

**Internship - Research and Industrial**

Tale of two internships and a look at the Institute PT Policy which is yet to be finalized.

Page 2

**Construction Blues**

The story behind the innumerable and never-ending constructions on campus.

Page 4

**IIT Bombay's 50<sup>th</sup> year - A lookback**

Little known facts about our institute and its 50 years of heritage.

Page 5

Today IIT Bombay is confronting a serious problem in the form of space allocation in its hostels. In the following article, we have tried to canvass student opinion on the same, hoping that the authorities take corrective measures soon.

**The Case of Hostel 11:**

The hostel has 186 single rooms, 66 double rooms and 12 triple sharing rooms. Nonetheless accommodating around 86 new entrants was far from comfortable. The options suggested by the authorities then, were tripling the double rooms or doubling the single rooms. This 'solution' which was implemented in the previous year for a month "not only put pressure on sharing of common resources like drying rooms, washing machines, mess, toilets, but also heavily encroached upon the personal space of every individual" say the students. Post a lot of complaints and coercion, the authorities have provided a relatively spacious accommodation of 18 faculty quarters, each capable of housing six inmates.

But associated with this facility are problems: sense of belonging to the hostel diminishes over a prolonged period. As seen over the last year, participation in hostel and institute level activities declined. Also inmates in the faculty quarters face a commuting problem to H11 or H10 mess. In here, they also face difficulties getting their immediate issues like fixing of electric problems etc addressed. Vigilant security is lacking: these areas are not perceived as ladies hostel accommodations.

**What the other PGs feel:**

We spoke to a lot of PG students across different hostels with an attempt to understand the nature of the problems associated with sharing, which are markedly different and of a more immediate nature

## The Big Crunch

**Insight explores the problem of space shortage in hostels and the associated effects on the fresh batch of PG students.**

than that of sharing among the UGs. Here is a list of the important ones among them:

a) **Academic Problems** - Due to different curricula for PGs from department to department, the room-mates have a completely different time schedule. This is primarily due to different lab timings, classes etc. Most are finding the first semester really 'tough', taking into consideration the problems of adjusting to the living conditions, mess food, academic load etc (and all this having attended college once before this). The common refrain is "Can we pursue academic excellence in such an ambience? With personal spaces so much encroached upon, are academic pursuits possible?"

b) **LAN** - The LAN BAN effectively permits the usage of internet for only 5 hours (considering they spend the mornings in classes and labs). In addition, a single LAN port per room restricts the access even further. Most PG students say that they use the internet for primarily academic purposes and the LAN ban is an unwarranted restriction.

c) **Maintenance** - In many hostels, room painting and maintenance work is in progress. Students are forced to stay out of their rooms for a stretch of 4-5 days, and that too after the semester has started. "Shouldn't the maintenance work be done during the holidays and not during the semester?", they ask.

d) **Mental Stress** - Just 30 days into the institute and the freshers say that they are already suffering from severe mental stress. With the problem of space crunch

rising in the hostels, some students in H1 have even been tripled in the box rooms. They think that it's not fair on the institute's part to ask them to live this way considering their seniority. On top of that, nobody knows when they are going to get single rooms.

**Hope or wishful thinking?**

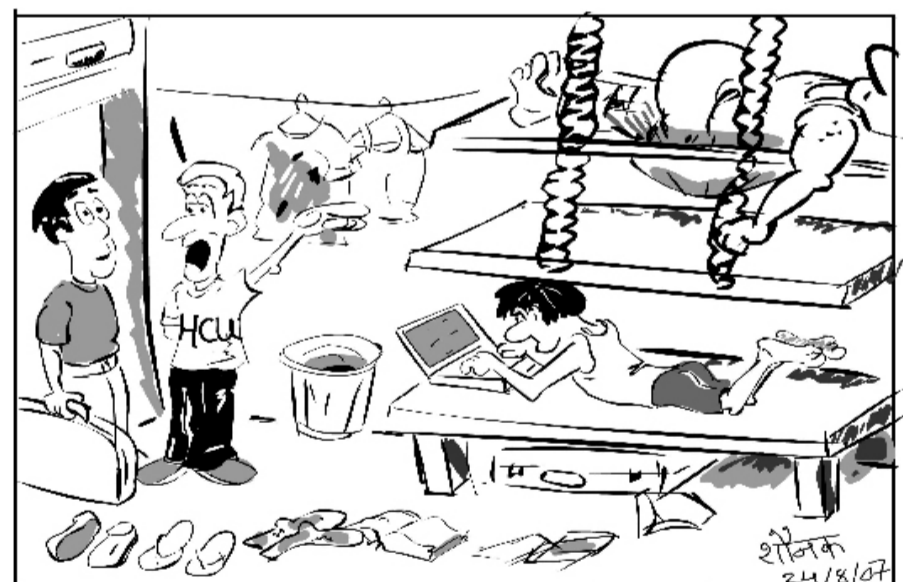
With work experience and age, personal spaces expand. Are our hostels sensitive to these needs? It is predicted that by 2009 this space crunch issue would be resolved. The institute has promised the erection of new hostels by 2009. We tried to approach the HCU for the current allocation data and some leads on the future plans. There is so much red-tapism that all our requests for information end up being thwarted by circumlocutions.

As a first year M.Tech. Student succinctly puts, "We don't want any luxuries from this premier institute but we want the most basic needs of ours to be met.

1. A room with a proper bed to sleep.
2. A table to place our computer or to study.
3. A cupboard to keep our belongings safely.
4. A little bit of space to walk in."

We hope that the authorities will take note of this problem, which, given the possibility of increased intake is only going to exacerbate in the coming years. Expediting the construction of the new hostels is necessary if at all there is a hope of panacea in the coming years for these students.

(Ramya and Mallika are second year PG students in the EE Department. Abhinav is a third year student of the MEMS Department. Ashwath is a second year student of the Aerospace Department.)



You'll be getting this bunk and not a whole room for the next two years. As you can see we had to make a few adjustments to fit the increased intake of students.

## Ragging and Remedy

**Given the new law against ragging, can the student community strike a healthy balance across batches? Krishna Ramkumar speaks...**

*fear or apprehension thereof... and which has the effect of causing or generating a sense of shame or embarrassment so as to adversely affect the psyche of a fresher or junior student."*

The law in its present state unequivocally condemns ragging of any form. However, where it doesn't do too well is in the very definition of the word 'ragging'. Terms like "annoyance" and "embarrassment" have been tossed around rather loosely, and this has left the law open to interpretation. Many people believe that the law was

long overdue, given the fact that ragging has exceeded acceptable limits in several cases in the past. An equal number though believe that the Supreme Court has taken too extreme a stand on the issue. However, there is really no (practical) point in debating whether it is right or wrong. The law is at it stands. So where does that leave us?

**Introspection:**

Picture this. You are the Dean, Student Affairs. You receive a call at 2 AM from a sophomore who is sobbing because wing

seniors are taking an 'intro' in his wing. The only witnesses in the case are the other sophomores involved and the seniors who are under the scanner. The sophomores are adamant that nothing untoward has happened in the 'intro' session. The seniors too plead innocent. The sophie under duress however sticks by his story. Talk like this seems like it belongs more in a courtroom than in an academic institute. And this is what might very well transpire in the future, in the case of a ragging incident. The law states very clearly that if the institution believes that something untoward has happened, an FIR must be lodged in the local police station. The authorities hence have no choice but to let such a case undergo its normal course of investigation under the criminal justice system.

(continued on page 2...)

**Research Internship**

I had done my summer internship at Stanford University, USA. Working in universities provides research experience, which is different from experience obtained by working in the industry.

**Applying:**

I had gone about applying to professors in different universities, working in areas that I found fascinating. It is important that one apply to those research groups whose work is to one's liking. However, if there are several such areas, doing a research internship in one does not mean that your future prospects would be confined to that area in future. It is therefore, a wonderful opportunity to explore the area, and also talk to different people, working in other areas. It will also help you decide between the choice of a career in industry or pursuing further studies.

**Deciding the topic:**

I believe my internship was a rather "non-standard" one, judging by what I found many of my batch mates doing in their university internships. My supervisor at Stanford suggested that he would like to let my choice of work be guided by my passion, rather than his discretion. Thus, I spent my first few weeks exploring different exciting topics and I also met different professors and talked to them about their work. One of them even invited me to attend weekly research group meetings with his students, which I did, and found to be a lot of fun. I was quite amazed by the infectious passion that the students and professors shared alike, and in those meetings, they were open enough to hear out and discuss all kinds of problems - even puzzles and brain-teasers.

During the latter part of my stay, I worked on "Randomized Load Balancing", choosing it over a few other problems that my professor offered me. We worked out some theoretical aspects of the problem, and ran a few simulations to validate the results. I am now, strongly of the opinion that you do your best work when you have no compulsion to do it, when you do it for

**A Tale of Two Interns**

**Sudeep Kamath (4<sup>th</sup> year EE) and Rylan Henriques (4<sup>th</sup> year EP) describe their experiences in a research and industrial internship respectively.**

the sheer joy of it. I believe this experience has strongly boosted my confidence and motivation to pursue further studies.

**Student culture – IITB vs Stanford**

It would have been next to impossible to miss the difference between Stanford and IITB with regards to the student culture. For one, the undergraduates get to choose their field of major as late as one year before their graduation. All that is required for the same is completion of a fixed number of credits and a few compulsory courses in the field that one wishes to major in. The amount of flexibility in courses is astounding. From my observation of the average student motivation towards academics, it is likely to be on the higher side there. The "Honour Code" is taken very seriously by nearly all students; indeed the punishment for its violation is very harsh. The research environment is largely informal and friendly. The number of student bodies on campus is huge. From athletic bodies to student nationality groups to juggling clubs, almost every student can associate himself with diverse interests.

**"From my observation of the average student motivation towards academics, it is likely to be on the higher side there (at Stanford). The "Honour Code" is taken very seriously by nearly all students."**

**All in all:**

It is undoubtedly, a great atmosphere to work in, when you have the kind of people around you, who, on one hand, would love to discuss problems and on the other hand, would delightfully join you in activities like fountain hopping (jumping around into the numerous fountains on the campus, on a hot afternoon with no particular aim in mind - a tradition, perhaps peculiar to Stanford).

**Industrial Internship**

I did my practical training with Crompton Greaves (CG), Mumbai- a really huge company that provides electrical solutions. By the time I decided to take on this internship, I was pretty sure that research wasn't really meant for me. My main motivation in doing an industrial internship was to familiarize myself with a work environment, and see how suited I was to it.

**Applying:**

There are a number of ways one can go about applying for an industrial PT. There are a number of companies which come to campus itself for recruiting summer interns. The application process mirrors the placement process, in as much as there are shortlists made, group discussions conducted, and personal interviews carried out. Another viable alternative is to apply to a company off-campus where the prospects are quite good these days.

**Overview of work**

The project I was tasked with was to reevaluate the company's performance using a new performance metric called EVA (Economic Value Added). For the first couple of weeks, my major task was reading up on existing material about my topic, getting to know more about the company and its operations, and in many ways resembled doing a literature survey. This was followed up by the stage where I actually did productive work. The first part of this involved analyzing the company's financial statements, making adjustments to arrive at the EVA figures for the company over the last few years, and noting down trends etc. This was essentially desk work and really did not require much input from external sources. The conclusion of this marked the end of phase one of my project.

**Work Culture:**

Work went on at an easy pace at first. The

reading was left to me, though it was made abundantly clear that the more I knew, the easier I'd be able to handle successive stages of the project. Once I actually started getting my feet wet, there was no more room for just 'getting by'. Deadlines kept hitting you everywhere you looked, and the pressure was on! I loved it. The more you try to do, the more you seem to be able to do. I was really stimulated by the break-neck pace of things.

Throughout my internship I was required to give status reports to my guide, and the end of phase one required me to make a presentation about my findings thus far. Guides are fun people. They can make your internship an amazing experience. Conversely, if you don't get along with your guide, bad things can happen.

**"And for those of us who are pretty sure we want to enter the work force, an industrial internship can be something which acclimatizes us to our potential lifestyle in the years to come."**

**Hands on experience:**

Phase two involved me interacting with people on various different levels. I was supposed to test the waters and see what sort of variable compensation schemes would be acceptable to workers of different designations. As part of this phase, I went around CG's various plants, had one-on-one interviews and feedback sessions with the different plant heads, and interacted with the shop-floor workers as well as senior management. Being a people person, I found this part of my project much more stimulating than the previous part.

**All in all**

An internship which lets you delve deeper into an industry, to look into the practical side of things, will definitely extend your horizons, and give you a much broader perspective on things. And for those of us who are pretty sure we want to enter the work force, an industrial internship can be something which acclimatizes us to our potential lifestyle in the years to come.

Institute

2

**Ragging and Remedy (continued from page 1)**

The authorities cannot be blamed for taking a no-nonsense stand against ragging; they are simply following the law. However, the endless hype around the issue has resulted in paranoia among students, both junior and senior. Sophies shudder at the very mention of the term 'intro'. Some even welcome it with open arms, almost considering it a challenge. Seniors are imagined to be sadistic people who have nothing better to do than parade juniors around in the buff. For their part, seniors themselves have sadly become sceptical about interacting with juniors in their hostels and wings. Interaction is at a bare minimum, and a complete breakdown of relations is imminent.

**Seniors and Juniors:**

As in most issues of this nature, the problem is that there are a few bad apples on either side - seniors and juniors. Agreed there is a need to break the ice when a newbie enters a group. But there is absolutely no reason why this must involve disrobing a junior. At the same time, juniors must understand that there are various levels of initiation. Singing and dancing in front of a crowd might be embarrassing, but most certainly do not warrant a complaint. If you feel any discomfort, you have a right to walk away and disassociate

yourself from a senior at any point in time. Serious complaints regarding ragging are always welcome at the Dean's office; just don't be speculative in your complaint. You can be assured that confidentiality will be maintained and strict action taken.

**So what is the way forward?**

Firstly, the issue of random allotment of rooms to sophies needs to be reconsidered. After the first year, it is only fair that a student be allowed to choose his own roommate, like it was in the past. Secondly, seniors need to shelve their fear of juniors. The onus is on them to bring back normalcy to inter-batch relations. Juniors must also realise that helping a senior putting up posters in a hostel is something all of us have done. Sure, no one can force you to do anything, but a little help never does any harm.

The "now or never" attitude might be a touch too dramatic for the issue at present, but at the current rate, we will soon get there.

*(Krishna Ramkumar is a fifth year student of the Integrated M.Sc. Chemistry Programme and is also the Coordinator of Institute Student Mentor Programme.)*

**Institute PT Policy**

**IITB continues to lack a definite PT Policy and the stand over the same is different across departments. Rajlakshmi Purkayastha speaks...**

The PT policy for the new year, which held a lot of hopes for change in lieu of last years radical unified PT policy ([http://gymkhana.iitb.ac.in/~academics/pt\\_policy.html](http://gymkhana.iitb.ac.in/~academics/pt_policy.html)), has thus far turned out to be a damp squib. Although there are a lot of hopes for a new PT policy on the cards, there's nothing confirmed thus far.

As a result of no policy at the institute level, it is mostly being dictated by the Department PT nominees/co-ordinators. Some departments such as electrical and civil have more or less defined the PT process whereas it is still evolving for other departments.

Some departments such as CSE and EP allow students to take up almost all PTs, technical or non-technical, whereas most such as chemical, electrical, civil and mechanical are allowing both research and core company PTs (but not non-core companies) either in India or abroad. An exception is MEMS which has placed a restriction on Research PTs be they in India or abroad, with non-core company PTs being a strict no-no.

Many departments were being expected to carry out this step of banning foreign university PTs but other than MEMS no

one has taken this step. The reasoning behind it is twofold. Firstly professors want to stop the spamming process which sees the mailboxes of professors being flooded with long resumes and tall tales sometimes leading to the extreme step of banning all mails from IITB mail ids. It was to avoid this that the PT policy was decided last year which allowed for the institute to contact professors rather than students. However, most believe that this would only encourage students to try and contact professors outside the ambit of the system. Secondly professors not only feel that most of these trips are nothing but paid vacations but against the very philosophy of a practical training, which is to get acquainted with the engineering processes related to a department rather than simply laboratory apprenticeship.

So what does this hold in store for current third year students? Nothing extraordinarily different from the process of the years gone by, other than certain routes being banned. So while it's back to the shop floor or the email editor for most, the small percentage of people who get fake certificates is likely to continue existing.

*(Rajlakshmi Purkayastha is a fourth year student of the MEMS Department.)*

## The Big Bang

As a solution to the declining educational standards of the institute, the Biswas Committee was set up a couple of years ago to analyze and suggest some pragmatic reforms in the undergraduate curriculum. The committee submitted its report in the spring semester 2006-2007. We present here, an exposition of the major recommendations that have been approved by the Senate, thus bringing into effect major curriculum changes for the undergraduate program starting with the entrant batch of 2007.

**"The most significant recommendation implemented has been reduction in the number of compulsory credits."**

### Minimum Credits

The most significant recommendation implemented has been reduction in the number of compulsory credits. Under the new system, minimum credits requirement for a B.Tech degree has been reduced to 250-264 from the previous figure of ~330. This effectively means a huge decrease from the average semester load of >40 credits to just over 30 credits (4 courses and 2 labs are recommended). This minimum course content deemed indispensable for a student to be called an engineer in her/his discipline, would be rigorously structured and graded. A D.D. student, apart from completing the same compulsory minimal 250-264 credits that a B.Tech does, must also complete 30 extra credits in the form of advanced department courses in the four years and finally a 96 credits D.D. project (totaling ~375-390 credits) in her/his 5<sup>th</sup> year.

## The Re-Freshed Curriculum

Aaditya and Miheer dissect the Biswas report and summarize the main clauses under the curriculum reforms.

### Majors, Minors and Honours

Following the standard convention in many western universities, the interested undergraduate will have the option of pursuing a 'Minor degree' in another department of her/his choice over and above the 'Major degree'. As an alternative, one can also gain extra credits in one's own department by taking up the 'Honours' option. Each of these will require the student to work towards an extra 30 credits over and above the compulsory 250-264 credits through her/his stay here. The exact policy for eligibility and the curriculum for the 'Minors'/'Honours' additions are yet to be elucidated by the individual departments. In short, these two options give the academically oriented student the opportunity to either expand her/his knowledge base/skills set either in a breadth-wise fashion (by opting for a Minor) or to explore specialized areas in her/his own department (by opting for an Honours).

There is some bad news for D.D. students. Presently, the option for a Minor is not available to them (though there are dangling suggestions about creating a CPI barrier of >8.5 to exercise this option). Though the Honours option has gained support within the Senate, details on this front have not been finalised yet.

### Have the cake and eat it too?

In principle, students who are capable (in the top bracket) and interested in retaining

the present work load have the opportunity of completing B.Tech along with an Honours as well as two Minors in their areas of interest (though this will result in an excessively heavy schedule!). A D.D. student will have the option of passing out with a B.Tech + M.Tech along with a single Minor (subject to policy). Also, students who are not so academically motivated can pursue other activities without compromising on the new light minimum academic requirements. Prof. Biswas, however, warns that clearing a backlog will be much tougher under the new system. Also, he feels that the usefulness of the system will be brought out only if 70-80 percent of the students opt for at least one of the several available options, i.e., a Minor from such a large variety of departments, or a Honours in your own.

**"Firstly, there is no longer an 'FF' grade (re-exam). After 'DD', it's directly an 'FR' (repeat the course) grade that will be awarded."**

### Etcetera

Two new courses – a theory course on Probability and Statistics and a lab on Experimentation and Measurement - have been introduced to meet demands of research and industry. Some of the student suggestions currently under discussion are the assignment of dual degree specializations at the end of second/third year and also to include hands-on projects, industrial visits and guest lectures as a part of

the course work.

### Words of Caution:

The new system is very tough on students with backlogs and has eliminated all soft options. Firstly, there is no longer an 'FF' grade (re-exam). After 'DD', it's directly an 'FR' (repeat the course) grade that will be awarded. Also, there will no longer be summer courses or self-study courses running. They must repeat the course in another semester.

Also, the core courses that need to be completed for a Minor may have to be offered in both semesters, once for the department students, and once for the backloggers and the Minor-pursuing students. This adds up to 5-6 extra courses in each department and raises a big question mark on the availability of facilities (classrooms, labs, teachers, T.A.s, etc). If things are to work out for the new batch, plans better get moving.

### Great Expectations

A clear shift from faculty-defined constant workload, to a more student-specific, interest-based, variable workload can be seen. We shall see how well the freedom of choice will be used to develop multifarious competencies as required by employers or otherwise. As is with every single reform, the response and the effect shall be the verdict of time.

(Aaditya Ramdas is a third year student of the Computer Science and Engineering Department and also an Institute Secretary for Academic Affairs. Miheer Desai is a second year student of the Mechanical Engineering Department)

## Alumni Events - IIT2007

Hemendra Godbole, an IIT Bombay alumnus, talks about the Event, its present and future goals.

If you are at IIT-Bombay right now, you are singularly fortunate. You have a way after your graduation to experience IIT all over again, as active participants of the IIT Bombay Alumni Association and IITBHF (<http://www.iit.org/iit2007/>).

### IIT2007 –The event:

Your alumni were the largest set of volunteers within the IIT2007 team, and headed the content, sponsorship and finance teams. Pooled from all seven IIT campuses, the organizing team delivered a spectacular event to over 4,000 exuberant participants. This was the "big one" with the epicenter in Santa Clara, California that sent joyous shock-waves across the globe. This article is a small ripple touching you right now.

The content for this event spanned a broad spectrum, ranging from the expected focus on technology, to the eclectic "Life beyond technology" tracks. With two full days of highly insightful, provocative and valuable parallel sessions, the event was anchored by scintillating keynotes by Jeffrey Immelt (GE), Senator Clinton, Arun Sarin (Vodafone), Bob Dynes (UCal), and Rajat Gupta (McKinsey). One of the new and exciting elements was a track wherein current students from IITB, IITD, IITKGP and IITG presented research projects on-campus.

A key goal for this event was to get on-campus students weaved in as a core-element of these events, as well as provide a continuity to tap into on-campus research interests, aspirations and how we could help as alumni going forward.

### What motivates us?

So, why would alumni-professionals with a hectic job and personal life work for over six months to drive this event? Two compelling drivers as we do our best to give back:

- (1) Build the IIT brand externally and internally within the IIT eco-system
- (2) Help our younger alumni reach goals in half the time taken by our older achievers

**"A key goal for this event was to get on-campus students weaved in as a core-element of these events, as well as provide a continuity to tap into on-campus research interests, aspirations and how we could help as alumni going forward."**

The latter is a key element that touches you on-campus. Sai and Rohit did an awesome job bringing us closer to research projects and student-life at IIT-Bombay. Your senior alumni are optimistic that with your active participation, we will get a step closer in achieving our goal at IITB. For one example of an alumni perspective, listen to an audio interview at: <http://www.podtech.net/home/3781/hemendra-godbole-on-pan-iit-conference>

### Voices from above and below:

"I wish I knew about the IITB alums as a freshie! I will do everything to get more students actively involved now into the alumni system" – Sai Krishna, 4th year, H4.

"I strongly encourage each of you to stay

with us at IITB when you visit – just look at what our faculty and students are achieving these days!" – Prof. D.B.Phatak.

"Don't lose all the momentum and energy you bring with you as you graduate! Join the IITBAA and IITBHF and I need help with our website!" – Ram Kelkar, Webmaster@iitbombay.org, 80/EE/H8.

"IIT2007 will go down in history as an inspirational event for years to come" – Subhash Tantry, BOD IITBHF, CFO iit2007, CEO Fox technologies, 75/EE/H6.

"Leverage your alumni-network to translate your ideas into reality – the opportunities are bounded only by your imagination" – Hemendra Godbole, Co-chair Content, IIT2007, Advisor <http://www.numbr.com>, 85/EE/H4.

### The road ahead:

The IIT2007 was just a starting glimpse! With the IITB Golden Jubilee celebrations, we in the Bay Area wish you the very best on-campus, and look forward to spending time with you when we get to visit the best IIT and leading-institution from India – IIT-Bombay.

If you have ideas on how you can help with the IITBAA and IITBHF efforts and want to get involved with our projects, drop us a line at: [webmaster@iitbombay.org](mailto:webmaster@iitbombay.org).

(Hemendra Godbole is an IIT Bombay alumnus of the 1985 batch of Electrical Engineering Department. He is a co-chair of the Contents team of IIT2007)

## Bulletin Board

### Zephyr

This October, fasten your seatbelts. Providing a flying start to the Golden Jubilee celebrations, Department of Aerospace Engineering presents "ZEPHYR".

Celebrate the spirit of aviation with competitions, workshops, guest lectures, panel discussions, panel debates and much more.

Visit <http://www.aero.iitb.ac.in/zephyr> for more details.

### Typographical error in Volume IX Issue VI:

In the article titled 'Organised Chaos' in Page 3 mentioned 'Student Mentors' under the category of unofficial posts. The Insight team would like to clarify that all the posts under the Student Mentor Program (SMP) are recognised by the Institute and that the error is regretted.

### Apology with regards to Cartoon in Volume IX Issue VI:

It was conveyed to us that two cartoons on Page 7 had hurt the sentiments of some of the students in campus. The Insight team would like to apologise to the IITB community, especially those who felt the cartoons were offensive. We shall endeavour to exercise more caution on the content of our articles in future.

The fabled forests, the lakeside breeze, the angry young monkey, the sycophantic dog, the hum of the cement mixer, the clangs of the workman's hammer and the crumbling of a bulldozed wall - We are going to take you on an abridged trip of the less fairytale-ish half of our campus.

**The case of the three CCs:**

Three years from now, we are going to have a Convention Centre, Classroom Complex and Computer centre. The Convention Centre, a Godrej

**"The Convention Centre, a Godrej undertaking, is going to consist of four to five different sized rooms. The quizzes and exams for the incoming batch of undergraduates will be conducted here."**

undertaking, is going to consist of four to five different sized rooms. The quizzes and exams for the incoming batch of undergraduates will be conducted here. Once this project is complete, the renovation of our Convocation Hall will begin. The freshly flattened Seminar Halls of the Physics and Chemistry departments will be replaced by the Classroom Complex. This is in view

## Construing the Constructions

Archana and Arunabh share their views about the ever-burgeoning construction sites in the institute and the perpetual delay that plagues all.

of the expected increase in the student intake. It seems the seminars will also be conducted in the convention centre. So, consider yourself lucky if you have seen those ancient structures. The Computer Centre, demolished last semester, is finally being revived from the ruins. It is being brought up by the construction wing of the Department of Atomic Energy.

**Hostels: More room and a mess-y affair:**

Every hostel seems to be participating in the construction gala in little ways and big. Hostel 7 has been going hungry for almost a year now, and it seems unlikely that the mess will be fixed and functional before December this year. Hostels 12 and 13 will be given appendages in the form of 14 and 15 over the next three years to accommodate the students, whose intake is expected to rise by 10% every year for that period. The extension to hostel 10

will also be complete in another couple of years. If you are wondering why the new hostels will be taking more time to come up as compared to the two years it took 12 and 13 to come up, we guess the buzzword is caution.

Another major renovation was at Hostel 3, its balconies were deconstructed and reconstructed. On a rather tasty tangent: you would no longer need to step out of campus to visit the elite cousin of our Shack. All the paperwork is in place for a Café Coffee Day outlet to start operations opposite H8. It is most likely to be selling items at subsidized rates.

**SAC, Save Active Constructions!**

If you thought the new SAC was being worked upon for this December's Inter IIT, think again. It seems like the goal is to finish demolition work by then. Towing the sports line, we hear the clean chit for

**"If you thought the new SAC was being worked upon for this December's Inter IIT, think again. It seems like the goal is to finish demolition work by then."**

the construction of a new swimming pool was got quite sometime back. But when it will swim out of the bureaucratic pool, we cannot say.

**Golden Jubilee:**

What you have read about is a part of the civil engineer's and architect's paradise IIT Bombay is going to become. With Golden Jubilee just round the bend, be prepared for structures as varied a Golden Jubilee Gate to a Shopping and Amenities complex.

**We hope you had an interesting trip!**

But if details here seem insufficient or lacking, we regret to inform you that these days it is hard to catch the Estate Office officials and the Dean and Associate Dean of Planning for comment.

(Arunabh Sinha is a fifth year student of the MEMS Department and Archana Raja is a second year student of the Chemistry Department.)

## Academic Reforms - The long way ahead

The new curriculum in place, are we exercising proper checks on side-effects and other lacunae? Sushant Sachdeva speaks...

Having been personally involved with some of the discussions that led to the formulation of the long questionnaire employed for the student survey by the Biswas Committee, I must accept that the vision behind the whole proposal was nothing short of revolutionary and profound.

The recommendations of the Biswas committee were passed in the senate without much friction or significant changes to the proposals. I personally think that an important stage of designing and implementation strategy and critically reviewing it has not been given due time and importance. The haste of improving the system, as part of the Golden Jubilee year of the institute, is clear when one realizes that none of the departments have yet formalized the changes in the basic curriculum, leave aside the question of minors and honors.

**The Dual Degree Deal:**

Things become murkier when one questions changes in the DD curriculum. In its last meeting, the senate chose to make a quick decision making it mandatory for the DD students to study extra courses recommended by the department worth 30 credits, over and above the B. Tech curriculum, in order to make them eligible for the Master's degree. What's more, students were told in a meeting with Prof. Biswas that DD students will not be allowed to do minors. Though some professors believe that exceptional students should definitely be permitted to pursue minors, it is yet to be passed by the senate.

**Resource crunch and waning enthusiasm:**

Though the resource crunch in institute

under the increased intake was not one of the core issues under Biswas committee, the recommendations are nonetheless being designed to address the issues to some extent. The resource crunch, only visible in the hostels until now, is obvious in the academic area, with the MA 103 lectures being shifted to the LT. This has inevitably led to a significantly reduced enthusiasm, attendance and almost nil participation. I personally detest the idea of learning mathematics through slides in a lecture theatre. Moreover, the freshmen have been asked not to take notes, as they are available in print. No wonder they find it extremely hard to keep their eyes open. I fear this is only a sampler for the things to come.

**Possibilities:**

I seriously hope the Biswas committee really brings out all the changes that it was initially set to bring about. The committee has not had any student representatives except GSAA since the survey was conducted. Hence I suggest a committee, with a number of professors that were not involved with the committee until this stage with a number of student representatives, so that the issues can be looked at with whole new perspectives. This committee should push for the restructuring by the departments and critically review them. Hopefully, this would help to realize all the promises and that our freshmen don't end up as guinea pigs in a not-so-well-thought-of experiment.

(Sushant Sachdeva is a fourth year student of the Computer Science and Engineering Department. He also contributed to the initial groundwork and survey conducted by the Biswas committee and is currently a student mentor for first year students.)

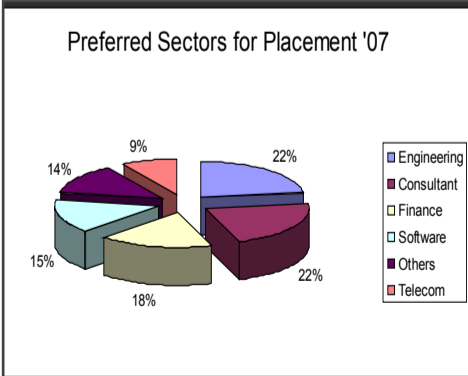
## PLACEMENT SURVEY

InsIghT presents a first look at the placement survey results as the job season gains momentum.

The placement season is slowly heating up with two major names in consulting having already conducted their workshops and PPTs being scheduled by the dozen. The placement team is conducting a survey (hosted on <http://10.129.39.10/survey/>) asking people to rank sectors and companies according to their preference. The result will be used in inviting companies and scheduling their order of arrival.

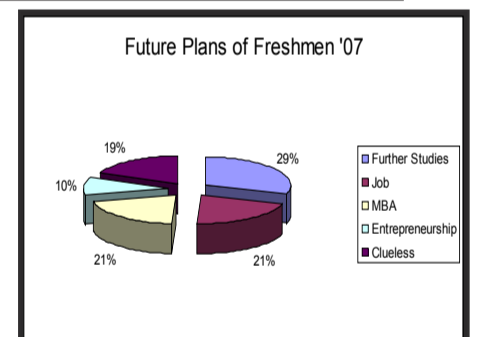
Here are the compiled results so far in terms of preference for sectors.

(Please note that only 383 out of over a 1000 students registered for placements have filled the survey till date. Hence, the conclusions are by no means exhaustive. Moreover, each student could select more than one option.)



An interesting observation that comes across is that, contrary to popular belief, consulting is not an outright winner and core technical jobs are equally sought after (22%). And jobs in financial firms come a close second. Surprisingly, Telecom jobs rank last with only 9% votes.

As an academic exercise, InsIghT conducted a survey of the current freshie batch



to figure out their inclinations towards the multifarious opportunities available after graduation. The options provided were

- Further studies
- Job
- MBA
- Entrepreneurship
- Clueless

It is heartening to see the maximum number of people inclined towards academics and higher studies(29%). This was followed by an equal percent (21%) split between job and the management route. A significant fifth are waiting for further exposure before they make up their minds. It will be interesting to note the way these inclinations evolve over the period of stay in IIT Bombay.

As the placement season progresses with unknown twists and turns, InsIghT will follow the details and keep its readers' updated. Till then, good luck with those resumes.

We thank the institute placement team for providing us with the necessary data. (Freshie survey conducted by Asgerali Masalawala and Rajat Chakravarty, second year students of the Aerospace Engineering Department.)

**"An institute is the embodiment of an idea."- Eric Ashby**

When the three of us were given the task of churning out 700 words on the Golden Jubilee of IIT Bombay, we jumped headlong into the project with characteristic zeal. We decided to interpret it as a look back over fifty years of history, of tremendous endeavour, of a talented but little exploited youth, and of the vision of a few great men. So a fortnight full of dead ends, dusty cupboards and long conversations later, we came up with this- the first in a three part series on the little known history of this institute we study in.

#### Of Relationships and Edifices

Year 1448. The earliest recorded Marathi historical prose '*Mahikavatichi Bakhar*' mentioned a temple situated at a village called Poumwi. In 1965, a stone inscription was found in the drained bed of the Powai Lake, confirming the existence of a Devi temple since 10th century A.D.

**"A cultural festival named 'Mood Indigo' was organized from 3-1-73 to 8-1-73. Many universities and colleges from all over the country participated."**

Half a millennium later, Professor Humayun Kabir, the Indian delegate to UNESCO unprecedentedly proposed the idea of funding a higher technical institute. Named the Institute of Higher Technology, Bombay, this was to be in association with the erstwhile USSR. Needless to say it was carried out and now, it has stood fifty years beside that same Devi temple.

March on to March, 1959. Shortly after laying the foundation stone to the Main Building, Prime Minister Nehru climbed into an open jeep. Two Soviet delegates and an interpreter were in the back and they were driven by the first Director of IIT Bombay. Across barren landscape, he pointed out the locations of Hostel 1, three workshops and two teaching sheds. Classes meanwhile were already being held at SASMIRA building in Worli.

The new secretaries are in alright and we asked them what is happening this semester that is new. Here is what is in store for us:

#### October-A Month of plays:

Come October and we shall see a series of nationally and internationally acclaimed plays happening in the institute as a part of the "Theatre week", courtesy a tie up between BONDA, the Dramatics Club of IIT Bombay and Prithvi Theatre. The schedule of seven plays, from Eva Ensler's "*Vagina Monologues*" and Naseeruddin Shah's "*Katha College*" to Rajat Kapoor's "*Sufiana*", promises to leave you spellbound by the end of the week. Here's a synopsis of a couple of these plays:

**"...Hip-hop and Bollywood and Latin American Ballroom dancing classes being conducted this semester in the institute."**

**Vagina Monologues** - It gives voice to women's deepest fantasies and fears, guaranteeing that no one who watches it will ever look at a woman's body in quite the same way, objectifying it. The production has been staged internationally, and a television version featuring Ensler was produced by HBO.

## 50 years of IIT Bombay

**Nithya, Aishwarya and Tarun give you a glimpse of the memory lane as IIT Bombay gears itself up for its 50<sup>th</sup> anniversary.**

Symbolic of Russian collaboration, President Leonid Brezhnev of the erstwhile USSR planted an Ashoka tree in '61 outside the newly erected Lecture Theatre. Construction of recreational facilities including a Gymnasium (now the SAC) and three clay courts, flourished over the next five years. During the Indo-Pak war in '65, work on a building with a revolutionary thin concrete folded plate roof in the form of a curved fan proceeded without interruption. To this day, students proudly receive their degrees in this Convocation Hall.

#### Flower Children

In a world raging with action, from the

emerging Pop culture to the Youth Movement, students kept pace by creating what later became the most vibrant cultural atmosphere among all the IITs. We have attempted to trace the beginnings of the diverse extra-curricular activities the modern day IITian indulges in.

In 1966, the fourth Inter IIT Sports Meet was held here. IIT Bombay lifted the overall trophy for the first time. The history of debating in the Institute traces back to the first All India Debate held at IIT Bombay in 1967.



#### IIT Bombay in 1965

Golden Jubilee Celebrations in the coming months:-

- **Inaugural Function** of the Golden Jubilee Celebrations will be held on 5th September, 2007.
- **Distinguished Lecture Series** where Nobel laureates will be invited to deliver technical/popular lectures and interact with the faculty and students informally.
- **International conferences** in various fields will be organised from Dec. 2007 to March 2009.
- **Major cultural events** where eminent artistes will be invited to perform throughout the year; the local community is invited to participate.

(Nithya Subramanian and Tarun Mathur are third year students of Engineering Physics and Mechanical Engineering Departments respectively. Aishwarya Ramakrishnan is a second year student of the MEMS Department.)

#### FOLKLORE

- A few IITians left their technical education midway and joined the Indian Army during the '71 Pakistan war. Incidentally, the same year the academic structure was reviewed and the credit system was first introduced.
- A central messing system being in place, a union was inconspicuously formed, comprising the mess workers of all hostels. Timing it perfectly, they went on strike a week before endsem. There being no eating joints nearby, it was the perfect form of blackmail. The Institute however refused to buckle and a cooking unit consisting of students and the wives of professors was set up. After three days of the enterprising effort, the mess workers awoke to find the students packing off for their early summer break. Three months later, the striking mess workers had been sacked and new set of workers was in place.
- In March '75, M.S. Subbulakshmi gave a charitable music recital at the Convocation Hall to raise funds for the restoration of the Devi Temple, near which she planted the Bakul tree that stands to this day.

Annual Productions for plays were a prominent feature on the Institute cultural calendar since the very inception of the college. Hindustani music classes in Convo music room were well attended while others thronged rock concerts on campus. The 'Inter-Hostel Entertainment Programmes' were staged in the Convocation Hall by five teams, each comprising two hostels. These EPs of '74 are of course, the PAFs of today.

Quoting from the last yellowed page of the '72-73 Annual Report, "A cultural festival named 'Mood Indigo' was organized from 3-1-73 to 8-1-73. Many universities and colleges from all over the country participated."

We've chronicled the nascent years of our beloved insti here, there's a great deal more to come. Wait on tenterhooks for the next instalment.

## What not to miss this semester?

Gunjan Shah provides a synopsis of interesting professional events, workshops and competitions to look forward to in the Cultural Calendar.

**Tumhaari Amrita** - A love story told through the exchange of love letters spanning 35 years between two people from very different backgrounds. It is a new form of theatrical presentation that challenges all traditional norms of drama and in the process creates a fresh, new way of looking at a play. Original cast included Shabana Azmi and Farooque Sheikh.

**"The photography competition, 'Color Di Vita' will run throughout the semester and hence will be the longest running G.C. event!"**

#### Put on your Dancing shoes!

With the target of having more talented dancers to represent the institute at inter-collegiate festivals and also seeing their dearth at the inter-hostel level, we have Hip-hop and Bollywood and Latin American Ballroom dancing classes being conducted this semester in the institute. The former are being conducted by a high profile dancer and choreographer from the industry, Mr. Rohan, who has over 200 profes-

sional dance shows to his credit. The latter are being taken by Mr. Deepak Singh, who gained fame as the runner up choreographer on the hit TV show Nach Baliye 2 and is now doing a film too.

Classes are being held twice a week on the weekends with a total of 2 hours for Hip-hop and 3 for Ballroom dancing - total strength is 30 for the former and 15 couples for the latter. If these classes meet with success in terms of participation and enthusiasm, plans are to carry them onto the next semester as well. Also with a newly built Dance room to their disposal, it seems as if the institute is soon going to sink in the Dance mood.

#### The Shutterbugs are here to stay!

Under the banner of Pixels, the Photography Club, is being held a novel competition being called Color Di Vita, Latin translation of Colour of Life! This competition requires submission of photos within a fortnight from the day on which the theme for that fortnight was posted at the Coffee Shack. Along with a new theme on the following

Monday, the 15 best entries of the previous fortnight would be put up at the Shack. The competition will run throughout the semester and hence will be the longest running G.C. event!! The photos can be either a soft copy or a hard copy with negative; mobile phone camera photos are also accepted.

**"Alongside, various workshops ranging from Salsa and Dandiya to a Flash and Video editing workshop are happening this semester."**

#### Other New Additions:

In addition to all this, a Hindi Sahitya Sabha by the name of *Vaani* has been established. The Institute will now have a site dedicated to literary enthusiasts with 2GB of archived material and Daily quizzes.

Alongside, various workshops ranging from Salsa and Dandiya to a Flash and Video editing workshop are happening this semester. Attempts are also being made to bring the Inter IIT-IIM quizzing festival *Nihilanth* to IIT Bombay this year.

All these events and activities promise to make this a helluva of a semester!!!

(Gunjan Shah is a third year student of the Mechanical Engineering Department.)

The mistake most make, is to attempt to determine and calculate, with the finest of instruments, the measure of a good film. The Tarantinos and the Coppolas, they know squat. Film making and acting is all about keeping stuff simple.

And Himesh Reshammiya's acting is a revelation. He never intends to put more than the occasional "moaning of a sick goat" acoustic in his nasally enhanced music. He displays a gamut of emotions in *Aap ka Suroor*. Who can forget :

- 1) The intense, constipated, *she-rejected-my-orkut-friend-request* look, which conveys anguish and internal turmoil.
- 2) The non-alcoholic, juice drinking, *I-am-a-Complan* boy expression, which displays Indianness and cultural ethics amongst inter-galactic super stardom.
- 3) The eyes half shut, face contorted, *answering-nature's call* look, to display romanticism and raw passion of a level hitherto unseen.

*Aap ka Suroor* is not a normal Bollywood movie. It is a *Panchatantra* of sorts. A *Himesh Chalisa*.

**Flashback:**

Himesh and his David Beckham-Donald duck combo friend arrive in Germany for a "world tour". Here they are received by the Warren Buffet wannabe manager and the *why-won't-you-look-at-my-face* girl Mallika Sherawat who's only '*khwaish*' is HR. Himesh is swept off his feet by the Complan girl with the *Gayatri Mantra* as her ringtone : 16 year old Hansika Motwani. Slowly, like VVS Laxman between the 20th and the 35th over of an one day international, their pure, unadulterated love grows and its intense subtlety is depicted through some memorable scenes:

- 1) Himesh playing the guitar and singing the *Gayatri Mantra* with the demeanour of a heavy metal vocalist.
- 2) Himesh and Hansika (Rhea in the movie) enjoying some *hole-some* moments

## CAP ka Suroor

Rahul Dash takes his cap off to the superstar who refuses to return the favour.

with a girl having a hole in her heart.  
3) 47 songs. 25 differently coloured caps. (And not one of them is an exaggeration.)

However their ill fated, carbon dated old fashioned love story gets a horrible twist with Himesh landing in jail, accused for murdering a journalist who happens to be her father's daughter. The sting operation video, depicting HR and an assorted movement of his body which would put Prabhu Deva, Shreesanth and Navjot Sidhu to shame at the same time is found and apna *Himeshbhai* is put by the German *Polezei* in prison, discarding his ferocious denial : "*It iz a meeshtake!*"

**Flashback ends. Present day:**

The father, in order to avenge the death of his daughter, takes HR away from the German jail with nappy adjusting ease. And then starts the great Tom and Jerry

chase between HR and the *Polezei*. Here, HR is helped by flying Audis, high levels of cholesterol amongst the Germans and the chaos- theory -confirming appearance of 3 autorickshaw drivers in Germany who are introduced in a Tarantino-Kanti Shah inspired screenplay. And in the end, as in the *Ramayana, Mahabharata* and *Chacha Choudhary* literature, HR triumphs, wins back his powerpuff girl Rhea and dances his way to cinematic history.

There is something about the man that stuns me. *Aap Ka Suroor* got one of the biggest openings in recent history. His songs grace the saloons and salons alike. Whether it is his cap, his nasal nirvana, his total disinterest in the revelation of the female anatomy or his fascination with his own cleavage, Himesh Reshammiya brings in the moolah. And how !



(Rahul Dash is a third year student of Electrical Engineering Department)

Two golden words that have lead mankind through everything under the sun, are your only respite in sticky times during the monsoons and what better place to use them than at Mal-ahar, the St. Xaviers Annual Cultural *Extra-vague-anza!*

Been there, seen it and heard it, but still every year almost unfailingly hoards of IITians flock the sprawling 400 dozen sq feet campus close to CST. For freshers it's the start of something beautiful, for the sophomores a sort of hurdled marathon to the top and for those who believe they can be third time lucky, a renaissance! (For the fourth year stud-ents and those who are older, it's "enter the dragon"!)

For the lack of space and the word limit we must stick to (not a wall, for a change), we regret the fact that we may not write of *Mal-ahar* (or write it off) in full. However, a quick dossier of sorts for those of you who missed it for the good or bad or the greater evil:

**Rules @ Mal-ahar: Jo Bole so Nihaal, Stick to the wall!**

The granddaddy of all of Mumbai's college festivals, for all its *bindaas* events and *jhakaas* nights, is a real stickler for rules.

There are just two rules:

- Rule#1:** Stick to the walls.
- Rule#2:** Follow rule #1.

**Secure-itty @ Mal-ahar: I-pods and WMDs not allowed!**

Once, young collegian, you have mastered these rules...ah of course first you have to prove that you're a young collegian. A valid I-card sometimes isn't proof enough especially if you're a fourth year student (*why are you still in college?*) or a fifth year student (*impossible!*). The trick then is to befuddle them. Befuddling techniques involve arguing in loops for more than a minute so that they call up their in-charge and then arguing with them authoritatively for more than a minute...usually works.

Your youthfulness having been established, bob-pins in your hair can stay but not loose ones. Camera with batteries in it can't be allowed in, but batteries separately and cameras separately can go in. Camera

## Rage Mal-ahar

Tannishtha and Aakash share their love and longing for the IITians' (second) favourite college fest.

phones have to be switched off (Stern Warning!). Sharp objects aren't allowed but long nails are.

**Rage-is-station @ Mal-ahar: Aap qatar mein kyun nahin hain?**

At the next hurdle, you are faced with "*But there are five teams from your college already, who is who? Why are you OTSE (On the Spot Entry)?*"

By the time they eventually dig out their rule book and figure out there's nothing wrong with even infinite number of OTSE's from the same college, you can go watch street dance, cheer for an arbitrary troupe that doesn't know how to dance but is doing something (and an awesome something at that!). Care to guess that college's name?

You can always try and win the battle with other participants, but you may never win the war against the over privileged *Mal-ahar* organization. So do not start calculating IQ's, just dive in!

**Maal-ahar @ Malhar: The prizes and the lack of it**

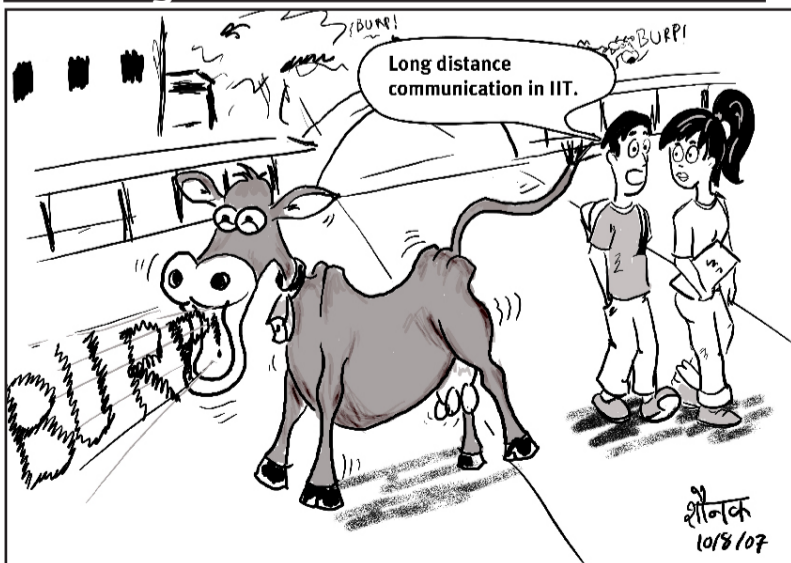
Eventually you do get to take part in some events. Sometimes you win sometimes you don't. When you lose you write articles like this and say the event and everything associated with it was stupid. When you win, you smugly gloat, but write articles like this anyway, 'cause all you won is half a pair of yellow slippers.

**Love @ Mal-ahar: And finally Doctor Strange Love**

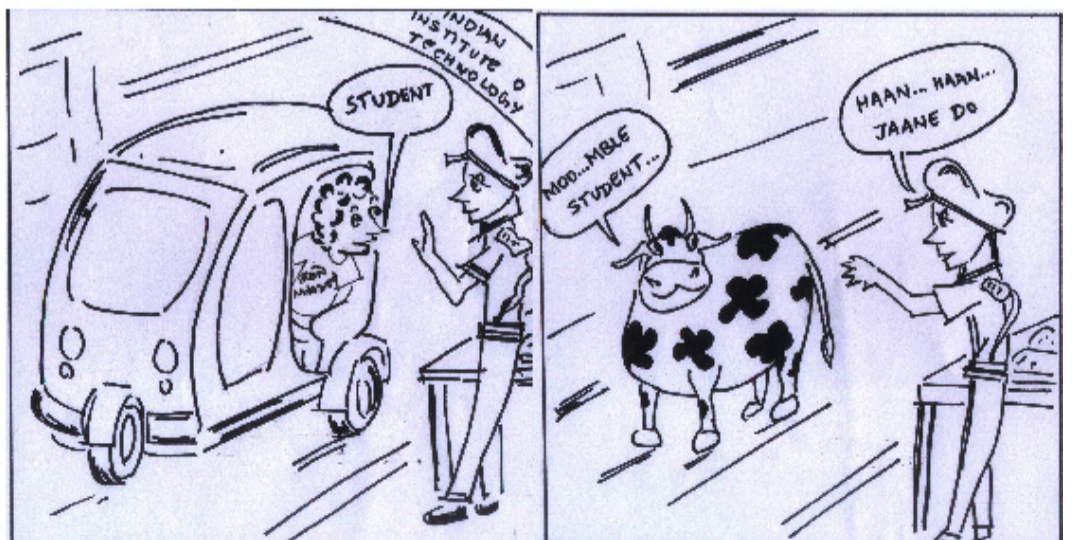
There's Umang, Kaleidoscope, Chaos, Unmaad... but Malhar is always special. It's in a league of its own (fourth dimension after all). And we wouldn't take a shot at anything else with as much enthusiasm. All said and done, we love Malhar, we've all got different reasons for it and sometimes it's a strange love but there it is... the writings on the wall and I shall stick to it!

(Tannishtha Sanyal is a fourth year student of Aerospace Engineering Department and Kumar Aakash is a third year student of the MEMS Department.)

**Insti-gator - Part 1 - by Shaunak**



**Insti-gator - Part 2 - by Srivathsan**



## Energy Management System

**Who:** Led by Prof. Shashikanth Suryanarayanan of the Mechanical Dept.

**Technically speaking:** Prof. Shashikanth Suryanarayanan and his team have developed a low cost solution for petrol engine management systems of two and three wheelers that vastly reduces hydrocarbon emissions, increases fuel economy and at the same time is considerably cheaper than any solution available in the present day market.

While all Internal Combustion Engines (ICEs) use the combustion of a fuel air mixture to generate energy and drive a piston, the key lies in optimizing the ratio of fuel to air in the mix. As byproducts of the combustion .Nitrogen oxides, Carbon-monoxide and several Hydrocarbons are produced. Now these byproducts are first treated in the catalytic converter before being released as exhaust. Now comes the crux- the Nitrogen oxides have to be reduced to Nitrogen and Oxygen, while the Hydrocarbons and CO have to be oxidized to Carbon-dioxide and water. To achieve this optimally, one needs to have just the right amount of fuel-air ratio to start with.

## Why Tech?

The world outside looks at IITians as geeky and nerdy characters. While that description may not suit us up to the T, there is no denying that extra-curricular Technical activities ranging from Coding to Robotics form an essential part of our lives. These activities provide an excellent outlet for our creative skills and innovative abilities. A great deal of useful knowledge and experience is gained in the process, along with lessons in managing time and money, team-work and healthy competition. Above all, they are an amazing lot of fun, and the thrill of achievement one gets is hard to parallel.

The previous year saw a phenomenal improvement in the Tech scene at IITB. A general rise in awareness and enthusiasm led to us winning great laurels in the country and outside. We won the overall trophy at VJTI's Technovanza 2006 as well as TechFest 2007, of which the magnitude and level of competition can scarcely be exaggerated. IITB also won the First position in the Non-US category at ASME (Chicago), and Second position at Robocon India.

**D**ifficult questions plague many budding entrepreneurs: How do I get started? How do I raise money? Is this really a good idea? Can I risk my placement? In entrepreneurship there are no right answers. But it does help to have some place where one can get answers and advice on some of the most fundamental concerns of starting and building a venture.

The National Entrepreneurship Network (NEN) has launched a new set of programs - the NEN Catalyst Programs to directly support students interested in entrepreneurship. NEN is not new to students - it is already working with more than 225 academic institutes across India helping them build world class entrepreneurship programs on their campuses.

The Catalyst Programs are designed for anyone who wants to turn dreams into reality. For budding entrepreneurs this means on-ground and online support through practical and real world information on [www.nenonline.org](http://www.nenonline.org); access to experts, skill building activities and networking. The programs are aimed at helping new entrepreneurs understand the key issues involved and the implications for them.

## Research@IITB: Alive & Kicking

Nithya S. and Rutika Muchhala present the next in the series of what's cooking in the research labs of our departments.

Now when the driver of a scooter or an auto twists the throttle, what he's increasing is the amount of air fed to the engine. So what's left to control is the fuel injection, which is where Prof. Suryanarayanan's Engine Management System (EMS) comes in.

His team has simplified the EMS to the maximum extent possible, limiting it to only three sensors. They have in fact proven conclusively, that the sensing architecture for small petrol-powered vehicles supporting fuel injection operation can't be simplified any further than this. The new system has been tested on a transient dynamometer bed in a new lab constructed in the Department of Mechanical Engineering. The system has also been tested on an industry-standard chassis dynamometer in the TVS Motor Company. An invention like this is a breakthrough, a totally indigenous product that is far more economical and efficient than present-day imported solutions.

## Biosensors

**Who:** Led by Prof. Soumyo Mukherji of the School of Biosciences and Bioengineering.

**Technically speaking:** Biosensors have at least one integral component that is biological in nature, such as an enzyme or DNA. They can measure non-biological quantities and convert them into electrical signals.

**"An exciting application is the 'Electronic Nose', which can sniff out poisons, industrial pollutants or even odors, which may be telltale signs of an illness."**

This project, headed by Prof. Soumyo Mukherji of the School of Biosciences and Bioengineering currently aims to observe the kinetics of reactions as well as test for pathogens in water and air.

The latest research on Surface Plasmon Resonance based biosensors has made possible the detection of micro-unit changes in Refractive Index! Biosensors will have some serious future implications. They will make a doctor's life much easier, with the development of pill-sized computers to monitor the patient's health.

Smart sensors translate into considerable improvements in the speed and quality control of food, beverages and drug testing, which means no more worries about contaminated food. An exciting application is the 'Electronic Nose', which can sniff out poisons, industrial pollutants or even odors, which may be telltale signs of an illness.

**Fast-forward:** The army can now create clothing woven from conductive polymers that can provide data on the wearer's injuries! Biosensors can recognize when and from where a soldier is bleeding, depending on the oxygen content in the blood.

(Nithya Subramanian is a third year student of the Engineering Physics Department and Rutika Muchhala is a third year student of the Electrical Engineering Department.)

## The T in IIT - An overview

The Overall Coordinators of TechniC, Shyam and Ashish, describe the current tech scene in the institute with a looking glass towards the future.

Impressive as that may be, we consider it only as a beginning, and a lot more is expected from the present batch of Freshers, for they form our *avant-garde*. The ignition has already been done with the Tech Weekend on 18th and 19th August, where the participation at Formula One, overwhelming in terms of both quality and quantity, was most promising. Seeing 300 freshies in the OAT with working machines was awesome! We strongly hope to see the same enthusiasm in all future events.

## What lies ahead

The Techie can choose to stay as busy as s/he likes. Soon to come are events like *Schwarzenegger*, *Prayog and Chemsplash* - competitions in structures, physics and chemistry. In October we'll also have intras for Shaastra - the IIT Madras festival, and Nexus, for our own TechFest. Besides, there are Technical festivals in

various colleges in Bombay every now and then, where the resourceful Techie can not only sharpen his skills but also make good money.

In the following semester there will be more competitions related to Coding, Circuits and Electronics, Hacking, Reversing, and a LogicQuiz. In January we have TechFest, the daddy of all Festivals, where you can test your mettle against the best robotics enthusiasts of the country, or attend lectures and workshops on a plethora of topics. The year ends with the extremely thrilling Inter-Hostel Robowars.

There are also the five clubs under Science Club - Aeromodelling, Astronomy (*Krittika*), Electronics, HAM (Amateur Radio) and Papers Club - where one is sure to find something of interest.

And, if you wake up one night with a brain-

wave, the idea that the world has been waiting for, only to find next morning that there's no way you could complete it by yourself with your own money - Worry not! UMIC, the innovation cell of IITB, handles such innovative projects, besides managing participation for Robocon and ASME.

There are a lot of exciting new initiatives that are coming up this year as well. For example, work has just started on IIT Bombay's first race car. So, if you have the passion and the willingness to learn, all you have to do is **wonder, think and create!**

## Some useful links:

- <http://gymkhana.iitb.ac.in/~technic> (TechniC - that's us, your friendly neighbourhood Technical Club. Do keep checking our website!)
- <http://www.techfest.org> (TechFest 2008)
- <http://www.techfest.org/nexus> (Nexus)
- <http://umic.iitb.ac.in> (UMIC. Also for Robocon and ASME)

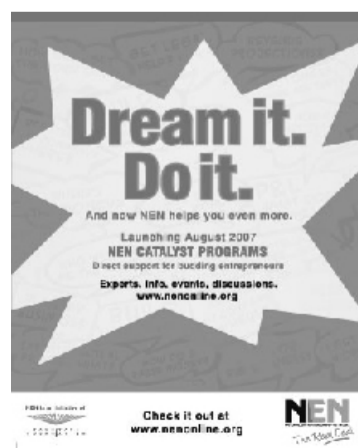


## The all new NEN (National Entrepreneurship Network) Catalyst Programs

For budding entrepreneurs

Some of the topics to look forward to on the website in the coming months include: 'Angel Investing'; 'Intellectual Property'; 'Building a Team'; 'Getting Started' and 'Product Development' to name a few.

NEN will be partnering with well known experts on a range of topics. The NEN experts for Venture Capital include five of India's top VC's: Balaji Srinivas, Managing Partner, Aureos Capital; Kanwaljit Singh, Managing Director, Helion



Ventures; Avnish Bajaj, Founding Managing Director, Matrix Partners, India; Alok Mittal, Executive Director, Canaan and Bharati Jacob, Managing Partner, Seedfund

The idea behind this is to enable students who want to be entrepreneurs to make more informed decisions, and most of all, be prepared themselves for the challenges that lie ahead. In addition, the Catalyst programs will help build a network of

potential entrepreneurs with venture capitalists, angel investors, and other experts

from the entrepreneurial community.

"We are very excited about this launch, and we look forward to feedback from students. ....The main goal of the NEN Catalyst Programs is to put students on the right track before they make their actual transition into the 'real world'," says Laura Parkin, Executive Director, NEN.

The benefits of the NEN Catalyst Programs can be availed by any one who is an NEN Member. The programs offer a unique add-on to the entrepreneurial experience on and off campus as they provide a platform for students and individual members to have their say, and closely engage with experts and the entrepreneurial community.

Access to a whole new range of resources on the different areas of company starting and building, is now available to new and future entrepreneurs through the NEN Catalyst Programs. Log on to [www.nenonline.org](http://www.nenonline.org) today.

(This is a promotional article only. Please note that *InsighT* is not associated with any of the activities/initiatives mentioned herein either directly or indirectly.)

# Twice upon a time

Vaibhav and Eeshan take you back to the future once you are done with the past.

And tonight, on "Believe it not", we have a special guest, **Chronus Moment** – who claims to be a... well, time traveller.

**Q. How do you do, sir?**

A. You mean how am I doing right now, right? Good.

**Q. So, do you really think that time travel is possible?**

A. Of course! It is the most possible thing ever! And I mean ever. The details have been with you all through – albeit, with a little intervention from the future - Kurt Gödel proved that Einstein's theory of relativity automatically implied time travel. But you simply wouldn't believe him.

**Q. Why do you not run into one of those paradoxes? Let's say you travel back in time, and accidentally, or deliberately, kill your grandfather before he meets granny. Since this would cause one of your parents (and by extension, you) to never be conceived, this would imply that you could not have travelled back in time after all, which in turn implies that your grandfather would still be alive, and that you would have been conceived, allowing you to travel back in time and kill your grandfather.**

A. I have always loved my grandfather. Not to mention, there's Novikov's Principle to take care of.

**Q. Hold on. Did the Russians win World War III? I mean, who's the Novikov chap, anyway?**

A. Any six year old worth his kindergarten certificate will tell you what Novikov's Principle is. Stated simply, the *Novikov self-consistency principle* asserts that if an event exists and that would give rise to a paradox, then the probability of that event is zero. So no matter what a time traveller might try to do he will always end up accomplishing consistent non-paradoxical actions. You need to read more science-fiction, dear.

**Q. It's all very well for Novikov to talk through his *ushanka*, but has he ever tried renting a room at The Taj? Even a time traveller needs money here, mister.**

A. Oh, that's easily taken care of. All of us in the future have had have an account set up at The Big Bank. We deposit an *Elbonian* Rupee, and set out to take some time off. Despite abysmally low interest rates, the money has always multiplied so that we have a billion *Elbonian* Rupees at our disposal, whenever we are.

**Q. So does your memory remain intact when you travel through time? If it does, there are a few scientists waiting outside who would like to have a word with you about something called a Grand Unified Theory.**

A. Yes, my memory remains. Although everybody else's memory is supposed to be modified so that they never realize that somebody has travelled through time, this God fellow doesn't live up to his name sometimes. Some people's memories are retained when they're not supposed to. I believe you call it déjà vu.

**Q. Wait a minute! Where does God come into this?**

A. Good God! You don't know about that? In the 26th century, time travel was the 'in' thing. People went back to unimaginable extents in time. Of course, their simplistic gadgets were misinterpreted as superhuman powers.

**Q. Do you mean...?**

A. Yes, I do. All the Gods you worship are merely people

from the future, on long vacations. Didn't you ever wonder why you did not have any time tourists? Their disappearances in puffs of smoke are excessively well documented. Actually, I think a guy called Stephen Hawking did; but he didn't have enough prudence to link it to God.

**Q. Let's get this straight. Are you telling me that our gods, all the varied figures from our rich mythologies, are just normal people from the future?**

A. Yes – Grandpa.

(Vaibhav Devanathan is a third year student of the Engineering Physics Department and the Institute Literary Secretary. Eeshan Malhotra is a second year student of the Civil Engineering Department.)

## Adverse Effect of Time Travel - 23

Imagine that someone invented time travel. The outlook would not be uniformly rosy for everybody, as this might show:

**Petition from the B-movie star guild of India, to the Time Travel Committee:**

Dear Sir,

We have a complaint to make regarding time travel. It is evil. It has forced our most famous stars to go back to their bus driver roots. No one watches our movies anymore. If you want to know the reason, read through the following scene. We have used them time and again, and they have never failed - until now.

**Scene:**

**Villain:** sitting (with switch) in a mansion. A few scantily clad females flit about.

**Hero:** Tied and struggling.

**Heroine:** Strapped in an electric chair in a dungeon 5 km. away from the mansion.

(**Note:** The wires from the villain's switch connect to the electric chair)

The villain screams '*Bijlee*' and presses the switch. The hero screams the heroine's name and the ropes fall off his body (This is logical: Everything fears a 300-pounder). He kills the villain and rushes to a horse (You must assume that all villains' mansions have a saddled horse on standby in the hall). The horse is conventionally named *Sultan*.

The horse and rider then pull off the ride of their lives, racing against electricity, no less. (Aside: The electric current is shown as a blue dot traveling on the wire. Yes, I vaguely remember that electricity is a continuous flow of electrons, but I am no physicist). The rider keeps talking to the horse and telling him that they have to beat the current and save the heroine. The horse keeps nodding intelligently and dashes into the dungeon a length ahead of the blue dot, in time for a touching reunion. The electricity is presumably too polite to intrude on their tête-à-tête, because it waits fully five minutes while the heroine is extricated from the chair before making its entry (again as a blue dot traveling on the wire) and causing the chair to burst into flame.

**Epilogue:** Wedding, with the horse as the chief guest.

**Complaint:** This was the scene that once took our actors to the next level which marked their transition from star status to God status. Now, it is the scene at which people laugh contemptuously. The actor could just have gone back half an hour; he could have freed the heroine, killed the villain and danced in a song or three. Time travel has killed this thrilling chase.

## InsighT team

Chief Executive Editor  
Karthik Shekhar

Chief Editor  
Vivek Upadhyay

### THE EXECUTION PANEL

Aaditya Ramdas, Abhinav Mohan, Aishwarya Ramakrishnan, Archana Raja, Arunabh Sinha, Asgerali Masalawala, Ashish Goel, Ashwath Krithivasan, Deepti G., Eeshan Malhotra, Gautam Salhotra, Gunjan Shah, Gurveen Bedi, Kumar Aakash, Krishna Ramkumar, Mallika, Miheer Desai, Nithya Subramanian, Onkar Dalal, Rahul Dash, Rajat Chakraborty, Rajlakshmi Purkayastha, Rohit Vadera, Ramya, Rutika Muchhala, Rylan Henriques, Sheta M., Shaunak Samvatsar, Siddhartha Das, Srivathsan B., Sudeep Kamath, Tannishtha Sanyal, Tarun Mathur, Vaibhav Devanathan, Vidushi Jain

If you would like to join the InsighT team and/or give feedback, feel free to mail us at [insight@iitb.ac.in](mailto:insight@iitb.ac.in) or visit our website <http://gymkhana.iitb.ac.in/~insight>.

## Questech

### Going in Cirles

Given a number, a new number is obtained by moving the last digit of the given number to the start of the number (example: 12345 becomes 51234). Find the smallest positive integer such that this new number formed is larger than and is an integral multiple of the original number. Both the numbers are written in standard decimal notation, with no leading zeros.

### Unlucky 13

Consider a 50 digit number with all digits 1 except the 26th digit. The number is divisible by 13. What is the 26th digit? Please provide explanation along with the solution.

(Mail the answers to [onkardalal@iitb.ac.in](mailto:onkardalal@iitb.ac.in) with "Questech" as the subject. The early bird gets its worms at coffee shack.)

## Word Games

### Hidden words

If I gave you the sentence "The Oman Government is a good one." and ask you to find the name of a fruit hidden in it, you would be able to find the word 'mango' in 'The Oman Government'.

Find names of nine places in Mumbai hidden in the two paragraphs below. One of the places occurs twice.

"One rule that one must never forget is that one's apparel must always be impeccable. My children often correct me, shouting "Dad, a red shirt does not go with those trousers" or "Pa, relatives are coming home today". On the fifth, a new era started. I decided to perform a role which was unfamiliar to me – that of a natty dresser.

I was looking for a shop in Spain called 'Him and Her.' I went into the building and asked the receptionist where it was. "Si, on the first floor, straight up. O wait, it might be on the second. Ecstatic, I got into the lift."

(Mail the answers to [vaibhavdevanathan@iitb.ac.in](mailto:vaibhavdevanathan@iitb.ac.in) with "Word Games" as the subject. Likewise.)