),everyone returned to their seats, and were presented with a mesmerising half hour of music from IISER Pune. In the next hour IISER Pune staged an intense yet comedic play "Ghadiyaal", and also tried to explore the dilemma of a liberal father in a funny sketch. IISER Kolkata then staged an original and rather unconventional play. Combining a non-linear narrative with dance and music, it kept the audience thinking till the end. The show ended with a pair of foot-thumping

dances from IISER Pune.

Karavaan 2009 was a roaring success. We didn't know what to expect, but the experience was everything we wanted. After closing up at the auditorium, a tired bunch

of performers joined the rest of IISER and the invitees for dinner at the NCL Guest House. It was a great end to an absolutely wonderful day.

- Siddharth

On a Turn of Pitch and Toss

The IISER Premier League brought 20-20 cricket to IISER Pune. Between 26th January and 19th February 2009 the students couldn't get enough of it. The cricketers of IISER were divided into 5 teams – Titans, Samurais, Spartans, Mavericks and PhD. After 10 intense matches, it all came down to the finals between the Titans and the Samurais. After a thrilling match, the Titans emerged the victors of the inaugural IISER Premier League.

The winning 11 -
Parivesh, Shreyas, Srivatsan, Ajit(C) , Abhijeet, Ankur, Susheel(WK), Behlool, Prashant, Nishant, , Vasumitra, Anup
Substitutes : Dr. V. G. Anand, Darshan Joshi, Manoj Sahu, Anup Ingole.

Umpire – Rajesh; Scorer – Gaurav Arya;

The various awards went to –
Man of the Match (Final) : Behlool;
Man of the Series – Lokeshwar Bandhu;
Best Batsman – Lokeshwar Bandhu;
Best Bowler – Parivesh;

The students of IISER would like to acknowledge Dr. Shivaprasad Patil for helping organise the league, and thank NCL for the use of their cricket ground.

- Siddharth

Steadying Your Rhythm On Your Feet

Raman Hall is one of the two lecture halls that is well-known for its daily versatility in engaging morning lectures, club meetings, laptop surfing and even movie-watching. And yet, once again Raman Hall was dressed in different attire and got itself all ready for music in thy name on 5th September, 2008. The usual wooden benches were removed by a rather huge army of dedicated students and mats were spread out for the listeners to sway along and enjoy the music. A dais was made for the Honourable singer and the accompaniment crew.

We welcomed to IISER, one of the greatest living musicians of our country, **Ustad Rahim Fahimuddin Khan Dagar,** an expert in Dhrupad style of Hindustani Classical Music. The songs were sung to the beat of a double-headed barrel drum, the *pakhawaj*. It was played by Sri Parveen Aliya, whose synchrony with the singer was stupendous. The songs and the instruments complemented each other so beautifully, yet preserved

the individual integrity of each performer . At the crux of the performance were the tanpura players Sri Pallav and Sri Manjul who set the standard pitch. It all began with his throat-clearing, as the singer claimed to have a sore one. And he went on to elaborate ragas, showcasing his mastery over rhythm along with a fair amount of tradition. The songs began with the *alap,*an improvised section without the accompaniment of the drum. The *alap* in dhrupad has no words, instead it uses a set of syllables in a recurrent, set pattern: *a re ne na, te te re ne na, ri re re ne na, te ne toom ne.* The last set of syllables is used in cadences to reach the end of a long phrase. Alap comprised the greater part of the performance. From a slow tempo he gradually developed the melody or the raga. The control over the song that the singer possessed was just brilliant. A typical Dhrupad song is subdivided into *alap*, *jor*, *jhalla* (*nomtom*). Jor comprises song delivery in a steady rhythm. In jhalla, which means 'speeding up' the syllables are sung at a very rapid pace incorporating some techniques like *gamaka* and the like.

True to the name 'Dhrupad' derived from *Dhruva*(the steadfast evening star) and *Pada* (poetry), the concert served its purpose by inducing feelings of peace contemplation.

- Krithika

IISER Pune, INSPIREd

Inauguration of the INSPIRE Programme at Delhi

C.B. Ajit, Lakshmi Priya M.E., Apeksha Tare and Siddharth B. Iyengar attended the program in Delhi along with Prof K. N. Ganesh.

On the 13th of December 2008, at the Vigyan Bhavan, a great new opportunity was born for students of Science in India. The Ministry of Science and Technology announced the Launch of INSPIRE – Innovation in Science Pursuit for Inspired Research – a new programme designed to recognise and foster talented science students. As IISER is at the forefront of Science Education in India, it is intimately linked to the INSPIRE programme. So the director and four students from IISER Pune were invited to attend the launch of the INSPIRE programme in Delhi. I was very excited to hear that I was one of the students selected to attend the launch function, and though at the time I knew nothing much about what it was, I updated my knowledge by the time I got to Delhi.

It was a chilly winter morning when I reached the headquarters of the Indian National Science Academy, sometime before lunch. Already there were people standing in threes and fours around the building. After some time the small groups of people started coalescing and interacting with each other. From IISER Pune there were Ajit, Lakshmi Priya, Apeksha and myself. Waiting with us for transport to Vigyan Bhavan were similar delegations from IISER Trivandrum, Bhopal and Kolkata, and from NISER Bhubhaneshwar. We waited for about half an hour, and then realised that the bus we were waiting for had been outside the main gate all the while! We hastily loaded in, and went to the venue. There we waited for another hour, before being allowed inside. Every few minutes one of the directors (of one of the IISERs) would go and heartily greet an old friend, another prominent scientist and so on. The atmosphere screamed - “Big Science Brains Around ”! Suffice to say, it was an extremely interesting hour of waiting.

The first two hours of the programme consisted of talks given by the secretaries of the Department of Science and Technology, on the future of the various fields of science. A great number of schoolchildren from around Delhi were also present at the auditorium. After the talks, there was a short interval, followed by the main function. The chief guest was the Prime Minister of India, Dr. Manmohan Singh. First Shri Kapil Sibal spoke about INSPIRE, it’s goals, methods and the budget. Then booklets were released on the achievements of the DST in the past 4 years. Finally, the prime minister launched the INSPIRE programme. Then came the proud part for us all. Our director, Dr. K. N.Ganesh, along with Ajit, went up to collect the INSPIRE award from the Prime Minister, for IISER Pune. My hands went pretty sore after all that clapping. At the end of the programme, Dr. Manmohan Singh spoke to us all about how this is a much needed boost to science in India, and how important science and scientists are going to be for the future of the country. The programme ended with a vote of thanks.

I came away from that day further convinced that I had made a good decision in coming to IISER Pune. Science, and scientists, are going to have a lot to do for the country in the coming years.

- Siddharth

Clubbing All The Way… Into The Making Of Prehistory

The classes are over. The labs closed for the day, at least for undergrads. Our teachers snuggled up cosily in their offices, absorbed in serious work, prisoners of their urban resorts. But the students seem to be busier than ever. You can find them all over the place, scurrying around (like cave rats after the infamous Pied Piper of Hamlin, but obviously not perishing blindly in the overflowing river), taking hurried sips from a glass of milk or a cup of coffee, either running to catch a bus back home or to grab a book from the library before closing time. But then there are those for whom the day begins after the sundial shades six… because it's clubbing time! And no, I do not mean what you think I mean.

The clubs were started by the students with the purpose of providing expression to extraordinary amount of talent we have here. From making fires with flint stones to escaping the haunting shadows of Plato's caves, small stones pile up to make pyramids. Fortunately for the first years, their coming to IISER coincided with the starting of a whole lot of new clubs. These clubs have made IISER's evenings come alive with fun and frolic and have provided many a memory for the clubbers to cherish. Here is a peek into club activities from March'08 to Feb'09, recounted by many students.

BITRIGHT (Logged by: Girish & Sachit)

Bitright is IISER Pune's techno club, meant for those who believe that science and technology are the two sides of the same coin. While the curriculum at our institute covers the science side, we try to highlight the other side by having informal discussions and giving lectures to share our knowledge. Our main activity, the lectures, span from stuff in every computer cabinet, to futuristic Brain-Machine interfacing. The talks are aimed to be interesting, informative and relevant. An example is the talk on Linux, when it was installed in the computer lab or the intro to the computer equipments with a live disassembling of a CPU to help put in place the various man-eating acronyms and their relevance in helping one choose a computer. We also organised 'Director's Special' - a movie-making event. In the future we wish to keep organising more activities and lectures on diverse topics, sharing the latest in technology.

DISCUSSION CLUB (Inspired by : Roshni & Sisir)

What would you do with a blank sheet of paper ?

A member of the discussion club said "I'll take the sheet and I'd tear it in two..."

Him, known for his bulldozing, I augured another wasted paper...

'...I'd make a plane with one half...' he crooned further,

launching and ironing out my sunken and crumpled spirits...

'...and then on the other half write a poem...,'

'Idiot!' I thought, 'Sent the messenger empty handed, before, and without writing any message'.

'... whose spirits will rise and fall with its flight..'

And through that I found myself on a plane unlike any other

And that was how discussion club started its activities this year - on a dreamy, almost wistful note. One of the first bona-fide "clubs" to be established in the institute, it got off to a solid start on 31st August, 2008 with a heavy dialogue on "IISERs: Will they end up like IITs?" All of us left this first meeting impressed by the individual, but convincing perspectives of the speakers and the way the discussion was moderated.

In the meetings that followed, we not only had discussions on topics ranging from serious (regionalism, India as a super-power) to abstract (the idea of selfless-ness, science and art: How disconnected are they?), but also played some "slightly mad" games (in the words of one of the moderators) to lighten the mood. The meetings were generally enjoyable, but sometimes it was felt that more organisation/leadership was required.

Towards the end of the first semester and the beginning of the second, the spirit of discussion seemed to be dying a slow death, as the meetings became fewer and further in between, in spite of the sincere attempts of some to start a revival of sorts. Now, we hope to begin afresh and bring this club back to life again as soon as possible, for no one and nothing else, but ourselves and our satisfaction; probably, starting with finding a riveting name that speaks to the youthful soul.
(And through the other clubs help posterise and sell our bitleft ideas…)

AKS: THE DRAMA CLUB (Enacted By : Siddharth & Roshni)

Aks, the drama club of IISER Pune has had a great time in its founding year. An enthusiastic bunch of students turned up for the first meeting of the club, and went away very impressed by the skills each person displayed at speaking and acting. At our next meeting, we began doing exercises like chanting Om at different volumes, testing out facial expressions and mirroring. These exercises, apart from being an extremely enjoyable pastime, also help one grow as an actor. Many more memorable meetings like this one happened throughout the semester.

On 10th November 2008, Aks organised a creative advertisement competition called "Bech Sako to Becho". Contestants were asked to come up with short innovative ads propagandizing wacky topics. The competition was divided into two parts – 'Ab Becho' where the ads were aimed to sell products as wild as chewing gum to abet suicide or ultra-cold-to-the-core refrigerators as a utensil towards divorce; and 'Sab Becho' where the ads were for loony companies like the Federation for Dandruff Preservation and the Dog Tail Research Institute. The contest was a roaring success (though nobody really bought any of the stuff at the end of it), and laughter echoed through the corridors of IISER the whole evening.

Come mid-November, preparations began for Karavaan 2009, and Aks geared up to give its best. Many meetings were spent deciding what we must present, and everyone marched off into the holidays with scripts in hand, and strong instructions to come back ready to get to work.

January began, and so did rehearsals for the various plays. 'The Arrangement', 'Tarantino Variations' and 'Miss You' were first to get off the mark, with at least one of them being rehearsed every day. Later, work began on 'Please take a Seat', 'Ghadiyaal' and 'What's on the Menu…' Those days are etched in our memories – hectic yet fun beyond imagination. The times we goofed up, the times we got it perfectly right, the times we were ready to throw a chair at the director if he found another error and the time spent trying to get everyone to actually come for a rehearsal. We would shout out dialogues until our throats were sore, and eventually started having conversations based purely on dialogues from the various plays. Yes, those were amazing times.

Having worked on the plays quite a bit, we went into Karavaan '09 feeling pretty confident in ourselves. Months of painstaking practice did not go in vain, since our plays were appreciated by the audience and critics, alike. But above all, it was a feeling incomparable to anything to perform on stage, since for most of us, it was the first time. It was an experience, a journey that we will never forget, for all the lines we crossed.

AAROHA : THE MUSIC CLUB
(Strummed by: P. Sruthi)

With just a guitar, a keyboard, a congo, a tabla and a few singers, the IISER Music Club was started in the autumn semester of this academic year. Beginning from scratch, it took us meticulous planning to organize ourselves. Yet, we were an enthusiastic bunch. Under the conscientious strategy of the coordinator (also, the 'official' percussionist of the club), the guidance of the trained classical singers, the enthusiasm of a passionate guitarist and the excitement of a bunch of freshmen, the music club started its activities.

One of the first things we had to do was to think of a name for our club. At first, it seemed very trivial. But it wasn't all that easy to come up with a name, which conveyed the whole essence of our music club. Suggestions kept pouring in and finally, a name was chosen- Aaroha. 'Aaroha' literally means 'ascending' in the language of Indian Classical Music.

Practice started in full swing after that. Our goals were set. The first was to organize concerts regularly. And the second was to give a rocking performance for Karavaan – the Inter-IISER Cultural Fest. For a group of mostly amateur 'musicians', this was an uphill task, but we took it in the right spirit. We met during the weekends, discussed, played and sang, became aware of our faults, tried to correct them, exchanged suggestions, sometimes differed in opinions and made plans. We figured out, by trial and error, what worked and what didn't.

After a certain stage, it was felt that more musical instruments were required. Thanks to the efforts of our dedicated coordinator, supportive faculty and helpful administration, we finally got the instruments – drums, electric guitars, violin, acoustic guitars, etc. albeit after a long wait.

Now, Karavaan was fast approaching and the journey

towards our first on-stage performance kick-started. Those days saw us practicing rigorously to match the beat, to reach the higher note and to catch the right rhythm – in all, to give it all we had. Although we started out thinking of performing a few songs, when our first rehearsal in front of the 'approving committee' did not go all that well, we decided to go one step ahead and perform a musical drama. That got approved and now, we had only to wait for Karavaan to happen.

And then, the D-Day came. Aaroha's performance was scheduled after the interval in the programme. In spite of minor flaws and unavoidable mishaps, the show went well. Standing on the stage, we were reminded of the various experiences we had, the mistakes we had made, the lessons we learnt from them and most importantly, the fun we had...

We received both bouquets and brickbats for our show. But that was just the beginning. We have still a long way to go before we can call ourselves real 'musicians'. But now, Aaroha is prepared for any challenge. As the name suggests, we keep rising higher and higher…

KALAA : THE ART CLUB
(Painted by: Sameer Parihar)

Kalaa was born in the autumn of 2008, and it has taken shape in the last few months, as a platform for all those in IISER Pune who have artistic ability of any form, be it computer-based design, sketching or painting. The year that went by was eventful, to say the least and saw us through many learning experiences.

A Movie Poster Making competition was organised and it received great response. In order to involve the whole IISER family, Kalaa took up the initiative to get students to design KARAVAAN- themed T-shirts, by organising a "Make Your Own Tee" competition.

Kalaa has also been assisting the publicity of the other events that have been happening in and around IISER Pune. We designed the poster for Mimamsa 2009, the inter-college science challenge, organised by the Science Club, IISER Pune. We also designed the poster for Karavaan 2009, the inter-IISER cultural fest.

Like in the past, we hope to keep going this way, infusing colour into life at IISER.

SCIENCE CLUB (Fudged by Sarthak Parikh)

A bunch of enthusiastic spirits would be gathering every Tuesday in Raman Hall; and besides quite a few regulars, it would include a pack of new faces, some of who would join the league of regulars from then on, some who would persist being part of the revered "infrequent listeners" band.

For the uninitiated, Science club is a student organization started in mid-November, 2007. It is the brain child of people who want to view science from their peer's perspective. We, at science club would like to learn some basic science beyond what we are taught in regular lectures. In order to do so a student gives a talk every Tuesday at 6:00 p.m. on some topic chosen in advance. We also conduct group discussions, discuss elementary scientific papers, go on field trips and so on.

Starting from just the student talks, the Science Club took many more first-steps in its path to adulthood. These included large-scale field trips to IUCAA Girawali Observatory (IGO) and Giant Meterwave Radio Telescope (GMRT) for IISER Pune faculty and students, in November 2008; hosting the first inter-college competition in IISER – Mimamsa-09; starting with the year-long activities to celebrate International Year of Astronomy (IYA) 2009; organising an overwhelming Science Day on 28th February 2009; besides more than twenty student talks; all of this since the last edition of Kalpa came out, one year back.

With the newest batch of IISER too chipping in, the Science Club enjoyed gaining more muscle and brain power this year.

On the technology front too, the Science Club came out stronger this year. We got our own email id *(scienceclub@iiserpune.ac.in)*, and our own web page *www.iiserpune.ac.in/Activities/science_club/index.htm* plus a 500GB hard disk for better archiving and storage of Science Club related data.

Starting with healthy discussions in the weekly science club talks by the students, where the audience strength too gained quite a bit quantitatively and qualitatively, and all the way to sleepless nights and sweating sessions during Mimamsa-09 or the Science Day, the Science Club got richer and better with experience.

Random Ramblings of A Rookie

They told me life would change
It was always expected
But I couldn't ~~never~~ imagine
How beautiful it would get

All the classes we attend
& the freedom we enjoy
The jolly hostel life
Friendly banter, happy smiles.

Such a busy, packed day
Yet we still get time to play
To sing & dance & sway along
Flowing ~~alon~~ on with the song

Lectures & presentations
Lab sessions, ~~labs &~~ colloquia..
Freezing in ~~library~~ & computer lab
Scalding coffee ~~in~~ → cafeteria during breaks

Missed calls, conversations
Muddy walks after dinner
Invitation & quarrels
Making up with chocolate bars

Dashing thru library shelves
Squashed like pancakes in the bus
Tied-up hair & boring clothes
Wishing seniors ~~a~~ on the way

Daydreaming in maths lecture
Controlling laughter in Physics
Having 'fun' in chemistry
Blank stares in computation

Tempted by various 'clubs'
Feeling hungry all the time
Sharing stolen ~~biscuits~~ biscuits
Sitting in the library.

Avoiding 'jobless creatures'
Groan at the thought of lau
Making plans 4 Saturday nigh
Ending up at Swaraj...

# of class notes ...

On The Lighter Side ...

IISERMEN...

- Sarthak Parikh, 2nd Year student

I've heard many a name for calling out to people who study in IISER, but not even one of them is the one. The most common among them are IISERite [eye-sir-ite] and IISERian [eye-sir-ee-un].

With debates related to the pronunciation of IISER effectively over (although not conclusively – with some still preferring I-I-S-E-R [eye-eye-ess-ee-are] and a select few going as far as I-C-R [eye-seee-aarrr]), we can now move on and discuss this new problem.

Before I begin, I would like to tell you how *I* pronounce IISER. From experience, I have found it convenient to say IISER [eye-sir] when talking with people already familiar with our college, and dealing with the rest by calling out every letter [eye-eye-ess-ee-are] followed by "Indian Institute of Science Education and Research", to save them the trouble of asking what it really means. Since its birth three years ago, IISER has definitely gained some name. Now it makes sense to label our college students with a particular name, rather than calling out "from IISER" every time. Obviously the label must reflect the fact that the student studies in IISER, immediately..

One other variant of IISERian is IISEeRian [eye-see-ree-un]. I don't think anybody will fancy it. Although it may look like the last derives from I-C-R, the truth is, it doesn't. Or maybe it does, because the author heard students from IISER Bhopal call that tag out during Karavaan-'09, but could not investigate its word origins.
One meek suggestion which I have is IISERmen [eye-sir-men] (and I should probably state in the beginning itself I am not being a sexist). IISERmen derives from freshman, a term used in the American colleges, for first-year students, both boys and girls (sophomore – second year student, junior – penultimate year student, and senior – final year student).

But then maybe we are just "from IISER" only...

Through the eyes of a ...

JUNIOR

- Ajay Subramanium, 3rd Year Student

So I'm supposed to condense the last three years of my life into a single page? It's a tough ask. I mean, how do you put all of it down in words? There's been so much happening here. Right from the inauguration, that wet day in the August of 2006 when Dr Mashelkar and Dr. N. Kumar told us we were going to be guinea pigs. All the way till Karavaan-09 in February this year, it's been quite a ride.

I could talk about how IISER's been a tremendous learning experience. Starting from our classes in the NCL Innovation Park. It's quite amazing when I think of what we did with that place. 80-seat Lecture hall + library + computer facility + THREE labs + Faculty and admin offices. All in a space of around 10000 sq. ft. And at one point we had both the 2006 and 2007 batches being taught there. Talk about shrink-fit! Of course, that first ever lecture in IISER by Milind Watve on the 17th of August 2006 has been mentioned many times, and I can't

do any justice to the occasion in this article. But the sheer variety of people who've spoken to us in the last three years, is quite incredible. Just take a look at the list of colloquia in Kalpa '07 and '08. Those lists merely scratch the surface.

Although, to be honest, it hasn't all been a walk in the park. It did take me time to get used to life outside of my home. The course load has been ever so slightly on the "That's it! I can't take it anymore!" side from time to time. And the fact that our campus has taken so long to materialize is mildly irritating. In fact, the skit which IISER Bhopal put up during Karavaan this year was uncomfortably close to reality for a lot of us, especially the students of my batch!

Even so, I think we've all managed to create zones for ourselves within this nebulous-but-crystallizing entity that is IISER Pune. We've found places to hang out, even within the more-spacious-than-Innovation-Park-but-still-cramped Sai Trinity campus. We've developed outlets for healthy interaction among students. All the student activity clubs are certainly paying dividends. Check out their web pages to see the targets they've set for themselves. These guys are good. And let's not forget IISER's biggest draw: a level of exposure to scientific research that isn't seen anywhere else in India. To sum up, my three years in IISER seem like a roller-coaster ride. Scary at times? Sure. But I wouldn't miss a chance to ride it once again!

SOPHOMORE

Life has never been as eventful and exciting as in the past two years at IISER. The students of our batch have always been in such a comfortable position - we have seniors to talk to when we are in a dilemma and juniors to advice when we wish to share our expertise. Indeed, the most interesting part of this endeavor is that we have been a part of this institute, evolving day by day for the better. From the small 900 NCL Innovation Park (more popularly "the computer play station"), we are now in a place where we don't even get a chance to greet everyone in the same day, even though we work in the same building.

- Surojit Sural, 2nd Year Student

Our courses in our first year were handled by various faculty, some of who being highly inspiring, sparked our curiosity and enthusiasm in subjects we had never been taught before. In the new building, Biology and Chemistry labs were set up and we are really proud to have such world class equipment and facilities here. In the first and second year we were organizing several events in the college such as concerts and competitions. We even went to represent our institute in the annual fests of other colleges in Pune and also in other cities. Every nightfall beckons us back to HR-2, our boys' hostel. Located in a residential area, we enjoy staying here, it's like home. We have a common room which has a TV and it brings us all together during the IPL season as well as the NBA league. One of the most memorable events in HR-2 are the birthday celebrations in the night which we cannot forget for quite a while. All-in-all, we look forward to better things here, as we grow year by year with IISER.

- Manoj Sahu, 2nd Year Student

FRESHMAN

- Pooja Naik, 1st Year Student

13th August 2008 : Over 50 wide-eyed 18-year olds walked in – idealistic, eager yet apprehensive. We came from all over the country, almost each one of us away from home for the very first time. We eyed the seniors with distrust; they looked too mature and experienced. We stared awestruck at the gleaming instruments in the labs. We ooh-ed and aah-ed over the magnificent collection of books in the library. And we were more than surprised when informed that our hostel was, in fact, a posh bungalow in a residential area. Yes, we had taken a tentative step into a new world : the world of science, the world of college, the world of IISER..

Bonding took place almost instantly; after all, we were in the same boat ! Long conversations in which we exchanged our views, opinions and experiences ... as we slowly got to know each other, it made us realize that below a unique exterior, we had astonishing similarities.

Classes began – we took a while to get used to the methods of teaching; the school-to-college transition wasn't very smooth. But we started interacting with our faculty, and since the batch strength was quite manageable, we could ask questions and debate on (academically) controversial matters regularly. We were pleasantly surprised by the fresh and original way of teaching classical mechanics. Learning chemistry was a joy, since we were shown videos and demos of how reactions REALLY took place. We also enjoyed the colloquia, meeting famous scientists who spoke enthusiastically about their specific fields of interest.

Initially, the idea of studying mathematics as well as biology seemed rather daunting. The math students didn't think they would be able to pick up biology, while the bio students weren't hugely thrilled by the prospect of doing mathematics. All-in-all, it was a new experiment for us ... but so far, so good.

However, it's not like we study 24/7 – far from it! All work and no play makes Jack a dull boy ... or Jill a dull girl ... but we're a merry bunch. We try out new restaurants, joints or 'dhabas' every Saturday night (when our mess is closed), in search for food which least resembles the mess food. We stroll out after dinner, conduct lengthy discussions on anything and everything, and laugh over the dumbest PJs. At times, some of us are seen perched up on the red-tiled roofs of HR-3 at night, having silly conversations to real heart-to-hearts (avoiding the guards' keen sight – what if they report to the wardens?). After all ... instant chaos reigns the moment we discover yet another 'surprise check' by our lovable, over-protective warden!

And then, of course, Karavaan '09. It took us on an exhilarating journey of fun and exhausting practice ... we used to stay at Sai till midnight (to practice) and were then royally escorted back by the Sumo (the institute vehicle). We survived the 3 pre-Karavaan weeks as adrenaline junkies ... and loved it.

Although we are the newcomers, our lives are already woven intricately into the ones here; we're already a part of the IISER family. We're happily settled ... and immensely proud of the fact that we're the 3rd batch of IISER-P, and we are the ones who will help create its history.

Sketches by Madhur

Through the binoculars of an amateur

- Ramya Balaji

Gliding down with pride to its crude nest atop a 20 metre lamp post, the *Kite* (which I eventually figured out) gave its chilling, shrill call 'whree-whree'. Next, it perched and tore open its prey, probably a rat. Suddenly, it swooped down and was out of my sight.

Well, that's how it all began, my foray into bird-watching. Last year, around this time when most people were preparing for that endless list of examinations, one could see me out on the balcony with a pair of binoculars. Binoculars, one of the most fascinating optical devices, are perfect to reveal the even more fascinating world of birds.

Hey, but there is a lot more to appreciate about them than just watch them fly !!! All you need to do is to pick up a pair of binoculars, a handy book on birds and most importantly, observe. And voila, you are already a good beginner!!

Through those binoculars you could see... *The White-Bellied Blue Flycatchers* flying over and around our Sai Trinity Building back in October. They are restless creatures, but one can identify them when they are flying low, which is quite often the case.

Here are some easier ones to spot. It is simple to know when an *Asian Koel* is around, generally hidden in the dense foliage of large trees. The black coloured male's call begins with a gentle 'koo-koo', goes on a rapid crescendo and then abruptly cuts it out. The female does a harsh 'kek-kek' and is brown with white spots.

Catch the solitary *Black Drongo,* sitting on an electric pole or a fence. It has a shiny black coat and a distinct forked tail. And how can one miss the iridescent small *Bee-eaters* sitting in a long queue on electric wires ? A few, if then, would dash for a bee only visible to them and then would be back on the wire, relishing their catch. Most are active in the evening.

I am sure, everyone has seen the ubiquitous *Red-Vented Bulbul,* heard its mellow call while flitting from branch to branch. Ever heard the incessant 'tuk-tuk' of the 'coppersmith' on a hot afternoon ? That's actually the *Green Barbet.* Try spotting one!! (It's tough, I warn you !!)

This next one, we all would have heard sometime and might have been noticeably irritated. Its call is like a shrieking banshee, not pleasant at all!! It goes around in circles till it tires and decides to settle down finally. When it alights, it calls out 'Did you do it' !!! - This is the *Red Wattled Lapwing.*

Around March, there will be plenty of *Sunbirds* around, the males displaying their dazzling metallic coat with chirpy singing. Oh, I could go on and on, but not until you go and get yourself a pair of binoculars and peer through them. And then of course, HAPPY BIRD-WATCHING !!!!!

Colours

Imagine you have a blank paper on your desk
Your gaze falls on it as you turn to your left
You are stretching to ease your muscles
Your feet hit a bottle of paints
You are bending over to pick it up
As you see the dried paint of long ago
And a palette of mixed colours...

You think of painting, and as you think...

You go out to the open terrace with a canvas
Look up to the mosaic of blue and smile
You shake yourself and start with a flourish
Paint the clouds like cluttered cotton
A dash of white, blue and golden
Look out for the sun, its rays
Strokes of yellow, orange and red
Ouch, you flinch a little
Almost burnt a finger, the heat!
You decide to move to cooler quarters
A Dreaming Tree with branches
Roots extending right through
A sudden tug, something's stuck!
You climb up the tree and Lo! A KITE!
A bright green diamond with a red bow
With the white string tailing away
And there's a nest at arm's length
Two hundred twigs sewn up together
Jumping down the tree, you dust yourself
And wait for the bird to come
Stay quiet, and just look around
Be alert, it startles one, usually!
Ah, there it is, swooping down
Settling on the nest, newly made
Smooth strokes of mauve and maroon
Spots of silver, dazzles you

Scanning the fuller frame
And now that birdie has come here
Gently pull out a feather
And sign your initials at the corner
Of the paper, with panache!

The stretch was over, rather quickly
Rubbing your eyes, you look over,
On the table, the blank paper
Not there anymore,
Shrugging, you go to the sill
And curiously enough, you frown, amusedly
"A feather with an inky stalk! Humph!"

- Krithika Mohan

Will Her Dream Come True ?

A little girl thought these when going to sleep
Her thought on this world, profound and deep
She thought of all the distrust in this world
And about the paths, twisted in entangled curls.

She thought of terror in those inhuman deeds
That we humans do, to fulfill our greedy needs
How common enough, this faith betrayed
In this game of life, with its hassling ways.

Thinking of this, she felt feeble and weak
Helpless and tired of this world so bleak
Her eyelids drooped in a sighing weight
Of fear, of misery of this painful fate.

To a land she went, a land as she wished
Where all her pains, now seemed diminished
The sky above bright with soft rosy light
Jewelled by colorful specks of birds in flight.

The morning sky that now hung above
Felt like a sheltering roof from the world of woe
Her heart felt safe for a cause unknown
With a gleaming light her face now shone.

Her tender lips now arched to a smile
For she saw happiness abound for miles and miles
No terror she sensed, no fears beheld
An incredible ecstasy was all it held.

Love and joy were the comrades she found
Feelings of freedom and bliss unbound
No less was it to the heaven in her dreams
As true it was, it was a land in dreams.

For, when she woke, her dreams betrayed
To the same old world, on the bed she laid
Those alluring illusions her dreams had played
Looked unworkable, now distant and faded.

Her vision now rested on the unbound sky
Unlike her dreams, this was dark and wry
Chills of dread now flowed through her
Lonely now left, hazed out, in a blur.

The swirling tendrils of mist that rose
Windows to hope, they all did close
Her candid eyes now drowned in her tears
Her unripe soul now crammed with fears.

The pains in this world seemed to rip her apart
The blight too much to restrain in her heart
Tired of bearing the hurtful pain
And the agonies of this world, insane.

Broken and shattered, drowned in dismay
In this world so huge, unable to find her way..

- Swetha Bhagwat

Behold ... my Beloved !!!

Charm of your grace in the curl of my fingers,
Forces all eyes to focus on you.
Magic in having you glides me through life
Blooming all paths with bliss alike.
Soft and small touches can warm you up but
Caressing pats often put you to sleep.
Sharing my secrets and keeping an eye
Day in and day out you are with me
Setting me close to my kids and my kin
Bridging my gaps to friends across.

All through the night you lie on my side
Keeping a vigil that secures my sleep
Waking me up in the morning for sure
Softly with music that kicks my day off.
My views of the world lie frozen in you
Myself, so lively when seen on your face
Be with me forever, my cute beloved!
But for you, I would be nuts in a day.

- G. Ambika

A balance of mutualism – "Ant plant symbioses"

- Kunal Sinha

Ants are everywhere but we hardly notice them. We never bother about what they are doing or how they live. Though they cycle huge amounts of energy and are dominant in insect society, they receive only a passing mention in textbooks of ecology. They are not only tireless workers but are also farmers, warriors, diplomats, weavers, excellent communicators and much more. The huge worlds of insects and plants have joined hands during their different courses of evolution and have resulted in the myriad of ant-plant interactions.

Coevolution

During the Cretaceous period when angiosperms (flowering plants) were diversifying and spreading around the world, the primitive specomyrmine ants were on the scene. An intricate co evolution between these two taxa began. In order to spread, angiosperms had to depend on insects for pollination. In turn greater number of insect species subsisted on nectar and pollen. But problems started when insects began feeding on the foliage and wood of angiosperms. Now plants evolved different structures - thick cuticles, dense spines, hairs and secondary defense mechanisms. Into this lively theater of evolution, enter the ants. As time passed they seized new roles as pollinators and seed dispersers and plants became a dwelling place for ants.

Some plants provide thorny cages to protect the first set of eggs laid by the queen ant during the early stage of colony development. Research shows that these mutualistic ants have larger colony size (nearly 4000 ants within three years of first egg laid by queen) than their other counterparts.

Ant gardens

The most complex mutualism between ants and plants has been seen in ant gardens. These are aggregates of epiphytes assembled by ant colonies. The gardens are round masses of soil, detritus, and chewed vegetable fibers assembled on the branches of bushes and trees, ranging in size from golf balls to soccer balls. Within these are grown a variety of herbaceous plants. The ants bring the seeds of epiphytes into their carton nest. As the plants grow their roots become part of the framework of the nest. The ants feed on the food pulp, elaiosomes (food bodies of the seed) and the secretion of the extra-floral nectaries.

Myrmecochory

Ants do not eat all seeds stored in their granaries neither do they carry all the seeds they harvest back to their nest. The result is that harvesting ants are major seed dispersal agents in many parts of the world, especially effective in deserts and grasslands. Such plants produce attractive seed appendages and chemicals that induce ants to transport the seeds without harming the embryo or endosperm.

Ant-pollination syndrome

Plants grown in hot and dry habitats where ants are abundant have nectaries that are accessible to flightless worker ants(Hickman 1974). These plants are almost exclusively pollinated by ants. The Australian orchid *Leporella fimbriata* is pollinated by pseudocopulation: winged bull dog ant males of genus *Myrmecia* mistake flowers for virgin queens and attempt to mate with them, picking up pollen in the process *(Peakall et al. 1987).*
We sometimes may think that ants may cheat the plant, but antibiotics and other chemicals secreted by the ants' poison glands help in controlling bacterial growth in the plant's reproductive organs. These chemicals also trigger their growth and development.

Prune and weed

Some specialized ants dwelling in plants protect their host not only from herbivores but also from other plants that crowd in too closely. *Pseudomyrmex ferruginea* workers attack and destroy any other plants that sprout around the trunk of the acacia in which they live, and they cut back vines and foliage of neighboring trees that touch the acacia crown*(Janzen 1967).*

The question arises as to whether it is more beneficial to depend on mutualism or on one's own defense mechanisms. In order to maintain their own defenses, plants have to invest a lot of energy. Trading and compromising with ants uses less energy. Some plants do run their own defenses. In both cases, the energy is invested to obtain a positive net yield of energy at end.

The long and beautiful coevolution of ants and plants and their current mutualism is a fascinating topic, and we can see in them many parallels with human activities and history.

Sounds of Silence

Looking out through my prison cage,
With chains binding the mortals;
Thoughts carrying the spirit high
to the infinite ,unbound eternal I fly;

Flying in the infinite free sky,
Looking down on palaces and shanties,
Village huts and urban mansions alike,
All indistinguishable from each other,
All in one plane mixed with each other.

With whacking of wings,
Gaining of altitude,
Borders being vague,
And discriminations blurred
Women and Men, Black and White,
Some blind with faith and some with none at all
All looking one,
All bound by the same chain;

Hands cuffed and Minds bound,
Hearts dead and the urge of freedom unfound;
Tears rolling down
seeing them bound,
All prisoners of time,
Elated or sad;
Some cry And some cherish,
Some fight
But all submit;

With a generation down the quicksand of time,
Sentenced and confined to their cells for life,
With chains of gold and handcuffs of desire,
Trading freedom for life at prison,

As days went fast and years flew faster,
Minds were caged and so were dreams,
Aspirations confined and freedom undesired,
As memories faded,
Suffering turned to desires,
Vibrant struggle to silent meek acceptance
Willful action to stagnant stale trance,
Wheels of time moved faster
And urges died natural death;

No more tears
No cries of independence,
No more dreams
And no struggle for freedom,

Considering
bondage to be precious,
Chains, a necessary possession,
Life, to be loved,
Death, to be feared,

Certainty of prison to die for,
Uncertainty of freedom not to think of,
Mortal, counted breaths to fight for,
Immorality, unbound, not to even try for;

Thinking, a vice,
Inaction, a virtue,
Lordships of cages revered,
Slavery of the self venerated,
Living and dying,
Smiling and Crying;
All in cages and All in chains;

With the windows still open,
And thoughts still flying high,
Watching down on them,
as thoughts traversed, unbound,
I smirk at the prisoners,
As I was like them; thousands of years back;

I struggled and suffered
Wretched and tortured,
Wounded and Killed
I still tried,
Once and twice
And thousand times,
Defeated and Dusted
I Struggled But never surrendered,
Kept looking at the sky through the cages,

Finally, the moment

Walls ceased
Leaving body uncaged
Spirit on eternal jouney
Leaving chains behind
Looking back at the walls,
With bars binding the mortals;
Mind carrying the spirit high
Towards the unbound eternal I fly;

Leaving the body in chains,
Spirit flying high,
No cage of body
And no bondage of life,
No chains of gold
And no handcuffs of desire.

No masters
And no slaves,
Me being the world
And world becoming me .
Thoughts carrying the spirit high
to the infinite ,unbound eternal I fly.

- Harsh Chaturvedi

Blinds

- Krithika Mohan

The blinds were not drawn aside. At least, not yet. It was a few hours past early morning and she did not yet want to let the sunlight stream in through her drawing room. She was sitting with a cup of coffee on a bench of wood. Taking her eyes off the intricate patterns on the teakwood, she looked up to face the blinds. They were made of alternate bands of white and gray. Two gray parallel folds followed by five off-white folds. They were connected by beaded chains in off-white. She looked at it for a long time. She preferred it to be pastel orange with white. That'd be more like it! The ceiling fan in the room gently disturbed them and they were making waves. The sunlight trying to get in through the crevices, cast a shadow of the sill above the blinds. And it almost looked like the shadow was broken and moving. Broken, because of the folds in the blinds and moving because of the disturbance. A quick look at the ceiling showed a wavy reflection of the motion of the blinds. Blinds… she wondered, she thought about how the name came. She wondered about the invention, about its elegance and about its truth. Blinds unless drawn aside make you blind to the world, shut you temporarily from what's outside, whatever may it be. Like we aren't blind already. Blinded by blinding lights or blinded by blunders – blind it is! She knew it! She knew the limitations everyone has. The fact that everyone is going through life like it is a movie, compressing each magnificent moment to a second, the mini-moments lost within the nuances of the movie. Well, who cares about nuances? The large picture! So, what role do you think so-and-so is going to play in our lives? And how useful is it going to be in the long run? And the like...

It was actually hitting her now that we hardly ever see things as they are. We see them as we are. Our thoughts and emotions further cloud our perception, she thought. When we look ahead, we don't see a mosaic of blue, white and colourless space, but sky and clouds. She could rant on the whole day, but what did it matter? She sipped the coffee slowly till she could see some remnants of undissolved coffee powder in her cup. Had her coffee been a tad too bitter this morning? No, it was rather too sweet; too creamy and had way too much milk. She put the mug down on the bench. Ceramic on wood. She took a stride ahead and decided it was time for the universal energy to make a grand entry. She held the side chains and started pulling it slowly. It was almost like a solemn, sacred moment. She never knew what it felt like to hoist flags of your own country in front of a gathering. She always wished she knew. And now, nor did she need the gathering and she didn't even have to look up that far. She chuckled. Of course, she did not even have to straighten up and freeze out of respect. Now, she knew how it felt, how magnificent it felt to draw the blinds. She was glad it was not a normal curtain that'd part on both sides simultaneously. The sun's rays streamed in through the glass and she could now see the world, vertical black n white gridlines. And, then, she went on to wonder 'what if the world were all black 'n' white ?'

My Second Roommate

How did you come in without my knowledge ?
The sight of you always keeps me on the edge.

I keep telling you, my room's too small for a third,
But you never seem to listen, and you act so weird....

You arrived with no luggage, I was glad about that,
But your presence is enough to make me go mad.

You disturb me every night with relentless chatter
You live in this room, as though no one else matters.

Haven't you ever once considered my feelings,
When without a conscience , you spoiled my belongings ?

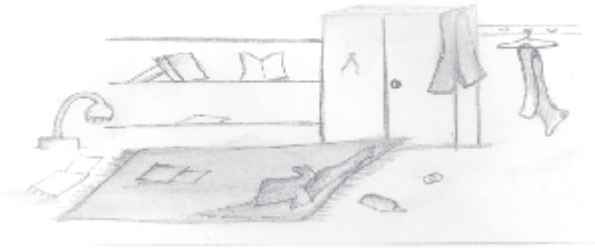
Please tell me why are you so inconsiderate,
Not an iota of care for your own concerned roommate ?

You wreck my room, when I leave you alone,
My food half eaten, my assignments all torn.

I know it was you who nibbled away my cheese;
You ransacked my room, then hid away with ease.

I know you wish to stay, but the time is up for you,
I know my room's cool, but it can hold only two.

- Swati Venkat



Shadows of Solace

With a heart filled with grief
And a soul mourning ceaselessly,
With no one in this world
To share the burdens of my heavy mind,
With a woe-begone countenance
And tearful eyes,
I turn to the shadows in the dark
For comfort and solace.

To pour out my miseries
Of the past and the morrow,
To confess my guilt and delinquency
As I regret those past deeds,
To elucidate my helplessness
In this ruthless, rapacious world,
I turn to the shadows in the dark
Eagerly seeking a solution...and emancipation.

Silently they devour
My fatigue and exhaustion.
Sighing noiselessly
As they take away my weighty anxieties.
Slowly they creep
Into the bowels of blackness,
And come back with solutions
That render the day ahead bright.

- P. Sruthi

I Can Never Comprehend

I can never realize
What it takes
To survive in each day's fight
To earn your way through life
To spend endless nights
Stricken with hunger and fright
For I live in luxury and delight.

I can never empathize
With those subject to exploit
And with those who can
Never seek to vent the rage burning inside
For I know not
The harsh cruelties of life
For I live in peace.

I can never comprehend
The true values of sacrifice
The feelings of gratification
When I offer all I have
To others with a need
And how it feels to do without
For my life is full of greed.

I can never perceive
What real pain is
What it means to
Leave a past full of nightmares behind
And struggle each day
To see a tomorrow
With no difference.

- P. Sruthi

Across the Horizon

- Roshni Bano

She was there again. And there, there they were. She could see them, floating at a distance. Almost guarding the horizon. More of them becoming visible by the moment. Rising anew like wisps of smoke from a fire. But she kept moving. She felt no fear. She had been there before.

Seen them. Known them. Nearly liked them. To think of it, it had been a while since she had met them. She was looking forward to facing them again. It almost felt like a reunion. With a long- forgotten friend.

Uncontrollable bursts of laughter. Almost manic. She was laughing like she never had. At herself. Her worries. Her regrets. Even her happiness. How could she have even thought that? That god-forsaken feeling was coming back again. She could not understand. After all that she had been through? All that had happened?

She stopped. All that laughter had fired her up. Made her feel more alert than before. Memories of the past flashed past her mind. She started to think. Scanned every nook and cranny. That didn't take very long. But nothing seemed to occur to her. She, as always, was looking for a start…

And then, she remembered. Remembered how she had first met one of them. He had just strolled into her life. Looking like he had nothing else to do. Eager to befriend her. She liked him too. Through him, she met more of them.

They seemed to make her life more ordered. Easier for her to control. But to her, it looked more like a mess than ever. But she had no time to think about that. Because with them around, she was busy. Almost juggling one task with the other. She had no time to worry. About anything. But for some reason, she was enjoying herself. She missed doing nothing at all, but this was different. And she liked to explore. Was more than ready to drown herself into something entirely new. She remembered those times. Almost looked back at them with a wistful smile.

At that moment, everything seemed to pause for her. Refused to move until she understood. And understand, she did. They moved again.

She understood. A wonderful feeling, almost euphoria came over her. She understood. She understood why she felt the way she felt. She understood why she had laughed. She understood why she wasn't afraid of them anymore. They had always been friends, after all. She just hadn't realized.

Sunset

- Anirban Ch. Narayan Choudhary

The sun shone down brightly on his face, casting dark shadows under his bloodshot eyes. He had not slept last night and probably wouldn't tonight as well. He could see a long way into the distance from here, all the way to the express way, where... No, he didn't want to think about that. He sat on the ledge, panting, wondering why the other guys could make the climb so easily.

A trail led away to his left, into a dense grove of trees that ran all the way down the hill, only to be cut short by huge boundary walls. His father had been unable to decide what infuriated him more- the walls that cut off all access to the hill, or the tons of garbage that found its way over them.

He wished for the song in his head to stop. He hated that one, one of those ever-so-hopeful songs people sing when they lose all hope and are about to go crazy and kill themselves. Maybe he was like one of them now.

He felt the wind on his face, heard it rustling through the grass behind him, blowing over to his home that lay a hundred feet beneath. This time of the day, his mother would be sitting in the balcony, solving the crossword, while his sister paced around her room frantically, glued to her cellphone. Not today.

All the relatives would come pouring in tomorrow, offering their condolences. He wished he wouldn't have to face them. He'd had had enough of that on the phone already.

If only he had been there... He would've looked out. He would've done something, anything.

He felt like doing a lot of those things now, in fact. Like killing the driver of that damned sixteen wheeler. Like jumping off the ledge into the abyss and waking up with a jolt from one of those familiar nightmares about falling. Or maybe he just wanted to jump off and never have to face himself, or the endless ifs and whys, again.

The sun was setting now, bathing the hills in an orange glow and flooding the sky with a million colours. It was one of those sunsets you read about in poems- the one to die for. He didn't care. Sunsets would come and go, all the time- somewhere, some place. But some things wouldn't.

He wished the damn song would stop replaying about beautiful days and the sun and the moon and all that kind of muck. He didn't want any false hope.

He got up, taking a final look around before starting on his way down. It was beautiful, one had to admit.

There were better things to sing about though.

May be he'd do that... someday.

Internet for pleasure

- Yateendra Joshi

Given the statistically predominant use of the Internet, the title of this article certainly sounds bold. However, it is the small pleasures of life that I want to talk about: tracking the lyrics of a film song, the tune of which keeps haunting you, finding the book that has been eluding you for years, or listening again to your favourite radio programme - to name a few.

If you have more than a passing interest in songs from old Hindi films, you may have wished you knew the exact words of a particular song - if only to hum it to your satisfaction. You could always turn to the Internet to check if the lyrics are available. Anticipating this need, many enthusiasts have created websites where these details are available. Again, thanks to the Web, you have over a thousand select pieces of Marathi poetry too.

There are other riches for those who like English movies. It was at one such site that I could finally run to earth the one phrase from a speech that had been eluding me: it was **Al Pacino** in *The Scent of a Woman,* and no matter how often I listened to the speech, I never managed to catch "I'd take a flame thrower to this place". I struck gold yet another time and was able to download, in MP3, another famous speech, this time by **Gregory Peck,** from *To Kill a Mockingbird*.

Dr. Johnson has always been one of my heroes, and his famous letter to the *Earl of Chesterfield* shows **Dr. Johnson** at the peak of his rhetorical power. It was therefore,a windfall to find an audio version of the letter, delivered with great skill—not by any famous screen or stage actor but by another fan of **Dr. Johnson.**

A long-time fan of **Alistair Cooke,** I was thrilled to find that the BBC had put many of his letters from *A Letter from America* on a webpage devoted to him. The broadcasts are available as streaming audio. The *Letter from America* must have been the longest running radio programme in the world, a series of short, 13.5-minute talks, broadcast once a week, that ran for more than 50 years.

If you are content with audio, the website of RSA, the *Royal Society for the encouragement of Arts, Manufactures and Commerce* has treasures for you: for more than 200 years, the society has provided a platform for leading public thinkers. Although you cannot go back a century, hundreds of the Thursday lunchtime lectures are available for listening for free.

And for those who love books, the Internet offers bounties you could not have wished for even in dreams. My best find so far is a complete edition, in mint condition, of *Strangers and Brothers,* a series of 11 novels by C P Snow, published in 3 volumes - for less than 10 dollars. Although rummaging through old books has its charms - I once bought a copy of *The Craft of Intelligence* (by **Alan Dulles,** a one-time chief of CIA, the Central Intelligence Agency) from the pavement opposite S P College on Tilak Road – it cannot match websites like <addall.com>, which allows you to search for the stocks held by many thousand book dealers the world over.

Lastly, this article will be incomplete without a nod to *Rapidshare,* a goldmine indeed. It was here that I found a number of books I have been wanting to read, the latest being **Francine Prose's** *Reading Like a Writer* : a guide for people who love books and for those who want to write them.

I should like to end with a caution. Photocopying, and now downloading, practically guarantees that you will never read the stuff you have photocopied or downloaded. It is easy to amass a large number of files - what is difficult is to find the time to put them to good use. How unfortunate that even the Net cannot make your day longer than 24 hours !

Guilty

This night as I sit alone,
I've fears that I will die.
In this heart, sadness prone,
Are thoughts that make me cry.

Will I see that bright light
Of joy in far-off foggy sky;
Or is this my last fight,
My way to the infinite high.

Will my wounds ever heal,
Or will blood drip every time.
Until no more I do feel,
The guilt of the committed crimes.

Will I ever overcome my fear,
And think that everything is fine?
Or will my heart never be clear...
Will tranquility ever be mine?

This night as I sit awake,
These thoughts fill my mind.
Thoughts I will break.
Thoughts I can't leave behind.

- Ayesha Fatima

Reality of Reason

- Anees Ahmed

There's this person. You call him delusional. You see him behave irrationally, according to you, that is. But does the deluded person know this ? Does he know he's deluded, thinking the wrong stuff? He does not. According to him, his faculty of reasoning is fine. The same applies to the remaining of us, we who 'know' that we are not 'deluded'. How do we know whether all of us are deluded or not ? It will turn out that this question is actually senseless. Not common-sense-less, just sense-less.

Before proclaiming me a madman, just think of a way to prove if we are not under the influence of a universal hallucinogen. One thing is obvious, logic cannot be used to prove whether we are deluded or not, or in better terms, if our reason is correct. That would be similar to saying :- since 2+2 = 4, therefore 2+2 = 4. If our reasoning faculty is deluded , then none of the statements made above make sense. Neither does this last one.

We may try to find the roots of our consciousness through evolutionary theories, but then that is also logic. You may say, 'since all the world follows the laws of physics, determined using our reasoning, the 'talent' of reasoning we have must be correct.' And lean back smugly in your chair. But haven't you used logic in your proof ? You may want to give another proof, but the fact is that to construct a proof, logic must be used. Now let me detour.

I can name at least 10 colours. But do colours 'really' exist? Different wavelengths exciting portions of the eyes make me, and everyone else, see the different colours. The same goes for sound. Those were just two of the infinite examples. Here's a hypothetical example. Suppose nothing exists except a supernatural being called DOG. Now it decides to create a consciousness. Just a consciousness. It gives the consciousness my memories, and creates a 'virtual reality' such that the consciousness sees the world I see. It looks down and sees a hand, moves it believing to be his own. Can this consciousness tell if it is looking into a fake world ? Does it know that the body that he possesses is not his, but unreal ? 'Of course not,' you say. All this means that reality is not objective, but subjective. Drawing a parallel from the previous conclusion, I propose that similar to the consciousness , one of the things that defines reality is reason. Of course, you say, like cows fly.

OK then. Have another example. It's a thousand years into the future. The technology is high enough that living inside a simulation is possible. Now suppose a newborn infant is put into the simulation and allowed to mature. He is not allowed to contact the 'real' world. Will he be able to discern the 'fake' simulated world from the 'real' world? No, you say. So you agree with me. Now, suppose that the laws of the 'fake' world are different from the 'real' one. I say he will develop a sense and reasoning to suit his world. So by way of an example I showed you that even reasoning is not absolute. Of course, you may say, this was a particular example, a special case. You must understand that all this is speculation, and as I pointed out initially, it would be impossible to develop a proof.

So dear reader, do you understand that the question initially posed was trivial. Do you now feel that we may be 'actually' living in a simulation ?

Into The Darkness

Out of the darkness must come light
It will shine forth from deepest night
Into that darkness we now descend
Hopes crashed, dreams destroyed
With heavy hearts we trudge into the gloom
Yet some walk on laughing, for
Out of the darkness will come the light?
It will shine forth from deepest night.

Into the dark I take a candle
It lies unlit, for I lack a match
I have some thread and wax
Will you make one too?

Let us walk together into shadow
As all fires vanish about us
For only in that moment of greatest bleakness
Will every mind look inward and every eye see
The fire that always was within
When the world teeters on a knife's edge
All will release the fire within
And witness a blaze that never has been
Out of the darkness comes the light
It will shine forth in deepest night.

For that moment I carry my candle
Get yours, and together we shall walk into darkness
Laughing all the while.

- Siddharth

Through the Looking Glass

- Sarthak Parikh

The tree didn't look real. It didn't appear his own. It seemed out of *his* world. Yet it was pretty much there, to be seen, and be owned. It was one of the few things left which could be owned by many. Be shared, and not be fought upon. But it had ceased to acknowledge his presence. It had turned its branches away from him, and would do so again if he shifted to some other side. The leaves which had earlier breathed back oxygen to him, shined and scowled at him. The leaves which had given him life before, did not even care to give him death. He could see the trunk, and it was alive, he could swear on that, but it had ceased to make him alive. It was giving out its odour, no doubt. But he could no longer *see* that smell. He couldn't *sight* the sense of touch it was releasing. He could not *see* the bitter taste of the leaves any longer. He could not stand this. This was worse than losing sight. He threw his glasses off.

The view didn't improve. He thought. The tree seemed to be more than alive now. He sensed some life. But he could no longer be sure of that. Everything was not more certain than a blur. He saw *Scent*. Only he wasn't sure if it wasn't *Touch*. He could not even attest whether the brown was the brown of the edge of the branch or the straws making the thatch of the far-away hut.

It could only get worse. He quickly bent down and picked up his glasses. He gave one fast look at the bird chirping on one of the hidden branches, and without taking his eyes off, pursing his lips, he employed his glasses back in position. Cursing the clarity in the vision, he turned his back to the tree.

Large trees on the field shined back at him. The mountains had acquired sharp edges. But the edges went straight through him, without cutting him, even touching. These edges had some time back struck him hard across his face when he cared to look up at them, and tickled him, when he wouldn't, beckoning him. When he bent his head a little now to look at them over his glasses, he found them too blunt to be felt. He knew they were trying hard to send their voices over to his blemished eyes, and it made him feel happy. He was not lonely. They were there. Waiting for him to bare his eyes to them. Only, he knew it wouldn't help. Not in the long run. He still savoured the overture to the signalling of life back to him, and he didn't want to lose it. He had to be judicious on how he used his precious eyes on objects. The eyes, which he had trusted so blindly, now made him feel insecure.

When he got spectacles on his eyes, he knew from then on he was going to hate every sight in his life. He was going to wear them very sincerely, to see the world clearly, in focus. He knew he was going to take them off very often. He was going to avoid being prescribed a more powerful pair of glasses. But he was going to take them off. He was going to make sure he did not look through his bare eyes for a long time. He was going to try that in the hope that one day he would not depend on the lenses again. He was going to take them off very often. He knew he was going to keep wearing the glasses all his life. He knew he was going to over strain his eyes and get thicker glasses as he grew older. He knew all this and he was still going to go ahead and do all this. He was going to hate every bit of it. He was happy he had spectacles on at this moment. They made feel he was saving his eyes. They made him feel secure.

He chuckled. He was confused. There was no way out of it. But he didn't want to stay in.

I wish I could tell you more. How he fought. And did he succeed or not. But is there any point in that? Would it not be better if I let you envisage your own ending?

I wouldn't tell you what happened. He won. I didn't tell you anything. See you.

A Bad Son

I know...
your hopes lay in me
you gave me your love, your care
the soothing shade of your huge tree
But shameless I am
and never stepped back
from disregarding your belief.
I lie downtrodden
exactly where I should be
I lie in dust,
slow and untidy
fallen on my knees.
Yet you love me
your bad son
who always wanted to break free.
But I promise you my ma,
and my dad
in heaven, amongst stars
or wherever you might be
I will try to stand by your expectations
and move to the other end of this stormy sea.

- Achilles

Carnatic music - a glimpse..

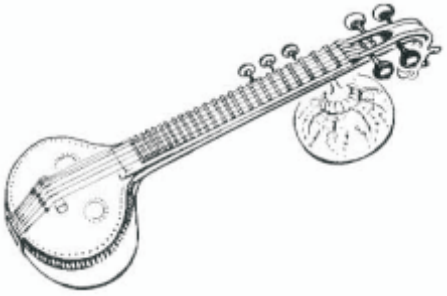
- P. Sruthi

Indian Classical Music - an aesthetic blend of the concepts of Raga and Tala- has held mankind spell-bound through ages. Tracing its origin to the Vedic times, it has made a undaunted journey, adapting itself to changing styles and interests, till today where the world of music is dominated by pop, rock, jazz, and likewise. Indian music, within its constraints, is vast and limitless evident from the fact that it still has (after centuries) immense scope for creativity and development.

More predominant in South India, Carnatic music has served as the best medium of expression and devotion.

Each raga is obtained from a unique combination of at least five of the 16 basic notes and connotes to a specific mood... a course that the music takes. Each raga is said to be in harmony with particular human and natural moods and hence, it adds beauty to the raga if rendered in its temporal context. Thus we have the concept of some ragas being delivered only during a particular time of the day. The raga Kalyani is said to be an 'evening raga' while Malayamarutam is considered as a 'morning raga'. Tala – a very essential aspect of Carnatic Music is the rhythm of the piece being delivered.

While raga organizes melody, tala organizes rhythm. A typical Carnatic concert comprises a vocalist, a veena and a mridangam. In case of a non-vocal concert, flute or veena are the leading instruments. In olden days, veena was the usual accompaniment in the vocal concerts. The Western version of the veena- the violin, has gained popularity. Any vocal concert nowadays is invariably accompanied by the violin. Sometimes, the charm does not entirely lie in the singer's voice but it is also the raga which determines whether a song appeals to the listener. The mridangam is a very indispensable part of a classical music performance. It provides the right 'beat'.



Though this classical art form has been sung through the ages, the most noteworthy period was when the trinity of Carnatic music – Saint Thyagaraja, Dikshitar, and Shyama Shastri ruled the world of South Indian Classical music. This was also the time – around the 17th century – when music and devotion went hand-in-hand. The compositions made during this golden age of Carnatic music have held generations of music-lovers and devotees in a trance. The meanings of the words and the sophistication in their arrangement are simply superb.

Now, any song rendered in a concert has two broad classifications – Kalpita and Manodharma. In kalpita, the performers sing/play the original composition. Manodharma is the part where the performers improvise on the already existing piece using their imagination and ingenuity, within the limits and rules of raga and tala.

The advent of Westernization has had its influence on Carnatic music as well. The very recent trend of fusion music has captured the fascination of the audience. It has also globalized this art form as our classical music is finding recognition in Western countries also. The likes of U.Srinivas have been attracting global audiences through their enthralling artistry. This way, it is gladdening and encouraging to find young college going Indians a common sight during classical concerts. In this respect, the remarkable ability of our indigenous artform to merge with the sounds of any instrument – Indian or Western is praise worthy. Within the constraints and formalisms of its content, Carnatic music has accommodated a large variety of adaptations and changes.

Given its variety, scope for creativity and the solace it offers, classical music has always been and will always be the best mode of expression and the most heartwarming form of meditation. To have one of the oldest, most versatile and limitless form of music as our own is indeed a matter of great pride. Our indigenous art form, I hope, in the coming years, will gather more crowds from the native land where it has originated.

The Birth of the Theory of Relativity

- Ashutosh Agnihotri

The philosophers of science are still debating the issue as to whether special relativity began with the famous 1905 paper of **Einstein** or whether it existed before in the works of **Lorentz** and **Poincare.** In fact, the notion of "corresponding states" contained in the 1904 paper of Lorentz in many ways anticipates relativity, while still clinging to the obsolescent notion of ether. However, there seems to be little disagreement with the assertion that **Einstein** was the almost single-handed creator of the theory of general relativity. But it can also be asserted that this theory has its roots in the far-reaching investigations of **G.F.B. Riemann;** in turn, **Riemann** was heavily inspired by the beautiful *"Disquisitiones"* of **Gauss**, a masterpiece, dealing with the differential geometry of curved surfaces. A central theme in the theory of general relativity is the notion that the presence of matter influences the geometry of space and that this cannot be considered Euclidean. If we look back we find that **Einstein** had predecessors who had strange, powerful hunches about what was to come. **Riemann** himself toyed briefly with the idea that real space was curved. The eminent physicist and physiologist **H. Helmholtz** (1821-1894) investigated the physical aspects of Riemann theory and put stringent limits, from astronomical evidence, on the curvature of space. The geometer **W. K. Clifford** (1845-1879), who invented Dirac algebras before **Dirac,** thought of matter as a sort of ripple on a curved space. Many of his ideas reappeared in general relativity. These attempts, no matter how brilliant, were obviously premature. Physicists lacked the idea of a space-time manifold and had not yet understood the central role of electrodynamics. A complete construction of a relativistic theory of gravitation was achieved only at the end of the First World War.

Even **Einstein** did not arrive easily at the final result and had to go through years of intellectual wanderings before writing down his field equations. Some of his dearest colleagues and friends even thought that he had "gone off", carried away by some crackpot fantasy. We can reasonably assume that he was interested in the equivalence principle as far back as 1911. When he returned from Prague to Zurich in 1912 he met **Marcel Grossman** at the ETH, Zurich and began studying Gaussian curvilinear coordinates and their generalizations. Through Grossman he became acquainted with the algorithm of absolute differential calculus, developed by the Italian mathematicians **Gregorio Ricci** and **Tullio Levi-Civita.** In fact, it is known that **Luigi Bianchi,** a most influential figure in Italian mathematics at that time, was thoroughly sceptical on the matter of absolute differential calculus, and that recognition of the work of **Levi-Civita** and **Ricci** came as a spin-off of relativity. After many unsatisfactory attempts, in 1916 eventually, the final version of the theory was ready, one year after **Karl Schwarzschild** found the isotropic solution which bears his name and which replaced the Newtonian potential. Finally the theory got its most spectacular attestation during a 1919 expedition to Prince Island, (in which the colossus of cosmology, **Arthur Eddington,** had participated), which confirmed the deflection of the light rays around the sun during an eclipse, as predicted by the theory. In the twenties the theory of general relativity was applied to cosmology. In his later years **Einstein** tried desperately to arrive at a unified theory of gravitation and electromagnetism. Although his work had a great philosophical and ideological impact on his contemporaries, the attempt was clearly premature. The vast increase in our knowledge and theoretical ideas has given a new life to these efforts again.

Hopefully, we'll come up with the unified theory soon !!!

Terror in Mumbai

Oh! That day when thou lively land
Fell to the terror of that devilish hand
Splashing blood as you hail and weep
Those dreadful deeds, on thou heart they sweep
As a blotting strain this day shall last
In the leaves of time, for the future's past
Oh! Those devilish men don't fall in the human breed
For not on love, but on terror they feed
What good they got, that know not I
What hearts they have, so numb and dry
For the moan of dying men didn't churn
The heart of these murderers, cold and wanton
Let a curse of bane befall these heartless beasts
Let the guilt of sin have their souls to feast
For the wrong they did, for the doom they craved
Aha! How harsh were those mourning cries
Of dying men, uttering their painful sighs
The innocent victims of this blighting play
Will remember the dread of this dusking day
Oh! You earth and heavens above
You all saw the fright of this woe
So, give us the strength to stand and face
And to crush these inhuman ways.

- Swetha Bhagwat

Broken beauty

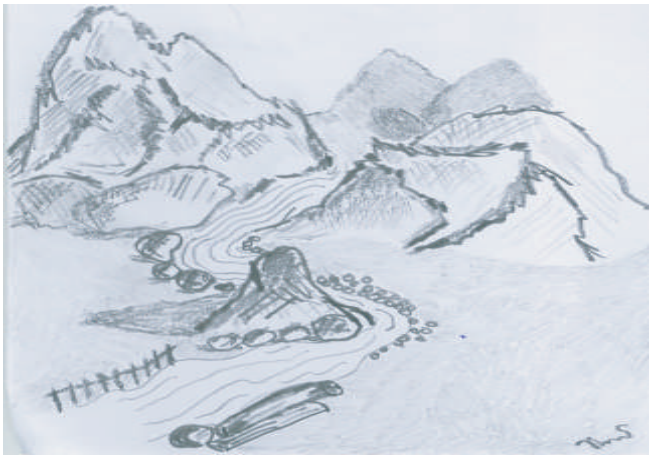
Spiraling thoughts turning inward,
Reaching readily to the relic undeterred,
"Beastly beauty", mocked an onlooker;
Secretly sapping my sanguine saunter,
Into my palpable palms it placed,
Perusing its prowess, pristine and puerile;
Crude and concave, a crass crevice;
Incoming illumination – iridescent, imprudent,
Looking through the limpid layer, lay I;
Transfixed at the truncated transparence;
Sucked into the vortex of hidden beauty,
Vestiges of a venturesome veracity,
Severed by serrated sides, I flinched,
Blood became banal, beauty its bait,
Distraught, Disturbed – I deftly deduced,
A transition of hands – enclosing the glass,
Presumed preciousness of life? – Precisely!

- Krithika Mohan

Flow

Black stains
Those deep crevices
In my brain
Is this the nemesis?
For the prolonged slumber
Where frozen – time stood…
To the mainland
It (Black) gradually floods
Against the ever growing chaos
I attempt a valiant row
Alas! I am left but with the only choice
Follow the flow…

- Lakshmi Priya M E



Ritual

To time entwined
Through the ritual, unending
In the eternal flow I am contained…
The ritual of Being.

- Lakshmi Priya M E

इतिहास परीक्षा

- सुमीत सिंह

इतिहास परीक्षा थी उस दिन, डर से हृदय धडकता था
जब से जागा सुबह तभी से, बायाँ नयन फडकता था.
जो उत्तर मैंने याद किए, उनमें से भी आधे याद हुए.
वह भी स्कूल पहुंचने तक, यादों में बरबाद हुए.
सीट दिखाई दी जो खाली, उस पर जाकर मैं बैठा.
था एक निरिक्षक कमरे में, आया झल्लाया-ऐंठा.
रे-रे तेरा ध्यान किधर, तू कर के आया देरी क्यों ?
तू यहाँ-कहाँ आ बैठा, उठ जा यह कुर्सी मेरी है.
मैं उचका एक उचके सा, मुझमें सीटों में मैंच हुआ.
टकरा-चकरा कर कहीं, एक कुर्सी द्वारा मैं कैच हुआ.
पर्चेपर मेरी नजर पडी, तो सारा बदन पसीना था.
फिर भी पर्चेसे डरा नहीं, वह मेरा ही तो सीना था.
पर्चे के बरगद पर मैंने, कलम कुल्हाडा दे मारा.
घंटे भर के अंदर, कर डाला प्रश्न का वारा-न्यारा.
अकबर था बाबर का बेटा, जो वायुयान से आया था.
उसने ही हिन्द-महासागर को अमरीका से मंगवाया था.
गौतम जो बुध्द हुए, गांधी जी के चेले थे.
दोनों ही बचपन में नेहरु के संग आँख-मिचोली खेले थे.
होटल का मैंनेजर था सम्राट अशोक, जो ताज महल में रहता था.
हे ! अंग्रेजों भारत छोडो वह लाल किले से कहता था.
सबको झांसा दे जाती, ऐसी थी झांसी की रानी.
अक्सर अशोक के होटल में, खाया करती थी वह बिरयानी.
ऐसे ही चुन-चुन कर, मैने प्रश्नों के पापड बेल दिए.
उत्तर का ऊँचा पहाड, टीचर की ओर ढकेल दिया.
टीचर जी बेचारे इतनी उँचाई पर कैसे चढ पाते.
लाचार पुराने चश्में से, इतिहास नया क्या पढ पाते.
मेरे इतिहास का भू:गोल हुआ
अब ऐसे में होना क्या था, मेरा तो नम्बर गोल हुआ.

सफ़र

- समीर परिहार

चलते चलते तन्हा यूही, इक ख्याल मन में आया है।
मैं अकेला हू यहाँ, या संग मेरे कोई आया है॥
मुड के देखा तो कोई न था
इस सफर मे साथ मेरे,
तुफानों मे जो थाम सके
ये काँपते हाथ मेरे
इन कॉपते हाथों को, मैंने बडा समझाया है
मैं अकेला हू यहाँ, या संग मेरे कोई आया है
कहते है जिन्दगी की राह में।
काँटो का बसेरा है॥
न चाँद की चाँदनी है।
न ही कोई सवेरा है॥
देख के ऐसी रात, मेरा दिल जरा घबराया है।
मैं अकेला हू यहाँ, या संग मेरे कोई आया है॥
हर गुजरा लम्हा
मुझे कुछ याद दिलाता है,
कभी कभी हँसाता है
तो कभी रुलाता है
इन बीते लम्हों की याद ने, मुझको बडा रुलाया है।
मैं अकेला हू यहाँ, या संग मेरे कोई आया है॥
थक के चूर है ये जिस्म
दिल में उठा एक दर्द है,
यहाँ की हवा भी होती
जाने क्यूँ इतनी सर्द है
मन्जिल पाने कि चाह ने, इस ठंडी हवा को भी गर्माया है।
मै अकेला हू यहाँ, या संग मेरे कोई आया है॥
निकला था ये सोच मैं
कि मन्जिल को पाऊंगा,
क्या पता था लौट के
फिर यहीं पर आऊंगा।
जाने कौन सा ख्याल, यहाँ फिर खींच के लाया है।
मैं अकेला हू यहाँ, या संग मेरे कोई आया है॥

भारत-पाक संबंध

- इति कपूर

१९४७ में हजारों क्रांतिकारियों के बलिदान के बाद जब हम आजाद हुए, तो इस अत्यन्त सुख के क्षण में समस्त भारतीयों को एक गहरा धक्का लगा जो असहनीय था और वह था भारत का विभाजन तथा पाक का निर्माण।

तभी से ही पाक की कुनीतियों और धर्म सापेक्षता तथा कश्मीर को पाने के नाकाम प्रयासों के कारण सदैव भारत व पाक के संबंध कटु रहे हैं। पाक सदैव भारत पर आक्रमण करता रहा और इसी आपसी द्वंद्व के फलस्वरुप आतंकवाद ने जन्म लिया जो आज अपनी चरण सीमा पर है। आतंकवादियों का जन्मदाता व पालनकर्ता पाकिस्तान अब खुद ही इसका दंश झेल रहा हैं।

चंद महीनों पूर्व जयपुर, बैंगलोर, हैदराबाद और मुम्बई में धमाकों की श्रृंखला बन गई। हर धमाके के पश्चात पाकिस्तान के तत्कालीन राष्ट्रपति परवेज मुशर्रफ हमेशा यही कहते थे कि अब भारत पाक सम्बन्ध सुधर रहे हैं। परंतु मेरे अनुसार इतने धमाकों के बाद किन्ही दो देशों के संबंध सुधरने की अपेक्षा बिगडते ही जाएँगे। इन्हे सुधारने के कई अथक प्रयास भी किए गये, जैसे- दिल्ली से लाहौर तक की एक बस चलाई गई थी। साथ ही पाकिस्तानी कलाकारों को भारत में प्रदर्शन की अनुमति देना, उन्हे भारतीय फिल्मों मे अभिनय करने का अवसर देना, ये सभी प्रयास किए गये थे ताकि मित्रता आगे बढ सके।

पर इन सभी प्रयासों के बाद भी कोई सकारात्मक सुधार देखने को नहीं मिला। अगर ऐसा ही चलता रहा तो युध्द की सम्भावना से इन्कार नहीं किया जा सकता। दोनों देश परमाणु सम्पन्न हैं। अतएव इस युध्द को परमाणु युध्द में बदलने में देर न लगेगी।

अत: इस युध्द के परिणाम कितने घातक हो सकते हैं इसका अनुमान भली-भाँति लगाया जा सकता हैं। ये सब पता होते हुए भी ये दोनों देश यदि एक दुसरे के दुश्मन बने ही रहेंगे तो पता नहीं भविष्य क्या होगा ? भारत माँ के दोनों पुत्र (भारत व पाक) जिनका पहले ही बँटवारा हो चुका है कहीं अपनी ही कुण्ठाओं और युध्दों की विभीषिका में ध्वस्त न हो जाएँ।

अत: दोनो देशों की सरकार को यथासंभव प्रयास करने चाहिए कि आपसी झगडों को खत्म कर एक बार फिर एकता व मित्रता के बन्धन में बँध जाएँ।

सप्तपर्णा

- मधुरेश सुमित

पीड़ तुम मेरे मन आना,
हाथों में ले विद हाला,
खूब पियूँ मादक उन्मक्त मैं,
तुम साकी, मन मधुशाला.

(१)

रुकते रुकते चल पडे मन,
ऐसी आशाओं की हाला,
और चलके रुक जाएँ जहाँ पर,
वहीं-वहीं हो मधुशाला.

(२)

जीवन असमंजस का प्याला
तम प्रकाश की मिश्रित हाला,
सबल विवेक, निर्बल विकार हों,
आशाएँ मेरी मधुशाला.

(३)

ओछल-साकी मत पिला अब
इतना कि होऊँ मतवाला,
सुध-बुध की है यहाँ चौकडी,
अन्तर्मन है मधुशाला.

(४)

नयना मेरे मधुघट हैं अब,
चिर उमंग चांदी का प्याला,
गरिमा की हाला प्रबोधिनी,
स्वर्णलता सी मधुशाला.

(५)

अधरों पर मृदुल मुस्कान
भर जाती है उर में हाला
मीठा लगता ये जग सारा
मीठी मेरी मेरी मधुशाला.

(६)

अपना स्नेह व्यक्त करूँ मैं,
इतने मेरे शब्द कहाँ है
स्वार्थहीन आसक्तीहीन और
शब्दहीन मेरी मधुशाला.

ट्रॅफिक जाम

- मो. नोमान

गर्मी के दिन हैं। धूप तेज है। सभी लोग अपने कामों में व्यस्त हैं। सडक पर भारी भीड है। अचानक देखते ही देखते जाम लग जाती है। एक दूसरे से आगे निकलने के चक्कर में सभी फँस जाते हैं। सभी परेशान।

इन जनाब को देखिये जो अभी किसी जॉब की असफल इन्टरव्यू दे कर आ रहे हैं, और इस जाम में आ फँसे। बगलवाली कार में वो अफसर है जिन्होंने उनका इन्टरव्यू लिया था। वैसे तो दोनों का दर्जा काफी अलग है, पर यहाँ पर सभी एक समान है। इस जाम में अमीर-गरीब सभी फँसे हैं। इधर थोडीसी जगह बनी नही कि दूसरे ने अपनी गाडी घुसा दी।

नतीजा टक्कर !..... अब लीजिये नये राग शुरू हो गये।

दोनों तरफ से गाडीयाँ आती जा रही हैं और जाम बढती जा रही है। परेशान हो कर कुछ लोग जाम के केंद्र की ओर जाते हैं, जाम और बढ जाती है। वहा पर एक गाडी, दूसरे के सामने टिकी है। पीछे जाना मुश्किल है बस इतनी सी बात। क्रेन से निकाल देते है, लेकिन क्रेन आएगी किस रास्ते से।

(गति-सीमा ४० कि.मी. प्रति घंटा.... क्या है यह !!)

अपनी गाडी बन्द रखें, पीछे वाले के धक्के से आगे बढ जायेंगे, लेकिन यह सोच कर सभी ने बन्द कर लिया तो !

तापमान बढता जा रहा है। सभी पसीने से तरबतर है। कुछ भी ख़ास काम नहीं हो रहा है लेकिन, फिर भी सभी व्यस्त है। आखिर कौन है जिसने यह जाम लगाया ? जाम की वजह से भीड है या भीड की वजह से जाम ?

आइये इस नजारे को कुछ ऊपर उठ के देखते हैं। आठ मन्जिली इमारत के छठी मन्जिल की खिडकी खुलती है, नीचे का नजारा देखने के बाद - ''क्या भारी जाम है ?'' और फिर थोडी सी मुस्कान के बाद वह अन्दर चला जाता है। (वह इस जाम में नही फँसा है)।

१२वी के एक छात्र ने इस नजारे को बहुत गौर से देखा। नतीजा —▶|— डायोड !

बिल्कुल, यह जाम एक डायोड की तरह है, रिवर्स बायसिंग में कुछ लीकेज करन्ट ही चल रहे है, जैसे आम लोग सडक के किनारे दोनों तरफ से गाडियाँ आती जा रही हैं और पोटेन्शियल बढती जा रही हैं, डिप्लेशन लेयर बढती जा रही है। जाम केन्द्र यानी जन्क्शन पर कुछ ऐसा ही नजारा हैं। ब्रेक-डाऊन का खतरा बना हुआ है, तोड-फोड, भगदड मच सकती है। तो इस जाम का समाधान है वोल्टेज कम करना अर्थात, आखिरी की गाडियों को हटाना।

रीसर्चर इस पर रीसर्च कर सकते है-ह्युमन-बिहैवियर, साऊन्ड-इफेक्ट, प्रदूषण, उर्जा-संरक्षण, केयोस।

अक्सर भगदड मच जाती है, इसके निवारण के लिये भगदड निवारक दस्ते का निर्माण कराया जाना चाहिए। इन दस्तों को ट्रेनिंग इस जाम से दी जा सकती हैं। साथ ही साथ कुछ विस्फोटकों की क्षमता भी मापी जा सकती हैं। (बेहतर परिणाम के लिये जाम केन्द्र में प्रयोग किया जाना चाहिए)

इस जाम को देख कर यह लगता है कि अमीर-गरीब सभी एक दर्जे में हैं। सभी एक साथ मिल कर काम में लगे हैं। जाति-धर्म, भेद-भाव का नामोनिशान तक नहीं हैं। लोकतन्त्र का असली नजारा यही देखने को मिलता है। हर किसी को बोलने का हक हैं।

''दर असल आजकल के राजनेताओं ने लोकतन्त्र को सडक पर ला दिया है।''..... 'जाम - भीड का, भीड के द्वारा, और भीड के लिये बना जाल है।

अब चूंकि इस जाम मे फँसना आम बात हो गई हैं तो क्यों न इस जाम को एंजोय किया जाए. दस बार 'जाम' बोलिये... 'मजा' आ गया.

'जाम' को 'जाम' समझकर पी ऽऽऽऽऽऽऽऽऽ

(प्रिन्टर ही जाम हो गया)

दुर्बीणीतून

- दर्शन जोशी

खगोलशास्त्र हे सर्वात प्राचीन शास्त्र असले तरी ह्या शास्त्राची अधिकांश प्रगती गेल्या ४०० वर्षांत झाली असे म्हटले तर ते चुकीचे ठरणार नाही. १६०९ साली गॅलिलीयोने खगोलशास्त्राच्या अभ्यासासाठी अवकाशाकडे दुर्बीण रोखण्याचे जे कार्य केले ते 'न भूतो न भविष्यति' असे होते. त्याच क्रांतिकारी कार्याच्या स्मरणार्थ २००९ हे वर्ष 'अंतरराष्ट्रीय खगोलशास्त्र वर्ष' म्हणून जगभर साजरे कले जात आहे.

दुर्बीणीचा शोध गॅलिलीयोने लावला नसून 'हॅन्स लेपरशे' याने लावला होता. पण दुर्बीणीबद्दल नुसते कुतूहल न बाळगता दुर्बीणीचा प्रथम वापर खगोलीय अभ्यासासाठी गॅलिलीयोने केला, या कार्यातून त्याची विज्ञाननिष्ठा झळकते.

शुक्राच्या कला, चंद्रावरची विवरं, गुरूचे उपग्रह, शनिच्या कड्या, सौरडाग अशी विविध खगोलीय दृश्ये गॅलिलीयोने आपल्या दुर्बीणीतून पाहिले व त्यांचा अभ्यास केला. दुर्बीणीतून आकाश निरीक्षणाचा जो महामार्ग गॅलिलीयोने शोधला त्यावर प्रवास करता करता गेल्या ४०० वर्षात खगोलशास्त्रज्ञांनी यशाचे अनेक टप्पे गाठले आहेत. मग ते सूर्यमालेच्या बाहेरील ग्रहांचा शोध लावणे असो वा विश्वाच्या उत्पत्तीचा अभ्यास करणे असो. एवढेच नव्हे तर चक्क अवकाशात दुर्बीण प्रस्थापित करण्याचा पराक्रमही संशोधकांनी केला आहे. आज राष्ट्रीय पातळीवर मोठ्यात मोठी दुर्बीण बनवण्याची चढाओढ चालू आहे. यावरुनच दुर्बीणीचा खगोलशास्त्रात वापर किती क्रांतीकारी आहे याची प्रचिती येते.

यापुढेही खगोलशास्त्रात अनेक महत्वाचे शोध लागतील. विश्वाचे रहस्य हळू हळू उलगडत जाईल. पण आज ४०० वर्षांचा इतिहास पहाताना, आपण अज्ञानाच्या दरीतून एवढे वर आलेलो जाणवताना अत्यानंद होतो.

खगोलशास्त्राला दुर्बीण रुपी अनमोल रत्न अर्पण करणारा 'विज्ञानाचा जनक' गॅलिलीयो गॅलिली याला आदरांजली म्हणून व दुर्बीणीतून आकाश दर्शनाच्या चौथ्या शताब्दी वर्षानिमित्त United Nations ने हे वर्ष 'आंतरराष्ट्रीय खगोलशास्त्र वर्ष' म्हणून जाहीर केले आहे. या निमित्ताने खगोलशास्त्राचा प्रचार व प्रसार करण्याचा संकल्प अनेक संशोधकांनी सोडला आहे व विविध उपक्रम ही राबविले जात आहेत. या वर्षभरात, जास्तीत जास्त लोकांना दुर्बीणीतून आकाश दर्शन घडविण्याचे प्रयत्न हौशी खगोलप्रेमी करीत आहेत.

ह्या भव्य महोत्सवात आपला हातभार लागावा असे आपणास वाटत असेल तर दुर्बीणीतून आकाश दर्शनाची संधी अजीबात सोडू नका व खगोलशास्त्राचा प्रचार शक्य तितक्या लोकांमध्ये करा ही विनंती.

खगोलशास्त्राबद्दल आपल्या प्रत्येकाच्या जागृकतेनेच ह्या पर्वणीची यशस्वी सांगता होईल असे मला वाटते.

पहाट

- पद्मश्री पाटील

प्रत्येक नवी पहाट एक स्वप्न घेऊन येते
दशदिशांना रंग उधळून देते
चला त्या रंगात दंग होऊ या
जीवनाला सत्याचा गंध देऊ या
उद्याच्या जगाला सामोरे जाऊ या

उत्तिष्ठत ! जाग्रत !

- कौस्तुभ देशपांडे

स्वामी विवेकानंद ! या भारतभूमीचा लाडका सुपुत्र ! हाच तो खरा सुपुत्र ज्याने हिंदूधर्म जाणला. हाच तो सुपुत्र ज्याने वेदांताचा परिपूर्ण अभ्यास करुन स्वदेशातच नव्हे तर विदेशांतही या तत्वज्ञानाचा प्रसार केला. शिकागोतील सर्वधर्म परिषद अतुलनीय वैचारिक सामर्थ्य व अमोघ वक्तृत्वाच्या जोरावर गाजवून संपूर्ण विश्वभर या हिंदुभूमीबद्दल आदराची भावना निर्माण करणारा हाच तो सुपुत्र ! हाच तो महान विरागी ज्याने त्याच्यासमोर पाश्चिमात्य देश, अखिल विलासांसह, नत असतांनाही मातृभूमीतील बांधवांच्या वेदना जाणल्या, संपूर्ण जीवन त्यांच्या उन्नतीसाठी व्यतीत केले.

स्वामी विवेकानंदांनी खऱ्या अर्थाने विश्वविजय केला. त्यांचे स्वप्न होते की ही भारभूमी सर्वार्थाने बलशाली बनेल; व वेदांत तत्वज्ञानाचा उपदेश सर्व जगताला करेल. त्यासाठी त्यांनी प्रत्येकाने 'मातृभूमी' या दैवताची पूजा करावी, असे सांगितले होते. आज स्वामीजींचा देहांत होऊन १०६ वर्षे लोटली आहेत. आज आपल्याला सर्वत्र आपापल्या देवांची पूजा करणारे हिंदू, मुस्लिम, ख्रिश्चन इत्यादी दिसतात. पण मनोभावे, सच्च्या दिलाने 'मातृभूमीपूजन' करतांना किती लोक दिसतात ? कोणत्याही देवतेचे पूजन फक्त मूर्ती किंवा प्रतिमेच्या पूजेने पूर्ण होत नाही. म्हणूनच मातृभूमीपूजनासाठी देखील आपली सर्व विचारशक्ती व कृतीशक्ती मातृभूमीच्या, अर्थात आपल्या बांधवांच्या, उन्नतीसाठी केंद्रित करणे आवश्यक आहे.

उजळती कोणी पसा अन् उजळती अंगण कुणी
उजळती कोणी घरे अन् उजळती नगरे कुणी।
त्रिभुवनाला उजळणारे प्रखर ते तेजोमणी
प्राणदायी जे प्रचोदक असती का ऐसे कुणी।।

आज आपल्या मातृभूला आपल्या वैचारिक व कृति-शक्तीच्या प्रभेने त्रिभुवन उजळून टाकू शकणाऱ्या तेजोमणींची गरज आहे. असे तेजोमणी, ज्यांनी अथक प्रयत्नांनी मन वज्राप्रमाणे व मनगट पोलादाप्रमाणे ताकदवान बनविले आहे. असे तेजोमणी, ज्यांनी परिपूर्ण अशा शाश्वत विचारांचे अध्ययन करून ते आचरणातही आणले आहेत. असे तेजोमणी, ज्यांनी 'मातृभूमी' हे दैवत हृदयात स्थापन केले आहे; व तिच्या सर्वांगीण प्रगतीसाठी स्वार्थत्याग करुन जे सदैव झटत आहेत.

जी जीवनपुष्पे सतेज नवरक्ताची
स्थापावा त्यांनी धर्म आत्म अर्पूनी
त्यानेच अर्चना होत राष्ट्रदेवाची

पण कुठे मिळतील असे 'तेजोमणी' ? संत नामदेव म्हणतात, ''प्रत्येक मनुष्यात ईश्वर वास करतो''. स्वामी विवेकानंद म्हणतात, "each soul is potentially divine" अर्थात, हे 'तेजोमणी' दुसरीकडे कुठेही नसून तुम्हा-आम्हा सर्वांमध्ये, प्रत्येकामध्ये दडलेले आहेत. प्रश्न आहे तो फक्त त्यांना शोधण्याचा, आत्मशोध घेण्याचा. एकदा का मनुष्याला स्वत:तील ईश्वराच्या अस्तित्वाची जाणीव (याला तुम्ही क्षमतांची जाणीव असेही म्हणू शकता) झाली की त्याचा 'तेजोमणी' बनण्याचा मार्ग अर्धा पार झाला असे समजावे. पुढील अर्धा भाग म्हणजे व्यक्तीमत्वविकसन. पण त्यासाठी सद्सद्विवेकबुद्धी सतत जागृत ठेवणे आवश्यक आहे.

सर्वप्रथम आपले ध्येय निश्चित केले पाहिजे. 'Low aim is a crime.' त्यामुळे ध्येय नेहमी विशाल व उदात्त असले पाहिजे. दुर्दम्य इच्छाशक्ती व अथक प्रयत्न या दोन्हींच्या सहाय्याने, संघटनेच्या माध्यमातून या ध्येयाकडे नेहमी चालत राहिले पाहिजे.

स्वामी विवेकानंदाचा युवाशक्तीवर खूप विश्वास होता. त्यांनी नेहमी युवा वर्गाला राष्ट्रार्थ भव्य कृती करण्यासाठी प्रोत्साहित केले. आज आपल्या राष्ट्रासमोर समस्यांचा अथांग सागर पसरला आहे. देशाची ही स्थिती फक्त आपला युवा वर्गच बदलू शकतो. कारण युवा वर्गाचे विचार स्वतंत्र, गुलामगिरीचा पगडा नसलेले व विजिगीषू आहेत. कोणत्याही कार्यासाठी झोकून देण्याला लागणारी शरीरिक व मानसिक क्षमता आपल्यात आहे.

नव्या युगाचे पाईक आम्ही, तारे नवक्षितिजावरचे
निजरूधिराजी आण वाहूनी, रूप पालटू देशाचे

पण याच क्षमतांचा गैरवापर करून या देशाचे रुपांतर नरकातही होऊ शकते. आपल्यापुढे आज दोन पर्याय आहेत. एकतर स्वामीजींनी दाखविलेल्या मार्गावर चालत, आपल्या क्षमता व कुवतींचा पुरेपूर वापर करून, 'मातृभूमीपूजन' करणे. अन्यथा स्वामीजींना खोटे सिध्द करून त्यांचे स्वप्न धुळीस मिळवणे. निर्णय आपल्या प्रत्येकाला घ्यायचा आहे. प्रखर 'तेजोमणी' अथवा रस्त्याकडेचा निश्चल, निस्तेज दगड ! जाणिवेच्या कक्षा रुंदावून समाजाच्या सर्व स्तरांतील बांधवांच्या प्रगतीसाठी प्रयत्न करत राहणे अथवा स्वामीजींचा विश्वासघात करणे ! तुमचा निर्णय काहीही असो पण एकदा, किमान एकदा, त्या महापुरूषाचे, महात्म्याचे चित्र पहा. त्या तेजस्वी डोळ्यांमधील वीज तुम्हाला एकच गोष्ट सांगेल -

''उत्तिष्ठत ! जाग्रत ! प्राप्यवरान् निबोधत !''
''उठा ! जागे व्हा ! ध्येयप्राप्तीशिवाय थांबू नका !''

हसण्यात खरोखर जग जगते !

- मनिषा खरात

सध्याचे युग हे माहिती-तंत्रज्ञानाचे युग आहे असे आपण म्हणतो. पण जसजशी माहिती-तंत्रज्ञानात प्रगती होत आहे, नवनविन यंत्र-सामग्री, सुखसुविधा निर्माण होत आहेत, तसतसा माणुसही यांत्रिक बनत चालला आहे. सारी सुखे पायाशी लोळण घेत असतानाही तो कोठेतरी मन:स्वास्थ्य हरवून बसलेला, अस्वस्थ आणि हताश दिसून येतो. स्पर्धेत टिकून राहण्यासाठी त्याची सारी जीवघेणी, केविलवाणी धडपड चाललेली आहे. ह्या सर्व चक्रात तो स्वत:पूर्णपणे अडकलेला तर आहेच, परंतु त्याच्याबरोबर छोट्या, निरागस बाल-गोपाळांनाही त्याने त्यात अडकवून टाकलेले आहे. आपली मुले प्रत्येक स्पर्धेत अव्वल आलीच पाहिजेत, असा त्याचा अट्टाहास असतो. त्यात भरीस भर म्हणजे टिव्हीवर अहोरात्र चालणारे रिऍलिटी शोज; त्यात जिंकण्यासाठी चाललेली चिमुरड्यांची केविलवाणी धडपड पाहून ती सारी आपले बालपण विसरून पोक्त झाल्यासारखी वाटतात. बालपणात दंगामस्ती करायची असते, स्वछंदीपणे हूंदडायचे असते, हे जणू त्यांना ठाऊकच नाही आणि मोठ्यांना त्यांच्याकडे लक्ष द्यायला वेळ नाही. पैसा अमाप असूनही त्यामागे धावणे म्हणजेच फक्त आयुष्य अशी त्यांची गत होऊन बसलेली आहे. काही महाशय तर ऑफिसबरोबर घरीही काम घेऊन बसतात; हेही नसे थोडके म्हणून की काय, प्रवासातही त्यांचा लॅपटॉप नाहीतर फोन असा कार्यक्रम चालू असतो. अरे निदान प्रवासाततरी निसर्गाचा मनमुराद आनंद लुटा, इतरांशी गप्पा मारा, मनमुरादपणे हसा आणि दुसऱ्यांनाही विनोद ऐकवून हसवा. पण नाही - 'आपण भले आणि आपले काम भले' त्यांना हे कळत नाही की, ही अशी जीवनशैली अनेक शारिरीक तसेच मानसिक रोगांना निमंत्रण देते. ताणतणावाखाली जगताना आयुष्यातील कितीतरी अनमोल सोनेरी क्षण हरवतात पण, सुखाच्या ह्या मृगजळाच्या मागे कितीही धावले तरी ते हाती लागत नाही.

अशा वेळेला एक अनमोल ठेवा, आजीच्या बटव्यातील औषधाप्रमाणे असणारा एक रामबाण इलाज, आपल्या मदतीला धावून येतो - तो म्हणजे हसणे ! करुन तर बघा, जादूची छडी फिरवल्याप्रमाणे तुमचे सारे आयुष्य बदलून जाईल. आयुष्यातील दु:खाकडे सकारात्मक नजरेतून पाहण्याचा दृष्टीकोन मिळेल.

हसण्याचा महिमा तर काय वर्णावा ? बाबा जेव्हा थकून-भागून घरी येतात तेव्हा आपल्या लाडक्यांच्या झोपेतल्या निरागस हास्याला पाहून सारा थकवा विसरून जातात. रांगेत ताटकळत उभा राहून एखादा भक्त जेव्हा आपल्या भगवंताचे दर्शन घेतो, तेव्हा भगवंताच्या मुखावरील स्मित हास्य पाहून त्या भक्ताची तर ब्रम्हानंदी टाळीच वाजते ! प्रियकरही आपल्या प्रेयसीच्या हास्याची (कधीकधी खोटी का असेना) तारीफ केल्यावाचून राहत नाही; त्यावर प्रेयसी अशी लाजवाब लाजते की व्वा ! क्या बात है ! तर अशा ह्या हसण्यावरती कविता झाल्या नसतील तर नवलच;

लाजून हासणे अन् हासून ते पहाणे,
मी ओळखून आहे, सारे तुझे बहाणे.

हिंदी चित्रपटसृष्टीही ह्यापासून काही दूर राहिलेली नाही. खुद्द अभिनयसम्राटही एका चित्रपटातल्या गाण्यात सांगून गेला की,

रोते हुए आते है सब, हसता हुआ जो जायेगा,
वो मुकद्दर का सिकंदर, जानेमन कहलाएगा।

त्याने तर हसत-हसत जाणाऱ्याला सर्व जगाला जिंकाणाऱ्या सिकंदराचीच उपमा दिली आहे.

मधुबालाच्या हास्यावरती तर कितीतरी पिढ्या फिदा झाल्या. माधुरी दिक्षितचे हास्य ही कितीतरी तरुणांचे काळिज खलास करून टाकते. कॉमेडी चित्रपटांचीतर कोणत्याही काळात चलती असते.

जगविख्यात कवी शेक्सपिअरने एकेठिकाणी असे म्हटलेले आहे की,

Don't worry !
Because if you are worried,
you get a wrinkle, so why don't
you smile and get a dimple,
always smile and be happy.

तर आता तुम्हीच ठरवायचे की, आयुष्य हे रडत-खडत जगायचे की हसत-खेळत. पण आपले दुर्दैव हे की हसण्यासाठी आपल्याला हास्यक्लबचा आधार घ्यावा लागतो. टि.व्ही. वरही

अनेक हास्य शो सुरू आहेत. पण त्यातल्या त्यातही चांगली गोष्टी ही की, त्यानिमित्ताने का होईना, माणुस हास्याचा जवळ चालला आहे. मध्यंतरी कोठेतरी वाचनात आले की माणुस जेव्हा प्रचंड रागवतो तेव्हा जेवढी शक्ती वाया जाते, तेवढी शक्ती दिवसभर श्रम करुन वापरली जाते त्यापेक्षा कितीतरीपट अधिक असते. एवढी शक्ती केवळ एवढ्याशा ताणाने वाया जाते.

म्हणूनच आता 'हसा आणि हसवा' असेच म्हणावे लागेल. चला तर मग, आपण सारे मिळून ह्या नविन वर्षात एक संकल्प करुया, न मोडण्यासाठी (कारण बऱ्याचदा संकल्प हे पुरे न करण्यासाठीच केले जातात) नविन वर्षात भरपूर हसायचे, हास्याची खसखस इतरांच्या आयुष्यातही पिकवायची. निरोगी आणि निखळ, आनंदी जीवन जगायचे. चला तर मग...

विजयी

- जागृती पट्टद्कल

दाटला आहे सर्वत्र अंधकार,
काळ्याहुनही काळा तो,
आशेच्या अंकुरास जडलेला विकार.

सुसाट दिशाहीन वाहतो आहे वारा,
भरकटला आहे तो ही,
हवा त्यालाही प्रकाशाचा आसरा.

दूरवर जळत आहेत काही अंधाराचे कण,
एकटेच आहेत ते,
भोगत आहेत शेवटचे तेजस्वी क्षण.

झुंजते आहे एकाकी एक पणती,
भेदरलेला वारा तो,
विझवू पाहतो आहे ती एकमेव दिप्ती.

सामर्थ्य तिचे नाही असिमीत,
कुणी सांगावे,
विझेलही पुढच्याच क्षणी... कदाचित.

परी हरणार म्हणून लढणे तिने सोडले नाही,
विझली आता जरी,
जाळले आहेत तिने अंधाराचे कण नाही.

थोपवला अंधार, केले निर्माण प्रकाशाचे वलय,
लुप्त काळात जरी ती,
सदाकाळासाठी तीच अपराजयी, तिचाच अंतिम विजय.

आयुष्य

- पद्मश्री पाटील

जगण्यासाठी सूर गवसला
की सूरासाठी जीवन जगलो
जगण्यासाठी, सूरासाठी मी
आयुष्यभर भटकलो....
सगळेच चालतात त्या रस्त्यावरुन
मी ही चालत गेलो
कधी अडखळतो, कधी पडलो
पण जगण्यासाठी, सूरासाठी मी आयुष्यभर भटकलो....
मला वाटले सूर गवसला
की सूरासाठी जीवन जगलो
शेवटी मी एकटाच राहिलो...
आयुष्यभर भटकलो....

रेष

- पद्मश्री पाटील

तुझ्या माझ्यात असतो दुवा

फक्त एका रेषेचा...

रेष ती रेषच असते

तिला काय माहित कसं थांबावं

उभं की आडवं...

गोष्ट सगळ्यांची

- नर्मदा खरे,
प्राध्यापक, जीवशास्त्र विभाग

तुमच्यापैकी प्रत्येकाला ही पुढची गोष्ट माहित आहे.

नोहाची गोष्ट :

शेकडो वर्षांपूर्वी पृथ्वीतलावर पाप फार वाढले. देवाने विचार केला की एक मोठा पूर अणून हे सर्व एका झटक्यात धुवून टाकावं. मग तो गेला 'नोहा'कडे आणि त्याला एक नौका बांधायला सांगितली. नोहाने स्वत:चं कुटुंब आणि प्रत्येक जातीच्या जीवांचे एकेक नर आणि मादी मावतील एवढी नौका बांधली. पूर आला तेव्हा बाकी सर्व सृष्टी नष्ट झाली. पूर ओसरल्यानंतर नौकेतले वाचलेले जीव बाहेर पडले आणि त्यांनी पूर्ण जग नव्याने वसवले.

ही गोष्ट वाचून काही जणांना पुढची गोष्ट आठवण्याची शक्यता आहे.

मनूची गोष्ट :

पृथ्वीवर 'मनू' नावाचा माणूस राहात होता. एक दिवस पाण्याने हात धुवत असताना त्याच्या ओंजळीत एक इवलासा मासा आला.

मासा मनूला म्हणाला, ''मला एका कळशीत ठेवून माझी काळजी घे. कळशीत मी मावेनासा झालो, की मला तळ्यात नेऊन सोड. तळ्यात जेव्हा मी मावेनासा होईन, तेव्हा मला समुद्रात दे सोडून. असं जर तू केलंस, तर मी भविष्यात तुझ्या उपयोगी पडेन.''

मनूने माशाच्या म्हणण्याप्रमाणे केलं, आणि देवांनी जेव्हा पूर आणून पृथ्वी पापरहित करण्याचं ठरवलं, तेव्हा माशाने ही गोष्ट मनूला कळवली. माशाच्याच सल्ल्यानं मनूने एक मोठं जहाज बांधलं. पूर आला तेव्हा मनू आणि इतर प्राणी त्या जहाजात चढले आणि मनूने एका भक्कम दोराने ते जहाज माशाच्या कपाळावरच्या शिंगाला (?) बांधले. माशाने मग जहाज सुखरूप उत्तरेकडच्या पर्वतावर आणून सोडले. पूर उतरल्यावर मनूने आपल्या संततीने जग पुन: वसवले.

ह्या वरच्या दोन्ही गोष्टी ऐकून ज्यांना ही पुढची गोष्ट आठवेल, त्यांना माझा सलाम.

उत्नापश्निमची गोष्ट :

ख्रिस्तपूर्व २६०० च्या आसपास 'सुमेर' देशात एक 'गिलगमेश' नावाचा अत्यंत शूर राजा राज्य करत होता. त्याची सगळ्यात मोठी महत्वकांक्षा होती अमरत्व प्राप्त करण्याची. ही इच्छा पूर्ण कशी करता येईल ह्याविषयी सल्ला मागण्यासाठी तो गेला जगातल्या एकमेव अमर माणसाकडे 'उत्नापश्निम' कडे.

उत्नापश्निम त्याला म्हणाला, ''अरे, माझी गोष्टच निराळी. अनेक वर्षांपूर्वी युफ्राटीस नदीच्या काठावर देवांची एक गुप्त सभा भरली. मानवाच्या वाढत्या पापी प्रवृत्तींवर त्यांनी तिथे बरीच चर्चा केली आणि असं ठरवलं, की एक मोठा पूर आणून पृथ्वीवरचे माणसासकट सर्व जीव नष्ट करावेत. एका देवाला ही कल्पना पसंत न पडून त्यानं मला हा निर्णय सांगितला. त्याच्या सांगण्यावरून मी एक मोठी नाव बांधली आणि पूर येण्याची चिन्हं दिसताच माझे कुटुंब आणि सर्व जीवांचे बीज त्या नौकेत भरुन त्यांना वाचवले. नंतर आलेल्या पूराचे रौद्र रूप पाहून स्वत: देवही घाबरले आणि पश्चाताप पावले. सात दिवस आणि सात रात्री चाललेला तो प्रलय ओसरल्यावर जेव्हा त्यांना आम्ही काही जणं वाचल्याचं कळलं, तेव्हा त्यांनी खूष होऊन मला त्यांच्यासारखं अमरत्व प्रदान केलं.''

ह्यातील नोहाची गोष्ट बायबलच्या ख्रिस्तपूर्व भागातली - Old testament मधली आहे, तर मनूची कथा हिंदू धर्मग्रंथामधे सापडते. उत्नापश्निमची गोष्ट इराक देशात चाललेल्या एका उत्खननात सापडलेल्या 'क्यूनिफॉर्म' लिपीत कोरलेल्या काही फरशांवर पुरातत्ववेत्त्यांना सापडली. आज युध्दाने हैराण झालेल्या टायग्रिस आणि युफ्राटिसच्या ह्या खोऱ्यात हजारो वर्षांपूर्वी मानवी संस्कृतीचं एक बीज फोफावलं. 'मेसॉपोटेमिया', 'ॲसिरिया' ही नाव तुम्ही ऐकली असतील. जगातल्या पहिल्या शहरांपैकी असलेलं 'निनेवे' (Nineveh) हे शहर मातीखाली गाडलं गेलेल सापडलं. ह्या शहराच्या उत्खननाच्यावेळी तिथला ॲसिरियन राजा 'आशुर्बानिपाल' ह्याचं विलक्षण ग्रंथालय सापडलं. त्या काळात राजवाड्यात होणारा दिवसाचा खर्च, किराण्याची खरेदी, नोकरांचे पगार ह्या सगळ्यांचा क्यूनिफॉर्म लिपीतल्या याद्या, त्या काळात वापरण्यात येणारी औषधं, जादू-मंत्र, शब्दग्रंथ ह्या सगळ्यां- बरोबरच जगातली पहिली गोष्ट - पहिलं वाङ्मय - हे ह्या ग्रंथालयात

सापडलं. बारा मातीच्या फरशांवर कोरलेली'The epic of Giligamesh ' ही राजा गिलगमेश ह्याची साहसकथा आहे. ह्या कथेचा शेवटचा भाग म्हणजेच उत्नापश्तिमनी गिलगमेश राजाला सांगितलेली ही 'पूरकथा'.

तर.. मनूची कथा भारतखंडातली आणि इतर दोन ह्या मध्य आशिया खंडातल्या. थोड्याफार फरकाने चीन, इजिप्त, ग्रीस आणि रेड इंडिअयन संस्कृतींमधेही 'पूरकथा' सापडते. इतक्या दूरदूर पसरलेल्या देशांमधे, इतक्या भिन्न संस्कृतीमध्ये उदयाला आलेल्या ह्या कथा इतक्या सारख्या कशा ?

हे कोडं सोडवण्यासाठी भूगर्भशास्त्रज्ञांनी पृथ्वीवरील जमीन आणि समुद्र ह्यांच्या वेगवेगळ्या भागातील मातीचा अभ्यास केला. त्यांनी असं सिध्द केलं, की सर्व जग व्यापेल असा पूर किंवा प्रलय पृथ्वीवर मानवप्राण्याचे आगमन झाल्यानंतर झालेला नाही. ह्याचा अर्थ, ह्या पूरकथा एकाच पूराच्या नसाव्यात. मग त्यांच्या समानतेची कारणं काय असावीत? अनेक 'थिअऱ्या' आहेत, त्यातल्या दोनच इथे देते :

दैवी प्रकोप आणि सर्जनशील लेखक :

ह्या गोष्टी लिहिल्या/रचल्या गेल्या तेव्हा माणसं नुकतीच एकत्र येऊन समाज घडवू लागली होती. जवळपास पाणी आणि सुपीक जमीन बघून वसाहती वसू लागल्या होत्या. ईजिप्त मध्ये नाईल, मध्य आशियात टायग्रिस आणि युफ्राटीस, भारतात सिंधू, सरस्वती, गंगा ह्या नद्यांच्या काठी शहरं वसली. ह्या सर्व नद्या त्यांच्या वेळोवेळी येणाऱ्या पूरांसाठी आत्ता-आत्तापर्यंत प्रसिद्ध होत्या. प्राचीन काळात ह्या पूरांमुळे बरीच हानी होत असणार. निसर्गाच्या प्रत्येक टोकाच्या वर्तनाला 'दैवी प्रकोप' समजणाऱ्या त्या काळात अशाच एखाद्या विशेष हानीकारक, विशेष भीतीदायक पूराच्या अनुभवानंतर एखाद्या कल्पक कथाकाराने 'नोहाची नौका' किंवा 'मनूचा मासा' अशी गोष्ट रचली असेल का ?

पण 'नेमेचि येतो' असा हा पूर नव्हता आणि तो अचानकही आला नव्हता. आपल्या तीनही कथानायकांना भल्यामोठ्या बोटी बांधायला वेळ मिळालेला दिसतो. म्हणूनच ही फक्त कविकल्पना वाटत नाही. आता ही पुढची, माझी जास्त आवडती, कल्पना बघा.

भूकंप किंवा त्सुनामी ?

जगाच्या नकाशात काही चारही बाजूंनी जमिनीने घेरलेले 'समुद्र' तुम्हाला दिसतील; 'कॅस्पियन', 'आराल', 'काळा समुद्र' असे. तर, भूगर्भशास्त्रज्ञांचा असा दावा आहे की ह्यातील काही, जसा टर्की देशाजवळचा 'काळा समुद्र' एकेवेळी गोड्या पाण्याने भरलेले होते. आता कल्पना करा, सर्व बाजूंनी डोंगरांनी वेढलेला हा गोड्या पाण्याचा तलाव. त्याच्या भोवती छान, सुपीक जमीन. काठावरती वसलेली छोटी-छोटी खेडी, शेतकरी, गराखी. डोंगराच्या ओंजळीत असलेला हा तलाव समुद्रसपाटीच्या अनेक फूट खाली होता व डोंगराच्या पलिकडे, दक्षिणेला होता समुद्र. एक दिवस हा बाहेरचा समुद्र डोंगराच्या कपारींमधून आत झिरपू लागला. कारण काय असू शकतात ? भूकंप ? त्सुनामी ? ह्या दोन्हीही नैसर्गिक प्रकोपाची आपल्याला आजही चांगलीच माहिती/अनुभव आहे. तर, भूकंपाने डोंगरात पडलेल्या भेगा, त्यांच्यावर बाहेरून आदळणाऱ्या वेगवान लाटा, ह्या सगळ्यांचा एकत्रित परिणाम म्हणजे समुद्राचं खारं पाणी दिवसेंदिवस वेगाने आत येऊन, गोड्या पाण्याच्या तलावाला मिळून त्यातल्या पाण्याची पातळी वाढू लागली. शेतकरी घाईघाईने आपले धान्य, गुरं, कुटुंबीय आपापल्या बोटींवर लादू लागले. भराभर वाढणाऱ्या पाण्यामुळे ज्यांच्या नावा मोठ्या आणि मजबूत होत्या, ते तेवढे वाचले आणि दरीतून बाहेर पडले.

पूरातून बचावलेले हे लोक बाहेर येऊन पांगले आणि आपापल्या वाटेने जगभर पसरले. त्यांच्याबरोबर त्यांची गोष्ट पसरली; त्यांनी सागितली, त्यांच्या पुढच्या पिढ्यांनी सांगितली, त्यांच्या शेजाऱ्या-पाजाऱ्यांनी ती सांगितली. पुढच्या वर्षांमध्ये तिच्यात बदल झाले, माणसागणिक भर घातली गेली. अनावश्यक भाग गाळले गेले. मग तिच्यात देवाचा शिरकाव झाला. पुण्यवंतांचा विजय झाला. पापी लोकांना शिक्षा झाली. गोष्ट सगळ्यांची झाली.

खरं काय झालं हे कोण सांगणार ? चारेक हजार वर्षांपूर्वीची घटना, तिची केव्हाच दंतकथा झाली. पण प्रत्येकाचे दंतकथेकडे बघण्याचे तरीके निराळे असतात. काहीजण तिचा शब्दश: अर्थ घेतात तर काही त्यात रुपकं शोधतात. एक मात्र खरं - ह्या प्राचीन गोष्टींवरची भडक चमत्कारांची आवरणं काढून टाकली तर उघड होणारं सत्य हे जास्तच सुरस व थक्क करणारं असु शकतं. असं करताना आजच्या समाजाची, त्यातल्या प्रथांची मुळं सापडतातच, पण डोळसपणे बघणाऱ्याल्या ह्या दंतकथा, पुराणकथांमधून समाजाच्या बदलती मूल्ये, पाप-पुण्य, सत्कृत्य-दुष्कृत्य मोजण्याची काळाबरोबर बदलणारी पट्टी ही दिसेल. जगातल्या प्रत्येक समाजात सांगितल्या जाणाऱ्या पुरातन कथा एकमेकांशी ताडून पहायलाही मजा येईल.

नरखेडचा रॉबिनहुड

- सुशांत मोरे

''जय जवान, जय किसान'' किंवा ''गरिबी हटाओ'' या माजी पंतप्रधानांच्या घोषणा आता हवेत विरु लागल्या आहेत. देशाचा कणा असणारा शेतकरी आज विविध समस्यांनी ग्रासला आहे. त्यातूनच तो आत्महत्येचा मार्ग पत्करत आहे. गेल्या दशकात विदर्भात दहा हजारांहून अधिक शेतकऱ्यांनी आत्महत्या केल्या आहेत.

ही कथा अशा भूमिपुत्रांस व त्यांच्या आत्महत्यांच्या दाहात होरपळणाऱ्या त्यांच्या कुटुंबियांस अर्पण.

नरखेड, जि. अमरावती, महाराष्ट्र. संध्याकाळची वेळ. रमेश देशमुख आपल्या घराच्या भिंतीला टेकून बसला होता. आज तो खूपच उदास होता. त्याचे कारण ही तसेच होते. याच तारखेला ५ वर्षांपूर्वी म्हणजे २५ जुलै २००३ रोजी त्याच्या बाबांनी आत्महत्या केली होती. आज बसल्या जागी त्याला त्याचा भूतकाळ आठवत होता.

आत्माराम देशमुख. विदर्भातील एक कापूस उत्पादक. खाऊन पिऊन सुखी असलेले असे त्यांचे कुटुंब. त्यांना दोन मुले होती. महेश आणि रमेश. मोठा मुलगा हा नागपूरला वसतिगृहामध्ये राहून शिक्षण घेत होता. आत्माराम यांना त्याच्याकडून खुप अपेक्षा होत्या. ते दर महिन्याला त्याच्यासाठी दोनशे रुपये पाठवत.

पण थोड्याच दिवसात नशीबाचे फासे उलटे पडू लागले. आत्माराम यांच्या शेतात सातत्याने कमी उत्पादन होऊ लागले. रासायनिक खतांचा, किटकनाशकांचा शेत जमिनीवर विपरीत परिणाम होऊ लागला. महागड्या किंमतीला घेतलेली बियाणी कुचकामी ठरू लागली. त्यांच्यासाठी घेतलेले कर्ज मात्र डोईजड झाले. बँकेची माणसे दर आठवड्याला घरी येऊ लागली. सावकार उसने घेतलेले पैसे परत मिळवण्यासाठी दमदाटी करु लागला. देशमुख कुटुंबाची परिस्थिती दयनीय झाली. आत्मारामांची पत्नी मोलमजुरी करू लागली. त्यांना मोठ्या मुलाला पैसे पाठविणे अशक्य झाले. कुटुंबाची चाललेली फरफट स्वाभिमानी आत्मारामांना पाहवेना.

एक दिवस नेहमीप्रमाणे आत्माराम दुपारी शेतावर गेले होते. संध्याकाळी उशीर झाला तरी ते घरी परत आले नाहीत म्हणून आईने रमेशला शेतावर पाठविले. रमेश गेला तेव्हा त्याने पाहिले, आपले बाबा शेतातच पडले आहेत. त्याने त्यांना स्पर्श केला. त्यांचा हात थंड पडला होता. बाजूला किटकनाशकाची आदल्याच दिवशी विकत घेतलेली बाटली पडली होती. ती अर्धी रिकामी झाली होती. त्याच्या आईला हे समजताच ती दु:खाने आक्रोश करू लागली. तिच्यावर दु:खाचा जणू डोंगरच कोसळला होता.

रमेश आणि त्याची आई मोलमजुरी करू लागले. तरी देखील दोन वेळेला जेवता येईल एवढे कमविणे देखील अवघड झाले होते. त्यांची सारी शेतजमीन बँकेने ताब्यात घेतली. शेजारी-पाजारी मदत मागणे देखील शक्य नव्हते. अपुरे उत्पादन, कर्जबाजारीपणा या सारख्या समस्यांनी साऱ्या गावालाच ग्रासले होते.

अतिश्रम करून रमेशच्या आईची प्रकृती ढासळत गेली. तिला फार काळ संसाराचा गाढा ओढवेना. एक दिवस ती देखील इहलोक सोडून निघून गेली. आई गेली त्यावेळी रमेश रडला नाही. त्याचे मन एकप्रकारे साऱ्या दु:खांना बधिर झाले होते. त्याला आपले म्हणावे असे आता कुणी राहिले नव्हते. त्याचा मोठा भाऊ महेश त्याला बाबांच्या अंत्यसंस्काराच्या वेळी भेटला होता. आईच्या निधनाची बातमी गाववाल्यांनी महेशला कळवण्याचा प्रयत्न केला. तेव्हा त्यांना समजले की महेश पुढच्या शिक्षणासाठी पुण्याला गेला आहे. रमेशला बऱ्याचवेळा वाटे की आपला भाऊ आपल्याला कधी भेटेल ? निदान त्याचे एखादे पत्र तरी येईल पण तसे कधी झाले नाही.

रमेश मजुरी करत होता. दिवस ढकलत होता. एकदा त्याला बातमी मिळाली की मुंबईत कुठल्यातरी मॉलमध्ये सुरक्षारक्षकाच्या भरतीसाठी गावातील काही मुले जात आहेत. रमेशला वाटले, आपणही जावे. नशीब आजमावावे. थोडेफार पैसे घेऊन तो निघाला. पण तिथेदेखील निराशाच त्याच्या पदरी पडली. रमेशचे शिक्षण जेमतेम इयत्ता सहावीपर्यंतच झाले होते. इंग्रजी लिहिता-वाचता न येण्याच्या कारणावरून त्याला प्रवेश नाकारला गेला. तो हताश झाला. पहिल्यांदाच तो गावाच्या बाहेर आणि ते ही इतक्या मोठ्या शहरात आला होता. तो जिथे आला होता तो मॉल त्याने न्याहाळला. सगळीकडे सुबत्ता नांदत असल्याचे त्याला आढळले. तेथील सर्व माणसे मजेत होती. चैन करत होती. त्याला खुप भूक लागल्यामुळे तो तिथल्या उपहारगृहात गेला. पण त्याच्या खिशाला परवडेल असे काहीच मिळणे शक्य नव्हते. तो बराच वेळ तसाच तिथे बसून राहिला.

संध्याकाळ झाली तशी मॉलच्या आजूबाजूला असणाऱ्या झाडांवर विजेच्या दिव्यांची रोषणाई झाली. तो स्वत:शी म्हणाला, ''हा कोणता न्याय ? आमच्या गावात १०-१२ तास वीज नसते आणि इथे मात्र झाडांवर देखील लायटिंग !''

तो बसला होता त्याच्या शेजारच्या टेबलावर शाळेतील मुलांचा घोळका येऊन बसला. ती मुले अगदी मजेत खात-पीत होती. त्याने पाहिले की ही मुले एका वेळेला जेवढे अन्न वाया घालवत होती, तेवढे अन्न संपूर्ण दिवसभरातही त्याच्या पोटात जात नसेल ! त्याने खिडकीतून दूर पाहिले, त्याला झोपडपट्टी दिसली. त्याचे काळीज तुटले. जगात काही माणसेच एवढी श्रीमंत का असतात ? तो विचारात पडला.

''अरे तू रॉबिनहूडच्या कथा वाचल्या आहेस ?'' शब्द कानावर पडताच रमेश भानावर आला. शेजारच्या टेबलावरील एक मुलगा दुसऱ्या मुलाला विचारत होता. ''नाही रे, काय विशेष असते त्यात ?'' तो दुसरा मुलगा उतरला. ''अरे छान असतात. असे ऐकिवात आहे की पूर्वी इंग्लंडमध्ये रॉबिनहुड नावाचा माणूस होऊन गेला, तो श्रीमंतांना लुटून गरीबांमध्ये त्यांची संपत्ती वाटायचा.'' हे शब्द रमेशच्या कानात घुमू लागले.

त्याला आठवू लागले; बँकेतील माणसे कशी आपल्या घरी यायची. आपली जमीन कशी आपली राहिली नाही. त्याची आई तिच्या शेवटच्या दिवसात ''सरकार चोर आहे. सर्व नेते चोर आहेत. त्यांनी आपल्याला लुबाडले. सारे गरीबांच्या जमीनीवर टपले आहेत'' असे काही तरी बडबडायची. त्याला ते बोल अचानक अर्थपूर्ण वाटू लागले. त्याने पटकन निष्कर्ष काढला, श्रीमंत माणसे ही गरीबांना लुटून श्रीमंत झालेली असतात. इंग्लंडमधील होऊन गेलेला रॉबिनहुड रमेशला आपलासा वाटू लागला. त्याने पक्के ठरवले - रॉबिनहूडचा मार्ग अनुसरायचा !

तो गावी परत आला. आपली संकल्पना त्याने आपल्या काही मित्रांना सांगितली. गरीबीची आग सोसणारी ती पोरं लगेच तयार झाली. नाहीतरी अज्ञानाच्या आणि दैन्याच्या अंधारात चाचपडणाऱ्या या तरुणांपुढे फक्त दोनच पर्याय होते. एकतर दरोडखोरी, लूटमार करून जीवन जगा नाहीतर आत्महत्या करून जीवन संपवा ! आत्महत्या करणे हे भ्याडपणाचे लक्षण आहे असं रमेशने त्यांना सांगितले. त्यांनाही रमेश हिरो वाटायला लागला. त्यांना तो दिशा दर्शवणारा ध्रुवतारा वाटायला लागला.

घरात रमेशच्या बाबांची एक पर्शी कुऱ्हाड होती. तिला नमस्कार करुन आई-बाबांचे स्मरण करून त्याने आपल्या या नवीन 'कार्याला' सुरवात केली. तो आणि त्याचे साथीदार रात्री महामार्गावरून जाणाऱ्या गाड्या अडवून, धाक दाखवून, प्रवाशांना लुटू लागले. त्यांच्या गावापासून दूर एक अभयारण्य होते. तेथे येणाऱ्या पर्यटकांकडूनही त्यांना मिळकत मिळू लागली. पोलीस खात्यात असलेले हवालदार हे देखील आजूबाजूच्या गावांतीलच. त्यांची गावे सुध्दा अशाच परिस्थितीने ग्रासेलेली. त्या हवालदारांनाही रमेशने आपलेसे केले ! त्यामुळे त्यांच्या नावावर अनेक गुन्ह्यांची नोंद असूनही तो कधी विशेष अडचणीत आला नाही.

रमेश आता 'रॉबिनहूड'च्या जवळ पोहचला होता. त्याने मिळालेला पैसा स्वत:कडे ठेवला नाही. फक्त दोन वेळचे जेवण भागले की झाले. तो ती रक्कम गावात वाटून टाके. बँकेचे हप्ते भरण्यासाठी लोक रमेशवर अवलंबून राहू लागले. रमेश हा गावातील लोकांचा आशेचा नंदादीप झाला. आपण लग्न करावे, आपले कुटुंब असावे असे त्याला कधी वाटले नाही. कारण या वाटेने जाणाऱ्याचा शेवट काय होतो हे त्याला समजले होते.

असे असून देखील त्याला आपल्या कामाचा अभिमान होता. तो आपल्या साथीदारांना म्हणे, ''शिवाजी महाराजांनी सुरत लुटली होती. स्वराज्यासाठी. उमाजी नाईक, क्रांतिसिंह नाना पाटील यांनी इंग्रजांविरुध्द स्वराज्यासाठी... स्वातंत्र्यासाठी बंड केले होते. आपणही श्रीमंतांना लुटतो आपल्या गावातील गरीब शेतकऱ्यांची बँकेच्या-सावकाराच्या पाशातून मुक्तता करण्यासाठीच ना ?'' विशेष म्हणजे रमेश व त्याच्या साथीदारांनी कोणाचे प्राण कधी घेतले नव्हते. ते फक्त धाक दाखवून रक्कम-जीनसा घेऊन फरार होत. पण तशी वेळच आली तर कोणाचे प्राण घ्यायला मागेपुढे बघायचे नाही असे त्याने बजावले होते. कारण या आसुरांनी त्याच्या आई-बाबांचे प्राण घेतले होतेच की !

असे आता रमेशचे जीवन चालले होते. कधी-कधी त्याला आपल्या मोठ्या भावाची आठवण होई. आपल्या आई-बाबांची आठवण ही त्याला नेहमी येत होती. अशा प्रकारे पाच वर्षांचा काळ भुर्रकन उडून गेला. आज सकाळपासूनच रमेशला एकटे एकटे वाटत होते. आज त्याच्या मनात पाच वर्षांच्या गत इतिहासातील पाने उलगडत होती. विरहाच्या कातर ढगांनी त्याच्या मनात गर्दी केली होती. तो एकटाच विचारांच्या खोल गर्तेत रूतून बसला होता. तो भानावर आला तेव्हा रात्र पडली होती. थोडेसे खाऊन तो त्याच्या कामासाठी मार्गस्थ झाला.

आज त्यांनी आपली हायवे वरची जागा बदलली. ते गावापासून लांबच्या रस्त्यावर एका वळणाजवळ उभे राहिले. पाऊस धो-धो पडत होता. थोड्याच वेळात त्यांना एक मोटरकार

येताना दिसली. तिचा वेगही तिच्या सर्चलाईट वरून कमी वाटत होता. रमेश आणि त्याच्या साथिदारांनी चटकन पुढे होऊन वाट अडवली. आत एकटा माणूस होता. आता आपले काम सोपे झाले असे वाटून त्यांनी त्या माणसाला लुटण्याचा प्रयत्न केला पण त्या माणसाने देखील आपल्या समोर पाच सहा दरोडेखोर आहेत याची तमा न बाळगता प्रतिकार करायला सुरूवात केली. ''माझा पैसा माझ्या मेहनतीचा आहे. मी तुम्हांला तो देणार नाही.'' असे म्हणून तो माणूस सर्वांशी दोन हात करायला सिध्द झाला. रमेश आधीच विचार करून थकला होता. त्यात हा माणूस सहजासहजी बधत नाही हे पाहून त्याने त्या माणसावर कुऱ्हाडीने वार केला. इतर साथीदारांनी त्या माणसावर काठीने मारहाण केली. त्यात तो माणुस जागीच कोसळला. ठार झाला. हा रमेशचा पहिला मनुष्यवध होता ! त्याच्या गाडीत बरीच रक्कम सापडली. गाडी रसत्याच्याकडेला अपघात झाल्यासारखी ढकलली व ते सर्वजण भरपूर घबाड मिळाल्याच्या आनंदात गावाकडे निघून गेले.

दुसऱ्या दिवशी रमेश सकाळी उठला. थोड्या वेळाने एक पोस्टमन त्याच्या घरासमोर येऊन उभा राहिला. त्याच्यासाठी एक पत्र होते ! उभ्या आयुष्यात पहिल्यांदीच त्याच्यासाठी कुणीतरी पत्र पाठवले होते ! तो पत्र वाचू लागला. ते पत्र त्याच्या मोठा भाऊ महेश याचे होते. ते आईस संबोधून लिहले होते. रमेश आनंदाने वाचू लागला.

''ती. आईस,

सा.न.वि.वि.

पहिल्यांदाच पत्र लिहीत आहे. प्रथम मी तुझी क्षमा मागतो. मी नागपूरच्या शिक्षणानंतर पुढे शिकायला पुण्याला गेलो. नंतर मला नोकरी लागली. प्रमाणिकपणे कष्टाने नोकरी केल्यामुळे साहेबांनी खूष होऊन मला बढती दिली. माझा पगार वाढला. त्यामुळे माझ्याकडे बऱ्यापैकी पैसा आला. त्यानंतर मी लग्न केले. एक छान मुलगी आम्हाला झाली...

खरं म्हणजे कॉलेजमध्ये शिकताना मी आपल्या गरीबीमुळे हॉटेलमध्ये काम करून कसे बसे शिक्षण पूर्ण केले. मला घरी येण्याची इच्छा नव्हती. मला तुमच्यासारख्या गावठी अशिक्षित लोकांमध्ये रहायला आवडत नव्हते. मला माझे वेगळे विश्व निर्माण करायचे होते. मला परिस्थितीने एवढे नीच बनवले की मला तुमच्या गरीबीची लाज वाटू लागली. मला गावाच्या स्मृती पुसून टाकायच्या होत्या.

माझ्या पत्नी व मुलीवर गावचा प्रभाव पडू नये म्हणून त्यांच्यासमोर मी कधी गावचा विषय काढला नाही. त्यातच मी आपणास न विचारता लग्न केले होते. त्यास आपला विरोध होईल असे वाटून पत्र ही कधी लिहायचे नाही असे ठरवले होते.

पण माणसास कर्मासारखी फळे मिळतात असे म्हणतात. तसेच काहीसे माझे झाले. तीन महिन्यांपूर्वी माझ्या पत्नीचा व मुलीचा एका भीषण अपघातात अंत झाला. मी त्यांच्याबरोबर का नव्हतो ? काळ मला का घेऊन गेला नाही ? असे मला वाटायला लागले. मला आता जवळचे कुणी उरले नव्हते. मला एकटे-एकटे वाटू लागले. गावची आठवण येऊ लागली. मला माझ्या कर्मांची लाज वाटू लागली.

म्हणतात आईचे हृदय विशाल असते. मुलांचे शंभर अपराध ती पोटात घालते. मला ही तू माझ्या चुकांबद्दल क्षमा कर.

या २५ जूनला बाबांच्या पुण्यतिथीला मी तुला भेटायला येत आहे. आता माझे सारे आयुष्य आपल्या कुटुंबासाठी व गावाच्या उध्दारासाठी वेचायचे मी ठरवले आहे.

रमेश कसा आहे ? मोठा झाला असे ना आता ? त्याला कधी एकदा डोळे भरून पाहतोय असे मला वाटतेय. पत्र लवकरच पोहचेल अशी आशा करतो. भेटू लवकरच...

तुझा
महेश.

रमेशने हे पत्र वाचले आणि तो जमिनीवर कोसळला. काल त्यांनी ठार केलेला माणूस दुसरा-तिसरा कोणी नसून त्याचा मोठा भाऊ महेश होता हे समजायला त्याला वेळ लागला नाही. शरीरातील सारे बळ निघून गेल्यासारखे त्याला वाटले. तो गलितगात्र झाला. बराच वेळ तो बसून होता. थोड्या वेळाने दु:खावेगाने तो ओक्साबोक्शी रडू लागला. त्याला आई-बाबा-भावाची खूप आठवण येऊ लागली. त्यांना भेटावेसे वाटू लागले. आता त्यांना भेटण्याचा एकच मार्ग होता !

तो आत घरात गेला. माळ्यावर त्याने जीवापाड जपून ठेवलेली एक गोष्ट होती. बाबांनी प्राशन केलेली किटकनाशकाची अर्धी वाटली. आधीच बाबांनी अर्धी प्यायली होती... राहिलेली अर्धी त्याने प्यायली ! काही क्षणातच तो जमिनीवर कोसळला...

नरखेडच्या रॉबिनहूडने अखेरचा श्वास घेतला !

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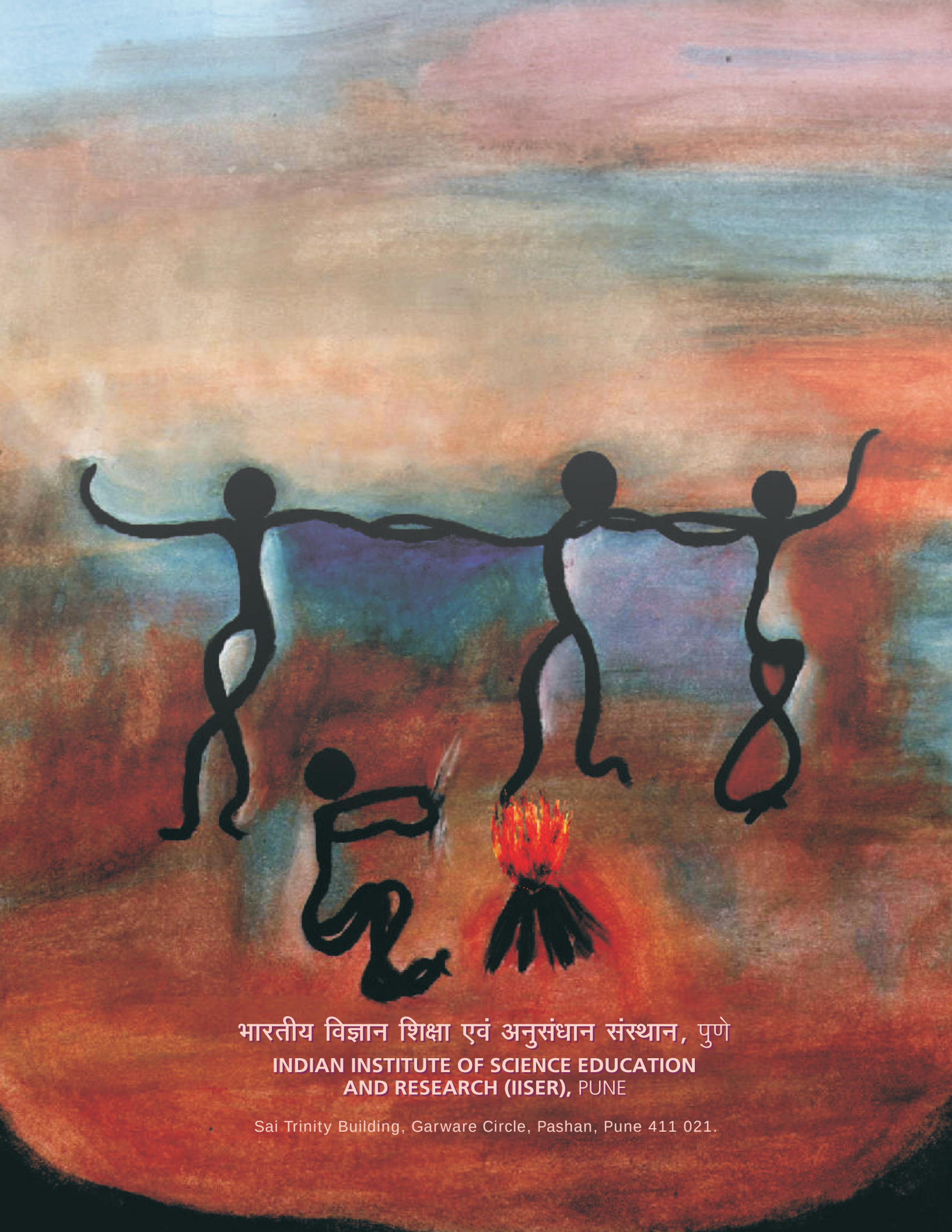

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