

DOSA SPECIAL!

*PROF. C. AMARNATH has taken over as the new DEAN, STUDENT AFFAIRS. He was interviewed by **InsIghT**, where he commented upon the present state of student affairs, his expectations and his vision. Here are some excerpts from the interview.*

Q. InsIghT: What are your views on the current state of student affairs in IIT Bombay?

A. DOSA: I do not think there are any problems of major concern. But there are always minor concerns. Especially, when I look at things in the longer run, some of these are not healthy. The IITian who walks in has tremendous enthusiasm and eagerness to learn but not many leave with the same feelings - which means something is going wrong. Students have a positive attitude when they come in but develop a cynical attitude by the time they pass out. This is my major concern.

Q. InsIghT: Why has the 80% attendance in classes been made compulsory?

A. DOSA: The rule has always been there - so also many others like the 7.30 to 7.30 rule worked out by my predecessor. Faculty are becoming stricter in implementing these rules. In the last 4 to 5 years, we have noticed that students are not regular; there are many absentees in many courses.

Q. Insight: What, according to you, could be the reason why students miss classes? Could poor teaching be one of the reasons?

A. DOSA: There have been innumerable instances where students have cited working for **PAF or GC** as a reason for missing classes. These are unacceptable excuses. Extra-curricular activities should not hinder studies. I also agree that a student might not be enthused by a particular subject or a particular teacher. But numerous teachers including many of those rated highly by students themselves, complain of a sharp decline in attendance. Every institution has good teachers and poor teachers. Students should realize that by their incessant quest for knowledge, and enthusiasm they can turn any teacher around into an excellent one.

Imagine a class full of dull students - do you think the teacher would be enthused? A class, full of bright but unenthusiastic students, has the same negative effect on a teacher. When students miss classes there is a gradual erosion of interest - both teachers and students begin to lose interest.

Q. InsIghT : Don't you think extra-curricular activities, eg. PAF, are an important aspect of life in IIT? Don't you think they give students a chance to demonstrate their competence in varied fields?

A. DOSA: They are extremely important, but then, we do not seem to be worried about the image (of IIT) we are projecting? Are we projecting an image that we are a **CLASS APART**? Where is the quality?

Look at people at the top of their fields in our own country. They have a unique philosophy, an approach, knowledge, wisdom, creativity, conceptual abilities and a willingness to experiment. I expect the same from students at IIT. Would it be asking too much from an IITian given the fact that we all claim that IITians are the Crème de la crème. The creativity and the willingness to explore must show both in academics and in extra-curricular activities. In whatever you do you should set an example for others to follow. How nice would it be to hear "*What IIT Bombay does today, rest of the world does tomorrow.*" Over the years I have seen numerous students cross the line between mediocrity and excellence. I do not see the same number now either in academics or in extra-curricular activities.

Q. InSIghT: Aren't you expecting perfection from students?

A. DOSA: Every time Tendulkar comes in to bat, you expect a century from him. When he does not score one, he is scoffed at. What is wrong if I expect that from IITians? Some students tell me Tendulkar is a genius and we students are not.

Then what are you? There is a "*genius*" in every person. One has to strive to bring it out. (Ask Tendulkar) Why are you settling for the mediocre? Change the way you look at things.

Q. InSIghT: Do you think fewer extra-curricular activities will ensure better academic performance from students?

A. DOSA: It is not "*fewer*", "*Quality*" is the word. Organize quality activities and let people shine. What would Tendulkar have been if he had joined IIT - ponder over this please. He would have been as meticulous in his studies as he is with the bat. He would have tried his best. The quest for perfection would have shown through both in academics and cricket - with one complementing the other.

If one is a nine pointer and also plays tennis for IIT, what more can one ask for? Every student should have a multifaceted personality and he should be able to show **CLASS** in everything he does.

Q. InSIghT: But not everyone can be a 8 or 9 pointer...

A. DOSA: Most students have not discovered their talents because they have never experimented with anything other than textbooks. (Wonder whether I am right in stating this!) Worse still, they are not even trying. Cut down on unnecessary things. Discover your strengths and weaknesses and act.

Q. InSIghT: It is a general feeling among the students that the new Dean is concerned only about academics....

A. DOSA: All I said is "*Reorganize the extracurricular activities, bring in quality and ensure that there is no compromise with regard to academics.*" This place should NOT become a monastery. My aim is to provoke you

and to force you to re-examine the things you are doing. I would not mind five mistakes made by you in your attempts to be creative, but do not expect me to applaud successes in what have become routine and insipid exercises mindlessly executed.

Students should debate such matters in a big way - given the strong provocation from me. I would like you debate, to experiment and show that you are a **CLASS APART** - a motto for you. It will help you change for the better. The fear of failure is very high among today's youngsters, bred as they are upon success stories in textbooks - one should remember that textbooks never dwell upon failed attempts.

For example students do not want to let go of the GC. (That there has never been a GC for Acads is another matter) GC has a terrible grip on your minds - a grip like that of an octopus. Did you make it to the IIT or did you make it to your Hostel when you cleared JEE ? It is time students put IIT above the hostels. Students must uphold and enhance the image of IIT, by showcasing their brilliance, and demonstrating that they are a cut above the rest.

Q .InsIghT: When a student lives in a hostel for 4 to 5 years, a sense of belonging develops naturally. Is there anything wrong in it?

A. DOSA: Plentifully wrong. You should put IIT above all - IIT is greater than all of us individually and collectively. When you go out of IIT, you say you are from IIT - you do not state that you are from a particular hostel.

IIT is a wonderful system and should remain so for centuries. To do so all of us should put in positive things into the system and this would serve to propel IIT to greater heights. One gets a lot out of IIT just by being at IIT - society respects all those associated with IIT. One should hence give back something positive to IIT to compensate. When we take a lot out, a zero return to IIT would lead to its gradual decline - negative inputs to IIT would hasten this decline. I think one should not destroy the fair reputation of IIT through mindless activities. There are several universities in India, once known as centers of learning, which have been ruined through mindless activities. Their alumni feel embarrassed to mention the name of their alma mater. We should learn a lesson from such historic examples and resort to periodic mid-course corrections, long before any decline sets in.

Q. InsIghT: What changes do you seek?

A. DOSA: That is something I would like the students to tell me. Let students debate and come out with creative ideas. I am confident that IITians can come up with bright ideas, but unfortunately they do not appear to be ready to do so.

- My stand is **NOT - NO festivals, NO GC....**
- My stand is - **NO festivals, NO GC, NO TILL YOU RE-CREATE.**

I am patient and I can wait! I have, in earlier years seen radiant smiles in the faces of of IITians, but now every IITian wears a cynical smile. I would like to see those radiant smiles back on your young faces.

Despite this I still retain a tremendous faith in IITians, a faith borne out of my day to day interaction with students in their creative activities - I can quote innumerable examples which make me believe so. Here is a huge pool of idling talent - shackled - because of its own reluctance to experiment, a reluctance borne out of fear of failure. But I still have faith in you youngsters - time and again many of you young people have demonstrated it to me. I want to see students full of optimism - radiant, young, confident and happy faces with non-cynical smiles. If not at this young age, at what age do you suppose you would be able to display radiant, and happy faces.

Right now, your hostels dominate your entire thought process not just your day-to-day life. . I fear the hostels are converting bright young faces into cynical conceited clones. The GC has gripped you youngsters and is conditioning you. I wonder whether GC demands excellence.

In one booklet of yours distributed recently to freshies (the words "*freshies*" and "*sophies*" - we could be more original, is it not) you write

"Ask not what the hostel can do for you, Ask what you can do for the hostel"

How nice would it be if it were to read, *"Ask not what IIT can do for you, Ask what you can do for IIT"* **IS THIS TOO MUCH TO ASK of YOU all.**

Q. Insight: How do you see IIT 20 years from now?

A. DOSA: If things go the same way, it is a matter of worry. There must be a change. We are facing a world that is changing very fast. The academic side of the institute is attempting to change - I do not think the same is happening in the hostels. We have to change to make a difference - and put academics where it belongs - in the front bench. When academics deteriorate, many other problems crop up, which might affect the institute severely in the long run.

Let us all remember that our IIT is a paradise, let us preserve it that way, an academic paradise; and ensure that IIT is also a "*positive personality building paradise*" in parallel.

Convocation 2002

Of all the annual events of IIT Bombay, one event that goes least noticed is perhaps the Convocation. Although the most important of all events, it usually loses its due share of news to the buzz related to the new entrants on campus... the freshies. Well, did some one say 'The world salutes the rising sun'?

IIT Bombay witnesses its 40th Convocation of the Institute on 9th of August, 2002. Mr. Nandan M. Nilekani, CEO, Infosys Technologies Ltd., Bangalore will be the Chief Guest and deliver the Convocation Address. Mr. Nandan Nilekani has been one of the illustrious alumni of IIT Bombay. He obtained his BTech in Electrical Engineering in 1978 and was General Secretary (Cultural) in the student government.

At convocation the recipients of degree are expected to wear traditional attire. White Kurta and pyjama for gents and White Sari/ White Kurta Salwar for ladies. This is to be accompanied by an 'Uttaria' issued by the institute. From this year onwards, the Uttaria can be kept by the students as a memento of their convocation. An interesting point to note in the invitation for the convocation is... 'For footwear: Students should have shoes or leather chappals or leather sandals. No one should wear hawai chappals or bathroom slippers.' Goes only to show the carefree attitude and lifestyle that an IITian adopts during his/her period of stay in IIT.

It is only twice that the entire batch of students (along with their parents!) sits together in the convocation hall with the heads held high... once after clearing the JEE and now during the convocation. It is an event that has a special place in the heart of every IITian and has unforgettable memories attached to it.

Convocation is a platform from where IIT presents the world its brilliant technocrats and engineers. With our students making to the top companies for jobs and the best universities for higher studies, they are all set to take the stage. With yet another new step (or should we say a leap?) in their lives, they are ready to excel in a new world. After all, some one did say that 'The world salutes the rising sun'. We all bid a farewell to yet another wonderful batch.

Here is the list of all students who will be receiving Gold medals, Silver medals and other awards at the convocation.

President of India Medal

B.Tech. 2001-2002

Dilys Thomas-- Computer Science and Engg.

Institute Gold Medal

B.Tech (Dual Degree) 2000-2001

Aditya Dua-- Electrical engg

Silver medals

Chinmay Karsandas Patel-- Aerospace engg

Mahendra Chhabra-- Chemical engg

Singhi Pranaykumar Sharad-- Civil engg

Borade Shashibhushan Prataprao-- Electrical engg

Karnik Rohit Nandkumar-- Mechanical engg

B Sreekar-- Metallurgical engg and Materials Sci.

Rishi Sharma-- Engineering Physics

M.Sc programme

Arindham Pal-- Applied Geology

Iyer Janaki Kannan-- Biotechnology

Prabhuddha Mukherjee-- Chemistry

Hogadi Amit Pratap-- Mathematics

V. G. Krishnamurthy-- Physics

Hrishikesh Vidyadhar Kelkar-- Physics

Vineet Aggarwal-- Applied Statistics and Informatics

M.tech(DD programme)

Ghate Gevendra Prakash-- Aerospace engg

Ankit Singhvi-- Chemical engg

Aditya Dua-- Electrical engg

Shodhan Rao -- Mechanical engg

Anu Chandan-- Metallurgical engg and Material Sci.

Other medals

Miss Jayanti Deshmukh Memorial Gold medal -- Dilys Thomas

Rajit Bhagwati] Memorial Gold medal -- Ms. Sheeja Jagadevan

ISRE(India chapter)ERTL(W) Bombay Gold medal-- Yogesh J Pitkar

Dr. Shankar Dayal Sharma Gold medal-- A G Krishnakant

Hindi Vidyabhavan Gold medal-- Vishnu S Ramachandra

Placements, Misplaced !

- *Kislay Thakur with inputs from Anand Ramesh and Abhishek Agarwal*

"Can I sit in Infosys for practice and then give them a regret letter the next day?" Are you wondering who could have such a complacent attitude in a time when the economy is on a downturn, and markets have hit a rock bottom? Well, it came from a person who is supposed to represent his class for placements, a post better known as that of the "placement representative". Another student on being asked whether he would be joining Infosys, the company that had recently recruited him, grins and says, "No, that would be the last of my options". That essentially sums up the general attitude that the students have even when the placements have just commenced.

This is my birthright and I shall have it!

Most students want to apply for jobs for "security". There have been numerous instances in the past when class toppers had taken up jobs in software companies like Sapient, Webtek, etc, despite the fact that most of them had an inclination to app. They took jobs they would not join even in their dreams, thereby, denying an opportunity to a fellow student. The question here is essentially ethical. If one is determined about apping then why must he eat up a job? It might be just a backup for him but "The Job" for someone else. Class toppers feel that app is something that they cannot rely on; they fear they may or may not get the university of their choice. A problem like this can be sorted out by co-ordinated apping. Like IIT Madras, where there is an informal apping cell, whose success can be inferred from the fact that most of those who apply, get a scholarship. We too could have something on similar lines. Prof. V M Gadre of the Electrical Engineering department goes on a little further, "Why have an apping cell alone? It would be better to have a career cell that can guide the students and help them to choose a career path that is best for them based on their interest and aptitude".

Another fallout of this take-up-job-but-do-not-join syndrome is the reluctance of companies to recruit undergraduate students from IIT. Every year, around a fourth of the companies that come for the placements get disgusted by the low joining rates and as a consequence decide to ignore IIT Bombay during the next placement season. Many a time, students have simply broken off all communications with the company that recruited them without even bothering to send a regret letter which is the least one can do for the company that offers him/her a job. ITC has indicated that it may not participate in placements this year because the joining rates here have become a major concern for them; and this is just one of the more "visible" cases.

The problem seems to have assumed alarming levels. It is now being discussed that students who don't join a company after being offered a job would be made to pay some compensation, similar to what happens when a company revokes its job offers. The placement office is hopeful that this would act as a deterrent.

Faculty Involvement in Placements

There is a general feeling amongst students that the Placement Advisory Committee too has failed to play the active role it needs to. Considering the fact that this committee is supposed to oversee the working of the placement process, suggest measures to be adopted to have a better season and discuss steps to improve the overall process, one can easily predict the lackadaisical attitude of the faculty. How many professors are actually aware of the kind of placements that occurred last year? Have they bothered to enquire? Should the faculty not help in getting more jobs for students, especially in such times, through their industrial contacts? Prof. Sanjay Mahajani of the Chemical Engineering department says, "The faculty would love to help the students. In fact, many professors do. But the problem is that companies are hesitant while recruiting BTech students. Most of the time they find the Btechs unreliable and would prefer MTechs over BTechs". The interesting bit is that the companies feel, Why IITians after all? They say they could get reasonably good engineers from other engineering colleges too, who are more likely to join the company and stay with them for a longer time. Earlier, the IITs did not have much competition, but now, quite a few engineering colleges have built a good reputation, have good resources and good students. Prof. Mahajani feels, "Now, when the economy is down, students are turning towards core engineering sector, asking the professors for help. But would the situation remain the same once the economy bounces back? After all, when a professor gets a job for a student, his reputation is also at stake". Prof. Gadre concurs with him, "Faculty can help, but students should be willing to respect the jobs. It has to be done with care because it also affects the reputation of the professor concerned."

Talking on the openings available to the students, he says, "Students at IIT have a fixed perception about openings available to them. Rarely do we find IIT BTechs taking GATE. Even in such times when the economy is down, students are reluctant to take GATE. Taking GATE is definitely better than being left high and dry." He feels that, in this respect, students' attitude must change.

Non-Cooperation Movement

The attitude of the administration towards placements seems to be that of sheer apathy. The new placement office in "Gulmohar" was expected to

be functioning by now. The building is ready, but apparently, the furniture is missing! Despite the fact that the money has been sanctioned, there haven't been any purchases. Placements do not seem to be on their priority list.

All said and done, the plight of placements is pretty much an outcome of the take-it-easy and take-it-for-granted attitude of the students over a long period of time and it is none other than us who can do anything about it. "In competition, individual ambition serves the common good", said Adam Smith. But times seem to have changed. John Nash's "The maximum benefit to a group can be realized if each individual works for his own benefit and the group's" seems to be more relevant in today's context.

CAN(NOT) BANK ON CANARA

The services offered by the Canara Bank on campus have left many people dissatisfied. Karthik's' Narayanswamy and Ramkumar look into the bank system at IITB.

Date: 17th July 2002

Time: Around 1030 am

Venue: Outside Canara Bank

Cast: Disillusioned parents, irate students & clueless bank officials

Over 300 people struggling to enter the new and improved Canara bank. **Opening an account** takes over three hours. Two hours to withdraw cash. Harassed parents being pushed from side to side. No one knows which line to stand in or what to do. Disgruntled parents hold the Canara Bank guard by the scruff of his neck. Looking at the ensuing ruckus, a bank official flatly refuses to go out and distribute account opening forms. In short, utter chaos rules. "It reminded me of my school days when I used to fight to get a ticket for a match between Mohan Bagan and East Bengal", a parent euphemistically described the scenario.

On being asked to recollect "*the day*" a couple of freshers said, "*The experience was harrowing. More so for the poor guard who was crushed by the crowd. The authorities should have realised that the number of people would be large and hence should have had better arrangements like opening the accounts on earlier dates or organising department-wise fee payment.*"

On the same day, a disgruntled parent stormed into the manager's office questioning the way Canara bank operated. He said that he had been waiting for over 45 minutes to withdraw cash and was appalled by the service at Canara bank. But what he said at the end hit the hardest. He indicated that the students may have taken this service lying down, but he as a parent would not take such pathetic service for granted.

So the question arises again. Is the bank taking us for granted? Are we just a bunch of students who give the bank a lot of business and get nothing in return? Is there another side to this story? Ask any IIT student what he thinks about the service at Canara Bank. The opinion seems to be unanimous. To bluntly (and alliteratively) put it - **the service sucks**. The tellers and cashiers are slow and at times impolite. In fact, given a choice, most students would rather close their Canara bank accounts. To quote a final year student, "*We are customers and they are providing a service. No one is doing the other any favour. All we ask for is a basic level of service and facilities. We are not interested in their problems. When we give them*

our money, we expect service from them and if they want to retain us, they had better deliver."

It was no wonder when it was lately informed that the Canara Bank Extension Counter would now be a full-fledged branch, the institute breathed a sigh of relief. Hopes of a much-needed boost in service were, however, dashed with the situation remaining the same if not worsening.

Before the change to the full-fledged bank, all the paper work used to be done at the Canara Bank in Sakinaka. This meant that it would take an extra day, if not more, for any transaction. The idea of changing the extension counter to the full-fledged bank was to have "quick" decisions made at the branch level. For example, a cheque would clear a day earlier. Another probable reason why Canara Bank shifted to the new premises was that the new location was sure to attract an increase in accounts held by the campusites.

By changing into a branch, the timings of the bank also have reduced from the original 9a.m - 3p.m to 9a.m - 2p.m. To give the credit where it is due, the bank used to stay open for 6 hours whereas an average centralized bank is open only for 4 hours a day. When we enquired about the reason behind the shortening of times, it was attributed to the paper-work which would now have to be done in the bank itself. The increase in clerical staff from 4 to 6 doesn't seem to have balanced the work-load as is evident to anyone who has visited the bank recently.

What does Canara Bank offer anyway? Recently, the Institute has started crediting monthly scholarships directly into student's accounts. Also, students get an account through which their mess bills are deducted and fees can be paid. A common complaint one hears is that, as students, we are forced to take accounts at Canara Bank since there is no other way to conduct transactions with IIT. If a person is disappointed with the service offered, s/he has no choice. But the fact remains that there is no contract between Canara Bank and IIT. The reason why all transactions occur via Canara Bank is that the hostels find it easier to deal with Canara Bank as all the hostels' accounts are there.

Is there light at the end of the tunnel? The bank manager seems to think so. He says that once the ATM Machine is set up (likely to happen by end-August) the bottlenecks will disappear. Let's hope for the best.

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SMART Act : The CARD Way

- By **Suraj Ravindran**

Would you believe your ears if you were told that all your assets could now fit into your wallet - snug as a bug as a rug? Seems like venturing into the realms of science fiction! Doesn't it? In that case, IIT Bombay extends you a warm welcome to this futuristic domain. The Smart Card, powered with the potential to make it useful everywhere - for everything! - is soon to become the status symbol of every IITian (to be precise, an IITBian!)

The Uses

Prof. N. K. Khosla, one of the initiators of the path-breaking Smart Card implementation reveals, "the institute intends to use microprocessor based smart cards having the trade name "PayFlex". These cards are manufactured by Schlumberger, use an Infineon CPU and are marketed in India by several vendors. The LAN section envisages the following different roles for smart cards -

1. Smart cards shall replace the student ID cards to provide (hopefully) better looking I Cards.
2. Smart cards shall also replace the need of administering email/proxy accounts. This has been planned as follows -
The new entrants to IIT shall be handed over a smart card based I-Card along with the other papers by the academic office. This is now possible since the JEE office scans the photographs of all JEE/GATE entrants. The students shall then use the smart card to set up their -
 - i. PIN No. for the smart card (A must during first time usage)
 - ii. . POP email account on an IIT/B POP mail server (new development)
 - iii. Select their UID and set their own password for this account.
 - iv. The same uid and password automatically becomes their proxy account as well as a telnet account on online.reg.iitb.ac.in.
 - v. This pop account shall also be used for all student-administration interaction, shall provide good storage (~50-70MB) as well as one mail forwarding address within IIT.
 - vi. All subsequent password management shall be through students' own I-cards (Smart Cards) and PINs.
3. Students shall be able to use these cards as an alternative to passwords to authenticate themselves for using LAN programs such as Online registration, Library book issue/fine details as well as viewing the academic and other personal information.
4. Another class of users of these cards shall be the faculty. Faculty shall use these cards to authenticate themselves (as an alternative to password based authentication) for activities such as online registration, course grading, library processes, accounts, cash advances, sponsored projects/consultancy as well as other administration related processes.

5. A third class of users will be the administrative staff who would need these cards to authenticate themselves to manage all administrative processes of the institute. For this class of users, the cards shall determine the "active program menu interfaces as well as access level control for the databases."

Apart from these uses, there is also some talk about providing smart card based access to external library members, companies coming for T&P as well as other regular IIT vendors.

Cool, but practical? Notwithstanding the long list of advantages the Smart Card promises, the practicality of such a project is questionable. Cost is the greatest concern. "The cost of the approximate number of 1000 card readers needed in the campus", says Prof. Khosla, "is too high to be acceptable to the institute. The alternative is "to design our own smart card reader so that we may be able to reduce the cost significantly." Work, to that effect, is already in progress in the institute.

What about security concerns? The need to ensure the confidentiality and integrity of all info stored on a smart card - be it one's academic or health records to cite a few - is never over-emphasised. Here also, the apprehension seems to be unfounded since the soon-to-be-introduced Smart Cards will have three level security features as described below:

- 1. The PC to card reader authentication. This is based on standard 3des and is implemented by an applet. The LAN section is trying to get the applet signed by Verisign.
- 2. Reader to card authentication using digital key and 3des algorithm.
- 3. User authentication by PIN.

The terminology, for many of us, is no more than hieroglyphics! But experts assure us that the security features are state-of-the-art and needless to say, effective.

Finally...When!? Now come the million-dollar-question! When is the Smart Card actually going to be in our hands? Very soon! The project is in the final stages of evaluation and reviewing. And the revolutionary microchip-based card will be commonplace in the trailblazing IITB campus in no more than a couple of months. In just about two months IIT Bombay will be a member of the elite group of leading universities worldwide that have gone ahead with Smart Card programmes in their campuses. Till then, let us cherish the novel idea and thank the people who have made possible what was once improbable, if not impossible.

Suraj Ravindran is a second year BTech student in the Dept of Civil Engg.

All play and no work makes Jack a dull boy?

Just when IIT Bombay was cozying back into its old predictable lifestyle, somebody moved the couch. Changes or at least the fear of changes seems to be hanging thick everywhere. Premal Shah tries to analyze if changes mean for better.

- **0830 MA-204**
- **0930 CE-211**
- **1030 HS-253**
- **1130 ME-233**

- **1500 10 % Surprise Quiz**
- **1730 Crossy Practice**
- **2030 Mood-Indigo Meeting**
- **0000 Dram Practice**

Too many things to do and too little time? So, how do you choose between what to do and how much to do? The problem aggravates if you are a fresher. On the other hand, you might not have to make a choice. The institute might come to your rescue and take the decision for you, by eliminating some of them, whether you like it or not. For sometime now, there have been talks about **curbing extra-curricular activities**, which seem to be outweighing academics in a student's mindset. The issue is in thick at **IIT Kanpur** and the rumbling has started close at home too.

The growing perception amongst a large fraction of the faculty and a smaller fraction of the student community is that we have overstuffed ourselves with too many activities.

As a result academics have taken a backseat and the students of IIT Bombay have not been living up to the academic standards that they are expected to. And what do the students have to offer in lieu? Grand festivals, hotly contested GCs, overblown shows with ample ghodagiri and perhaps not much quality. A more subtle point has been raised by the DOSA, with regard to the impact the growing hostel culture might be having on the IITian attitude. As he puts, are the hostels churning out clones, cynical conceited clones?

The first issue is that of academic performance, which has been felt to be victimized by the supposed `excess' of activities in the campus. Students, neither do nor want to (which is perhaps more disturbing) spend time attending lectures, solving tutorials and studying for exams. While it is open to argument whether such a trend has been freshly acquired or has been always been around (it is also true that not all students have thrown academic concerns to the wind), it, nevertheless, cannot be denied that such attitude does exist among a considerable fraction of the student

community and that it is undesirable. There are no two opinions about the fact that academics should get precedence in an institute like IIT. What remain to be investigated then, are the factors that are weaning students away from academics and where exactly do the problems lie - with the students, the culture or the system?

Certainly not the students themselves, one would say, as most of them have been among the best in their schools, and the very fact that they are here, testifies that they have both, the potential and the academic bent of mind and are not averse to hard work. The problem, it seems, lies somewhere in the other two.

The starry eyed freshers who enter IIT feel they have already won the major battle. Most of them have huge expectations built upon the image of IITs projected everywhere, some of which are bound to be belied. At this stage, away from home, perhaps for the first time, the ones that have a marked influence over him are his seniors and the hostel culture. He acquires a new value set where sleeping in lectures is cool, bunking them is cooler and there's nothing like freaking out during exams. On the other hand, undue worries about academics are a sign of '*nbdugiri*' and the most detestable thing is, perhaps, being caught studying days before a quiz or an exam and being labeled a 'maggu'. There is also a general 'disillusionment' about what matters and what doesn't. Premium is placed on getting the ends with minimum efforts. You are not a '*crackoo*' if you slog and score an AA, for, any Tom, Dick and Harry could do that. To be a stud, you got to be not studying, irrespective of your grades. There will, of course, be plenty of things to keep your hands full; and it's not as menial to do '*ghodagiri*' for that as it is for your class project. The fresher in this framework acquires a new set of loyalties, loyalty towards his hostel and the sense of essential duty towards it. The problem is compounded when the fresher in his enthusiasm takes things too far and this newly acquired loyalty overbears on other loyalties that are more important - the loyalty towards the institute and most importantly, towards himself.

Coming to IIT provides one with enormous opportunities; a great chance to make it big. What IIT provides you is a springboard, but the spring has to be taken by you and for that, it is imperative that you do not lose sight of your goals, the ones that you set out with, in the first place. You should choose the things you are best at and work on them and prioritize other things accordingly.

CC is proudly introduced to the freshers as *Chappal Centre, Night-Out and Bunking* as glorious traditions in the very first (dis?)orientation. It is this culture and the attitude towards work, preached again in the hostels, more than anything else, that is creating an apathy and lack of seriousness

towards academics. It definitely needs major revamping and the seniors should realize that. There have been changes, already, in the right direction. The student mentors among others, also stress on the importance of a good academic performance. With regard to the attachment to hostels, one can do one's bit for the hostel without compromising on academics and if one cannot, one should set priorities. When one spends 70 % of the time in IIT, in the hostel, with one's mates, it is only natural that a sense of belonging to the hostel develops. You find it a wonderful place, where you meet so many different people, are exposed to so many new things, where you expand your horizons and develop as a person. Love for one's hostel is as natural as the love one has for one's home, but there is no point in being fanatical about it.

The next major point is concerned with the system and there maybe a few gray areas here. Now, the disillusioned fresher has set about flourishing on his own path and has sent academics for a six. Are there enough safety valves within the system that would help him get back on track. For if the problem lies in academic performance, there can be nothing but only academic measures that could correct the same. The first problem is that of motivation. **If most of the students are not studying of their own will, it implies that the institute is losing the battle, in terms of stimulating and sustaining interest in the students who had originally set out with education as their prime goal.** It perhaps wouldn't hurt to reassess the facilities and faculty structure in most of the departments. Although things differ vastly from one department to another, at least in some departments, there has been a want of facilities, which has been redressed only recently.

The other problem is that of performance evaluation and an adequate system of rewards and punishments. To address the severity or even validate the presence of a problem in academic standards, there seem to be no performance measures, for **CPI** is a relative criterion and one would suspect that the distribution of CPIs would remain the same over years. The indicators have rather been indirect based on feedback from other, often outside sources. While some of them, such as hiring companies, tend to claim that students are not the same as earlier, other pointers such as foreign universities where IIT students have excelled seem to suggest otherwise. What is then needed, is an evaluation system which would measure how an IIT student is doing vis-à-vis fixed standards. What is also needed is an evaluation system where the course taught is evaluated regularly for the range and depth of contents, more, than by the students . The same teacher teaching a course, setting the exams, grading and evaluating them and the students in turn evaluating the teacher is perhaps a closed little convenient system.

Most students including the large average more often than not find, that putting more time in studies is not going to pay any major dividends and the situation aggravates as the years go by. OK, so I got an 8.1 in my first year. Maybe if I put in a bit more, there is an outside chance that I'll jack it up to 8.4, but you can never tell, and then it really won't make much of a difference or if I need to get a grade up in that course it will require me to score 10 more and no point in doing so for a change in the second decimal place of my CPI. The converse is also true - it would take a lot of deviation from the average to get a grade lower. The result is stagnation. Also, most of the grading patterns are not distinguishing enough. The best example is, perhaps, that of the Dual Degree Project evaluation where the granularity levels are close to absurd. 10 grade levels for as many as 56 credits effectively! It will take a quantum jump to move from one level to another. In the absence of natural motivation, which should, ideally, be the driving force, it would take a more dynamic and finely tuned performance measurement that would impel a student to put in commensurate efforts.

So, where do extra-curricular activities fit into the paradigm of things? They, in fact, don't and are largely parallel things that go on and should be allowed and encouraged to go on by the institute. If a student is freed of all extra-curricular activities, it doesn't mean that he will put the time saved on academics unless there is sufficient motive for him to do so. In fact, even at present, for a majority of students extra-curricular activities may not be impairing academics as much as other factors do. In any class, there are more students who miss lecture out of boredom or to prepare for a subsequent quiz rather than fatigue due to extra curricular activities.

If the academic system is properly honed, students who are mature, will set priorities accordingly and the extra curricular activities will be, in fact, what they are meant to be - 'extra-curricular', to be done in free time outside studies. At the same time, each student should have freedom to pursue activities of his interest, for most of the students have made a big decision at a tender age, driven more by career prospects than interest. A student should be given the opportunity to pursue things which thrill him and would help him realize his goals in the long run. The best time to do so is the first year where one is new, open, enthusiastic and has time to find things that he is good at and things that interest him. If there is an excess of these activities, then they simply won't be sustainable and will wilt away, as has been the case with some clubs and events that see walkovers.

Having said that, there is also a need to rethink some of the extra-curricular events that are unnecessary and take too much time for too little output. Events such as Crossy in the GC, for example, with emphasis on mere participation than performance, serve little purpose, other than inflaming hostel spirit, of which there is certainly no dearth. The PAF is

another such event, perhaps, where too much time is spent on production. The Dean SA has a point when he says 'quality' rather than 'quantity'. No doubt, every year we have one or two exceptional **PAFs**, but the others are rather mediocre shows with huge sets. The thousands of rupees and hundreds of man hours spent - should a GC event ask for this much? Perhaps one **Yayati** would make more sense.

The case, however, is slightly different for the institute festivals. **Mood Indigo and Techfest** which go a long way in building an identity for IIT Bombay in the student community of India. The ends and the results do speak for the money and effort spent. Besides, Mood Indigo doesn't even cut into the academic calendar and Techfest gives the technological intent a boost. There is no denying the fact that numerous man-hours (and of course big money) are spent in making these festivals happen, but calling them 'wasted' would be too sweeping a statement. There is definitely a need to do some brainstorming on the reasons for doing these festivals and keeping a check on them so that they do not blow out of proportions. Also, changes in the organisation of these events should be thought of, so that repetition is avoided and there is something fresh and new about them.

All said and done, there's no doubt that the academic interests of the students need to be rekindled. The measures that should be taken and which would be effective are increasing appreciation for academic work in the hostel culture and a more watertight academic system. Extra-curricular activities will then automatically cut down their own flab. There would not be much to gain by an individual or the institute by any proactive censorship. Life is, after all, not one-dimensional.

Premal Shah is a fifth year dual degree student in the Dept of Elec Engg.

MEN IN BLACK

Slack security has long been a grave problem, authorities seem to be rising finally, if the recent steps are an indication... **by harsh roy and anand mathur**

Security in IIT has been revamped in part, by handing over the hostel security in private hands. The smartly dressed "Men in Black" are employed by TRIG, a nationwide reputed security outfit, trusted with life by likes of Amitabh Bachchan. In addition, TRIG men are entrusted with securing Banks, Corporate offices, Multi-storied apartments etc. The services of TRIG have been sought by IIT on a three month trial contract.

Why TRIG?

Prof G.K Sharma, head of security advisory committee, elucidating the reasons for such a step, said that IIT maintains a 151 strong security staff of its own, commensurate with ministry requirements of a maximum ratio of supporting staff to academic staff. In an effort to beef up the security, TRIG has been employed to man specific areas like Hostels 1-9, Staff Hostel, Tansa, Campus School and patrolling near hill area to prevent encroachment. Their current strength is 15 men in one shift, working in three shifts round the clock. The terms of duty remain unchanged and they have not been given any extra powers.

IIT had conducted a massive recruitment drive recently, to employ security personnel (refer to article "Watch out! The knights have arrived... ",issue-5) , but only 10 men were finally selected out of "1500" applicants. Currently, almost 60 security guards are above the age of 50, and a need was felt to inject some young blood among security ranks. Another moving consideration was that the employment of a private security concern is a "no strings attached" simpler affair. Professor Sharma highlighting the advantages of this measure said that it ensures good performance, improved efficiency with virtually no added liabilities to bother for, compared to employment of permanent security staff who have to be provided for housing, and other benefits. This arrangement has been successfully enforced in other IITs also, he added. The decision however, was met with resistance from the Non Academic Staff Association, who are perennially against any efforts towards privatization. The strain between the new security men and the permanent security employees is also apparent. In a recent incident involving a hostel-9 inmate who contacted Main gate security desk to send for an auto to pick his luggage was refused. The guard on duty said that the responsibility of security has been snatched from them and that the hostel guard must do the job of arranging the auto, before hanging over...

Panther Menace...

It is that time of the year again when our wild neighbor, who has been an uninvited visitor for some years now, decides to make a move. However it seems that this time it might be in for a rude reception. Mr. Dhankar, security head revealed that a cage is being made to trap the wild cat and some security men from IIT will receive training at the Borivili national park for the same. He said that the non availability of a cage was always a problem in yester years and this time IIT has taken the onus on itself to acquire a cage and train its own personnel to meet any eventuality.

Ending Encroachment...

IIT has been plagued by this problem for long owing to the porous boundaries and lack of proper surveillance. Some headway seems have to been effected in alleviating this problem through legal means and increased patrolling in vulnerable areas. Recently a patch of encroached area near the main gate heading towards the lake was cleared following court orders. Two security guards have been deputed near hill area with the sole duty of checking further swelling of existing encroachment in the region.

InsIghT has time and again taken to task the slack security in the campus. The concerns seem to bear fruit now, if this step to privatize the security is viewed to be a positive one. Authorities seem to be gradually responding to the increased security demands. The steps initiated to curb the panther menace should indeed be welcomed. We hope that this step is first in the series of initiatives towards making IIT a safer place to live.

Harsh Roy is a third year dual degree student in the Dept of Chem Engg and Anand Mathur is a second year BTech student in the Dept of Mech Engg.

IIT's Third consecutive success at the ASME SDC 2002

*This year students of the Dept of Mech Engg. continue the trend set by their seniors, by winning the regional round of ASME SDC 2002. **Shamiroh Tikoo** reports.*

For the third consecutive year, IIT Bombay has secured the first position at the Regional Level in ASME Student Design Contest. The team of Niranjana Chavan, Vikas Nair, Gagan Goyal and Avinash Panga, all third year students in the mechanical department, will be representing IIT Bombay at the annual congress of American Society of Mechanical Engineers (ASME) at New Orleans, USA. This enthusiastic team formed in Jan 2002 wanted to reinforce IIT Bombay, as they say, in their own words, '**on the global map**'.

Year 2002 Problem

The problem statement required them to design and demonstrate a well-tested, cost-effective, and reliable prototype apparatus which would allow a baseball manufacturing unit to detect defective balls. The prototype system had to be placed at a prescribed starting location with 30 baseballs ready for tossing. On command, the system then had to toss the balls, one at a time, as rapidly as possible at three fixed targets.

Their Xperience

This outstanding team worked persistently on the machine for over 2 months despite facing shortage of resources and monetary constraints. Most of the machine was built from scrap aluminium, PVC pipes, MS plates, etc. *'We were disappointed and frustrated at numerous instances when the machine showed variable results and didn't perform as well as we expected it to. But at such times, Prof Amarnath (the then HOD of Mech Dept) talked to us and kept the motivation high in us. A day before the competition one of the motors got burnt and the machine developed many intricacies and our foursome was on the verge of giving up. Then came the final night-out with renewed vigor to analyse for the last time the variegated technical problems and we found the cause of problems at the eleventh hour. It was a rubber piece, which was used for damping the jerks, that was wearing away after every few trials.'*

Old gives a new fold

Well, now here's where the seniors come into play. They provided them with a few pieces of expensive silicone rubber, something they were dreaming of. The machine now performed as they expected, probably a bit better. Then came the recording of the machine on tape which had to be done in the presence of a signatory from ASME. The machine performed perfectly well in front of the camera and dropped 19 balls into the targets;

5 into the centre hole and 5 and 9 balls respectively into the other two holes. They obtained a massive score of 7469/8000 while the team from Hong Kong, which stood second in the region, obtained a score of 4955/8000. This put them in the first place in the 'rest of the world' region XIII.

Next step....

They hope to win the finals in which they compete with the teams of North America. Winning the regional level has boosted their morale and they plan to rebuild their machine (still nameless!!!) and make it more accurate, reliable, sturdy and presentable as compared to the previous one. The final competition would be held at New Orleans, USA.

In brief about ASME and its competitions Founded in 1880 as the American Society of Mechanical Engineers, today ASME International is a nonprofit educational and technical organization serving a worldwide membership of 125,000. It conducts one of the world's largest technical publishing operations, holds some 30 technical conferences and 200 professional development courses each year and sets many industrial and manufacturing standards. The vision ; to be the premier organization for promoting the art, science and practice of mechanical engineering throughout the world. The mission ; to promote and enhance the technical competency and professional well-being of Artificial Intelligence junta, and through quality programs and activities in mechanical engineering, better enable its practitioners to contribute to the well-being of mankind.

Year 2003 Problem

This year's student design contest (2003) has its problem statement as follows:- *'There are many challenging material handling challenges in the mining industry. A surface mining company is looking for a device to reduce the energy consumption of the material handling equipment used in their mountain mining operations. The company is seeking effective methods of utilizing the potential energy available in the local mountain streams to lift the ore up from the bottom of the open pit mine. To generate feasible concepts they are offering ASME Student Members the opportunity to design a prototype system. Your system must utilize the gravitational potential energy stored in two liters of water to lift as much simulated ore as possible out of the simulated mine and deposit it into a receiving bin. The ore will be simulated by long grain rice weighing approximately 830 kg/cu.m. '*

For more information on design contests for students :-

<http://www.asme.org/students/Competitions/designcontest/2003/Y2003index.html>

Shamiroh Tikoo is a second year BTech student in the Dept of Mech Engg.

FOOTBALL SHOOTBALL HAI RABBA!!

*Everyone caught the World Cup fever this June and IIT was not to be left behind. People, even from HN, thronged the Lecture Theatre in large numbers where the matches were screened. **Karthik Ramkumar** writes.*

Every evening you see an exodus of IITians going towards HN for a taste of the "good life". On the contrary, this June, IIT became the place to be, with scores of HNites flocking to campus for a dose of high-adrenaline Soccer magic. For those of you not yet in the know, ALL the matches of the **Football World Cup** were telecast on a big screen either in LT or in the Convo. All you footer enthusiasts really missed a treat.

I landed up in IIT in the start of June and was wondering how I would while away my free time. Little did I know, how the notice announcing the schedule for the World Cup would drastically change all that. What started off as just another way to pass a lazy summer afternoon ballooned into a mega-event beyond even the organisers wildest dreams/nightmares. The people behind the scenes (who turned into Insti icons overnight) were Raju, Topi, Sari and Naval Khanna.

It all started with the telecast of the **UEFA Champions League Finals** at LT on May the 15th. The enthu generated on campus was amazing with a packed LT. After that, the question on everyone's minds was- "*Is World Cup happening in LT?*". Prof. DK Ghosh even posted on iitb.general enquiring whether there were any enthu students who would come forward and organise the screening this year. It was then that the drive to get all the matches telecast (not just the final stages like the last World Cup) really took off.

After the success of the UEFA finals, Dr.Appaji (Head of SAC) and Prof.UB Desai (DOSA) readily supported the screening. LT/Convo were booked for 25 days. SAC had to pay Rs. 250/- per day as rental charges for the projector. The cable operator, Mr.Nandan Basu deserves special thanks for providing all the equipment and faultless service for a small fee.

A lot of professors turned up, especially for the big matches. But the most regular visitor was Prof. GN Jadhav (Warden, Hostel 2. H2 really is footer crazy!) An individual who chose not to be named for unspecified reasons, saw every single match. The TV ad with the punch line "*5760 minutes of viewing*", doesn't seem so nonsensical anymore.

The atmosphere was mind-blowing with steadily growing crowds through the month climaxing in a Convo more packed (and loud) than I have ever seen before. **Brazil, Argentina, England, and the minnows Senegal & Turkey** were the crowd favourites. The Group stages saw the Argentina-

crazed H5 turning up in sparkling white-and-blue Footer colours (someone actually washed all those clothes. Quite a feat, I reckon, considering that we are "**IITians**"!!!). The unexpected elimination of Argentina left a hostel in depression. By the end of the World Cup, Brazil haircuts were passe. Everyone had become a soccer pundit.

The only rather unfortunate incident was that the rush to enter the LT before the commencement of the Brazil-England quarterfinal resulted in the breaking of the rear entrance. Somehow, this happens way too often.

Just a thought. This freshie batch is rather unlucky. They probably will never get to see World Cup Football on campus. No reason to fret though, there still is hope. With World Cup Cricket lined up next year, the whole institute has their fingers crossed.

The author is a third year BTech student in the Department of Elec Engg.

Research in the Chemistry Department

- Amol Gogate

Does the Department of Chemistry, IIT Bombay have some kind of a "Research Machine"?

How else does one explain the rapid strides in research (see box), number of research papers published in reputed journals and the number of PhDs churned out every year?. These all point towards what is unquestionably the most active department of IIT Bombay in terms of research. And **Prof. C. Chattopadhyay** is a happy man. The beaming Head of the Chemistry Department says, *"Our own research work as well as the students who have passed out of this department have put us firmly on the international map."* The reason for this is not too difficult to recognize.

A visit to the first year UG lab is any student's delight (For the information of all the 3rd and 4th yearites, the lab has an entirely refreshing new look.) And there are even better facilities in the pipeline like the NMR and Mass Spectrometry equipment. Several of the faculty members have been recipients of national awards and are members of several prestigious scientific bodies. The areas of research are very diverse and exciting. The track record of the department is enviable. We will have a look at 3 of the myriad research projects currently under way, namely:

- 1) Work on Anti-Cancer drugs.
- 2) Research on Electrochromic Materials.
- 3) Better Ceramics through Chemistry.

BOX 1: 26 Faculty members, 106 Research Scholars (40 of them on various scholarships)

Physical Chemistry : Theoretical Chemistry, Thermodynamics, Solid State Catalysis, Ultrafast Spectroscopy, Electrochemistry, Biophysical Chemistry

Organic Chemistry : Synthetic Organic Chemistry, Photochemistry/Photobiology, Bioorganic chemistry, Polymer

Chemistry Inorganic Chemistry : Coordination Chemistry, Organometallics, Bioinorganic Chemistry.

BOX 2 : About 100 research papers published in reputed international scientific journals every year Number of PhDs

awarded last year : 16 -- Highest for any department in IIT Bombay 2 faculty members on the editorial board of Prestigious

International Journals : Organometallics & Protein Science .

A grant of Rs. 2.5 crores from Department of Science and Technology (DST) for NMR and Mass Spectrometer facilities .A Combined entrance exam on the lines of JEE for aspiring M.Sc students at.IIT Bombay, IIT Kanpur and IIT Madras. Practical Tests for International Chemistry Olympiad - 2001 conducted successfully with 67 countries participating.Spruced up lab and classroom facilities (The UG first year lab in its new avataar is a must see).

BOX 3 :Three years ago, India sent its team for the first time to participate in the International Chemistry Olympiad. IIT Bombay played an active role in the selection and preparations of the Indian team. Within 2 years, India got a chance to host the International **Chemistry Olympiad-2001!** The mantle for the Practical Tests was donned again by the Department of Chemistry, IITB.

Dr.K.D.Deodhar, Professor at the department and a major force behind the successful organisation of the event informs, "*We had just over 4 months to prepare and limited resources at hand. Yet we lived up to the expectations of international participants.*" Prof Chattopadhyay sums up, "It was very satisfying for each one of us to see that the laboratory facilities we provided were heartily appreciated." **BOX 4** :As one visits the Chemistry Dept, the most striking feature other than the variety of fields/applications being researched is the efficiency. It took exactly one phone call to Prof. Chattopadhyay, HoD Chemistry Dept. and less than an hour to get all required information for these articles. This is exemplary, considering that the exercise involved in coordinating appointments of 3 professors.

Amol Gogate is a fourth year dual degree student in the Dept of Mech Engg.

"Cancer is a dreaded disease in today's world causing a minimum of one death per minute"

explains Dr. Kaliappan, Assistant Professor, emphasizing the importance of research on anti-cancer drugs under way at the Department of Chemistry.

As a result of cancer research during the 60s, powered by generous funding from the **National Cancer Institute, USA**, an important drug named **Taxol** was discovered. It is currently being used to treat ovarian cancer and it also shows potent activity against breast, lung and other cancers. The Taxol molecule can be isolated in minute quantities from the bark of the Pacific Yew tree. Now here arises a problem. The tree grows too slowly, taking several years to grow fully. Later, chemists in France found a way around and invented a process for the so called "*semi-synthesis*" of Taxol. In this process, a major part of the Taxol molecule is available from other natural resources (10-Deacetyl baccatin III) and it is coupled with the synthesized side chain to produce Taxol. There are six total synthesis reported for Taxol to date and the shortest one reported required at least 50 steps.

"This is one of the aspects we are working upon. Our aim is to reduce the number of steps to about 25" says Dr. Kaliappan. He adds, "The molecule we are trying to synthesize is very complex. To reduce the number of steps, we need to increase the number of reactants in one step.

This is called multi-component reaction. The process finally consists of multiple such steps making it a multi-multi component reaction. This is the key to attaining our objective". And this is just a part of the story. Another trail in search of cancer-warrior drugs being followed is that of some of the natural products that behave very much like Taxol. The three major ones are **Eleutherobin, Discodermolide and the Epothilones**.

It is of interest if we can synthesize some of these and the prospects are bright. Attempts are also on to synthesize simpler analogs of Taxol. These analogs do not contain all the functional groups of Taxol. Nevertheless, they are important from the point of view of synthesizing "*Hybrid*" drugs. Hybrid Drugs combine the effectiveness of Taxol with more desired properties. One such example is to find a variant that is water soluble. Taxol being sparingly soluble in water, a water soluble version will be easier to inject directly in the blood stream. So when are favorable results on these fronts expected? Dr. Kaliappan is realistic about this. *"It took about 25 years after its discovery for Taxol to be available in the market. Not only synthesis, the testing procedure for life-saving drugs is also very stringent. It would be unwise to expect anything instantly, but give us at least five years. We intend to carry out the biological tests at the School of*

Biosciences and Bioengineering at IITB itself." With their work on in full steam, we wish Dr. Kaliappan and his team the very **Best of Luck !**

Research in Organometallics and Materials Chemistry

They don't do different things, they do things differently.

That would be an appropriate way to characterize the research work of the Organometallic and Materials Chemistry group of the Chemistry Department. As Prof. Murugavel puts it, *"One of the major focuses of our research over the last few years has been on the use of single-source organometallic precursors for the preparation of metal-silicate and metal-phosphate materials. While these materials are normally obtained by high-temperature processes, our own efforts are directed towards obtaining these materials at low-temperatures, often with improved properties"*. This approach is often referred to **"Better Ceramics through Chemistry"**.

The Organometallics laboratory concentrates in areas that are an interface between classical inorganic/organometallic synthesis and modern materials chemistry. Use of milder chemical routes has its own advantages in the sense that there is better control on every stage in the process. Moreover these routes usually yield materials with smaller particle size.

This increases the exposed surface area. So from the same mass of a certain chemical/material we can obtain widely varying surface areas from a few square meters to a few thousand square meters. This in turn has a profound effect on the properties of materials. Catalysis and sensors are the most obvious applications. Then is the research being done with an aim to synthesize materials with specific properties that have commercial appeal? Prof. Murugavel clarifies, *"We are into very fundamental research. Commercial viability is not our 'immediate' concern. We research on all kinds of metal derivatives. Basically we explore to find systems having a range of useful properties."*

Thus a variety of materials with information about alternate routes of synthesis is available. It is then for the material scientists to "pick up" what fulfills their requirements. The Europeans are the traditional leaders in the use of Organometallic routes for the preparation of new materials. But the attempt here is make the processes less cumbersome e.g. no solvents etc. This is what makes the work special.

Lcd Devices

Even as **LCDs (Liquid Crystal Displays)** become more and more popular as display devices, these are still not viable for the large area applications. A possible substitute for these materials are the **electrochromic materials (ECs)**. EC materials are the one where the color changes as a function of applied potential. However if the colour changes from a highly opaque colored state to highly transmissive bleached state then these materials are ideal candidates for display applications. “The important parameters for an ideal EC material to be a potential candidate for display applications are a) contrast, b) switching speeds between the two states and c) the ease of synthesis and processing” explains Dr. Anil Kumar of the Chemistry Dept. He further adds that conducting or conjugated polymers based on **Polypropylene dioxythiophenes (PProDOT)** have been found to be more promising as EC materials because of their high contrast, better stability, faster switching speeds and easy processing. It was observed that the electrochromic contrast improves on

- 1) increasing the ring size and also by
- 2) the incorporation of a rigid/bulky side chain.

A high contrast of 78% was observed from a dimethyl substituted polypropylenedioxythiophene (PProDOT-Me₂). “If one has to design a polymer with even better contrast than this, then one has to use more rigid/bulky substituents instead of methyl groups”, says Dr. Anil Kumar. Based on these facts, Polymer labs at the Chemistry Dept were recently successful in the design and synthesis of EC conjugated polymer based on dibenzyl propylenedioxythiophene (ProDOT-Bz₂) monomer. It exhibits a very high contrast of 90% with switching speeds of 800 milliseconds. These values, in fact are the highest reported till date designed and synthesized. Then what are the specific applications being conceived? The ECs are an excellent and more economical substitute for LCDs. At present, the work is in progress to design and fabricate EC display devices based on these materials so that they can be effectively utilized in a variety of operating conditions and configurations. And then there are other applications like “Smart Windows. Smart Windows contain the EC polymers and are basically of 2 types. One in which change in potential changes the color of the polymer and hence of the window.

The other one in which changes in potential can change the transmittance (% light transmitted). Rear view mirrors for cars known as **Gentex mirror** are based on the second principle and are very useful in reducing the glare of the powerful headlights while driving at night.

Techfest 2003: A Sneak Preview

*Give me a place to stand, and I will move the Earth.
Archimedes (ca. 235 bc) b. Syracuse*

- by *Shamiroh Tikoo and Suraj Ravindran*

Come January 2003 and the hallowed portals of IIT Bombay will unleash the power of cutting-edge technology, from the world over, on one and all. Techfest, the largest science and technology festival of its kind in Asia, endeavours to bring under one umbrella, the newest and the finest in the labyrinthine world of science and technology.

Initiated in 1998, IIT Bombay's annual sci-tech festival has grown by leaps and bounds over the years. Techfest 2003, the sixth avatar of the technological magnum opus, promises to be yet another pioneer, like all of its predecessors.

BACKGROUND: Techfest is a celebration that is interactive, informative, and entertaining for budding technologists, entrepreneurs, college students and the science and technology community alike. From its inception five years back, Techfest's orbit and popularity skyrocketed, as did its reputation as an innovator. Techfest '98 introduced video conferencing to India; in Techfest 1999 it was the concept of 'virtual reality' that stole the show. Techfest '99 also marked the birth of entrepreneurial fever in IITB, resulting in the initiation of the grassroots organization called E-Cell.

The various workshops were the primary attraction at Techfest 2000. The Lecture Series featuring distinguished people from fields as diverse as event management to information technology to pure sciences made Techfest 2001 a remarkable adventure. It also covered the regulatory, social and economic aspects related to technology. The Mercedes Benz 500SL Roadster, Technoholix, Crystal Maze with the futuristic games and online competitions were the hallmark of Techfest 2002.

VISION: This sci-tech festival aspires to transform the image of IIT Bombay and India as an exciting science and technology region. It has the vision to present the entire spectrum of science and technology at its very best and further, to impregnate this spirit of constantly striving to better the best in the minds, to motivate them towards the pinnacle of excellence.

THE EVENTS: A Bird's Eye View Techfest boasts of a heady mix of intriguing and cerebrating events. For the techno-savvy there are competitions like Open Hardware and Open Software. If you are the one

with genuine concerns for the environment, we've got Blue Planet. And in case you have a hang-up of frivolities and maleficence, then Contraption is your piece of cake. For the industry minded, IDP(Industry Defined Problem) is the solution. Yantriki (India's premier robosports competition), LastStraw (ever seen a heavy duty structure made of 'straws'?) and Chemsplash (teleporting DNA molecules??) are the ultimate tests of talent and technical brilliance. The HUB is the central arena for a gamut of on-the-spot activities. There are a range of events such as theme quizzes, demos, documentaries, treasure hunt, graffiti board, hourly releases and a lot more.

Tech-a-Tete brings the participants face to face with some of the greatest achievers of our times. The aim is to get to listen to and interact with our role models, providing us a source of inspiration and a spark for innovation. In the past eminent personalities from the world of Science and Technology like Dr.APJ Abdul Kalam, Dr Jayant Narlikar, Dr Paul Schuch , Dr Ehud Shapiro, Dr Sam Pitroda, Mr Alyquee Padamsee, Mr. Rajat Gupta, Mr Anand Mahindra and many more have honoured Techfest. And that's certainly not all. A host of events, competitions and workshops wait to be explored. So you see, we at Techfest cater to the needs of every curious mind. Well! If you thought it's all too much of science and tech, think twice. Exit light, enter night! Technoholix livens the dark times with laser shows, 3D animations and displays of an array of mind-blowing gizmos.

Techfest is a fun-filled community celebration of discovery and innovation that will energize regional science and technology development. The SciTech Festival will ... Attract people including students and leaders in science and technology from within the region and beyond. Enhance public awareness of the importance of science and technology. Build a pool of knowledge workers by inspiring young people and attracting talent. Weave a science and technology thread into the fabric of our culture.

The important thing is not to stop questioning. Curiosity has its own reason for existing. -Albert Einstein

Visit <http://www.techfest.org> for latest info

Mood Indigo : Four fun days (fundaes??)

-A Snapshot of Mood Indigo by **Prachi Banthia** and **Rachana Kedilaya**

"A college fest symbolizes everything that's right about youth, college life, in fact life in general. Fests like MI embody the spirit of camaraderie, competition, magic, of living life for the moment, of people coming together with one common goal and making something awesome."

These are the words of an alumnus, **Anand Sivakumaran** who was also an enthusiastic JAM judge at MI 2001. What is it about a college fest that evokes memories like these?

As you emerge from the 'cocoon' of the Pre-JEE academics full of enthusiasm, festivals like Mood Indigo/Techfest are ideal platforms to become aware of your strengths and limitations. Two areas in which we techies often lack, are **communication skills and exposure to the practical world**. As a part of the organization of a fest, you learn to handle pressure, deadlines, criticism, people and soon it all begins to seem natural to you. Communication skills and exposure to a work environment are characteristics that everybody who wishes to survive must possess, be it a research scientist, a professor, a manager or a consultant. As **Arjunan Rajeswaran, CG Pronites, 1999** put it - *"I feel mood indigo has been a life's lesson: teaching me lessons that go beyond the tangible. It has taught me lessons in interpersonal relationships, crisis management, structured organization and whatnot. It is one of the main pillars of IIT Bombay that transforms us from technologists to technology leaders."*

Specifically with respect to **Mood Indigo** (which is probably the only cultural festival most IITians attend through the year), MI does whatever little it can to promote culture amongst the youth and gives us a chance to see the best in the business. The Ann Prod team which gave us "**Yayati**" had 5 members at the screening of "*Dance Like a Man*" at MI last year just watching the "*Lighting*" throughout the show. A walk to LT. Invaluable fundaes. For free.

As for us, the organizers, the drive to innovate and improve led to the creation of the brain child of Mood I, **Horizons** in 1998. Unique to Mood Indigo, Horizons is a platform for dog shows, dance shows, magic shows, street plays, workshops. Anything goes as long as its different. It provides an opportunity for people to learn a new art, pick up a new hobby or just acts as a showcase of Indian culture. It is known for its share of surprises. In 1999, Sivamani, the king of Indian percussion, gave a breathtaking, open-air performance of his "*Drums of Heaven*", in which he made music out of every item he could lay his hands on. This show has left an indelible memory for each and every student who was privileged enough to see it.

And who can forget the **Pronites**? "*Where else - for so many, for free?*" - we like to ask :). With no other college in Mumbai possessing even the basic infrastructure to cater to crowds so huge, Pronites has always been the pride of MI. The inimitable **Zakir Hussain** performed every year from 1976 to 1981 and a lot more times since then! **With Professional Nite, Classical Nite and Livewire**, it's 360 degrees of entertainment .

The sprawling campus also serves the basic requirement (read size) to conduct the most non-red tape set of competitions around. All you have to do is show up! Compared to other Bombay fests where you register, send your name, get a pass, get shooed around and a thousand other hassles, Comps rocks! Add to this, top quality performances from contingents from Delhi to Bangalore and you get a heady mix.

Mood Indigo also tries to take up a social cause every year. **Mood Indigo 2000** had focused on an association with CRY and on the protection of the environment. Mood Indigo 2001 had focused on the Powai Lake, and our beautiful campus, with its theme being, "*Welcome to the Jungle*". What more can you ask from a college fest?

If you want to know about the various departments that make MI, do drop in for the **freshie orientation** which will be held soon.

BOMBAY DREAMZZZZ...

a phreshie's guide to mumbai city : Nikhil Nigam, Chaitanya Dongre, Ritesh Jhaveri + PJs input from Saurav Panda

Mumbai: The city that never sleeps (don't worry about the title above). The city that boasts of glamour, film stars, business-tycoons, raapchik items, crumbling highways, falling stocks, bhailog, behenlog (oops I think I got a bit too carried away).

Since the days of the "*British Raj*", Bombay has been taking long leaps to become India's commercial & showbiz capital, with so many people that it gives the word CROWD a whole new meaning. If all this about the place is enough to titillate your senses then buckle up (and down) as we take you on a sojourn through the labyrinth we call **MUMBAI** (thanks to Bal Thackeray JEE).

If you are stimulated by the sizzling gossip in Bombay Times and wish to have a sneak peek "behind the scenes" of *Bollywood* then a visit to the film city in Goregaon is a must. For that matter even a short stint of 72.8476 hrs at the Hiranandani Complex will assure you a "bump" into atleast one TV/Film star. (bump = haath ko aaya, moonh na laga)

Apart from this, places for autograph generation include - **Lokhandwala Complex, Hill Road in Bandra, Juhu** et al. As far as catching glimpses on screen is concerned, there are no limits to it; from the nearest sasta and kifaayati Shreyas to the PSEUD theaters in south m'bai like Sterling, Regal, Eros to the multiplexes like G7 at Bandra, IMAX and last but not the least the Cine* family. There are plenty of other options to quench your endless thirst for **new hindi & angrezi phillums**.

If you are on the intellectual side & prefer plays to movies; places that might interest you are NCPA at Nariman Point, Prithvi Theatre at Juhu. Though intellect proves to be a little heavy on the pocket, the plays are worth every penny spent.

All **MESSed up?** Not to be worrying. Check out the Chinese cuisine at China Garden in Crossroads, or Dynasty in Santacruz. Looking for Italian Delicacies then Pizza Hut or Little Italy at Juhu is sure to satisfy you. For sizzling sizzlers go to KOBES at Chowpatty, or YOKOs at Santacruz. Great Mexican food at New Yorkers at Chowpatty and Thai food at Thai pavilion is sure to have you asking for more. If you are in love with French Food, you can not find anything better than French fries.

Lekin apun se pocche toh, jab tak tu vada pav nahin khayela hain tu kuch nahin khayela hai. The Vada pavs, missal pav, pav bhaji, bhel available at

every nukkad, galli are the true mumbaiya dishes. Delicious as they may be, you may end up one big FARTOO (no pun intended) the next day.

For all you gultis and mallus missing the homely taste of dosas there's Dosa Diner at Gateway of India, which offers endless varieties of dosas that you might have not even heard of. For those who require some stimulation, Baristas all over, Café Coffee Day at Bandstand will get you on a caffeine-high. But for better value for money, a trip to the Coffee Shack, Staff-C or even the hostel coffee vending machines will do you good. And for great desserts, be sure to check out Baskin Robbins at HN or Croissants. A paan at the end is the perfect climax to the.....
PARAGRAPH!!

- If your hormonal levels need a boost,
- If your eyes need a POP,
- If your compy has become your soul mate,
- If you still don't get my point,

then venture out to nature's greatest creation (after men, of course); the hariyali and the beauty of the **PARK's and beaches** in Mumbai will not disappoint you.

You can dance away all your problems, all night long at discs like **FIRE and ICE, VELOCITY, J49, ZWIGS** et al with great music. Charges are usually baffling but mostly they are cover charges, meaning you can spend the money on drinks (I mean COKE, PEPSI and THUMS UP).

Still have money left? Are you a **shopping Maniac**? Well, for fashion accessories check out **fashion street**, for high fashion accessories check out **KBN & Shoppers Stop, for higher go to Cross Roads; even higher, go to FRANCE**. Cross roads is a great place for shopping for everything original under the sun and for great bargains go to Heera-Panna. A stroll down **Linking Road** will be useless if you have been to all these places, but jokes apart, the hub for showrooms in the city is Linking Road. For great bargains in electronics and comps (don't go to your seniors) check out **Lamington Road** and for the best bargains on books; **Flora-Fountain/Churchgate** is the place to hit.

Make sure that after this outing, you have money to come back to the campus before midnight (you may have to pay extra after 12). Besides, if you miss the **last train (leaves CST at 0045 hrs)**, you might end up spending the night on the platform. Anyways, what we have presented above is just the trailer. Now its up to you to go and check out the movie.

Questech

By Setu Choksi

1. Details of a check at a stationers are shown below.

78 - Pencils

152 - Paint Brushes

51 - Files

142 - Felt Tip Pens

? - Writing Pads.

How many writing pads are Required ????

2. Insert the vowels into each group of letters to form a word and find the odd one out.

DHL

RSN

RCHD

FCHS

3. $3 ? 7 ? 5 ? 4 ? 3 = ?$

What are the highest and lowest possible totals ? Replace ?'s with mathematical signs.

SOLUTIONS

solution 1 :Solution: 140,
Add the alphabets.

solution 2: DaHLia, RaiSiN, oRCHiD, FuCHSiA.
these are the names of the flowers, so the odd one out is Raisin.

solution 3: $3 / 7 + 5 \times 4 - 3 = 18.71$, $3 / 7 - 5 \times 4 + 3 = -15.29$