Event Highlight

- Experimental exemptions in patents/designs dealing with selection of projects, assignment of rights, liabilities, and planning research.
- Case Studies in IPR litigations involving academic institutions
- Entrepreneurship development and IPR
- Copyright issues in academics

Several interesting themes emerged from the deliberations; one of these was the need for evolving a strong institutional IP policy that would clearly address the inherent complexities in the creation and dissemination of knowledge. With the overlap of disciplines and a blurring of boundaries between upstream and downstream research, issues concerning multiple ownerships can be expected to arise–especially in externally funded research projects, and Technology Business Incubation activities. An ideal policy would therefore be one that successfully protects the interests of the innovator (student or faculty), the institute, the sponsor, and the society at large. Such a policy would also help the institute in developing a coherent philosophy, and in achieving its Vision and Mission. As noted by Prof. P Ganguli, "in the present global framework, IPR has come in at the point of idea generation and the challenge lies in managing it from here up to commercial production".

On a national scale, the need of the times is a legislation that will address ownership issues of externally funded projects, similar to the Bayh-Dole Patent and Trademark Law Amendments Act of the US (1980). Institutions such as the IITs can impress upon the government, the need for such legislations.

Next on the Pan-IIT Board's agenda is the organization of a National Workshop on IPR with large participation from the industry. The event would aim to highlight the role of IP in national wealth generation, and inform the industry about the IP management initiatives in the academia. It would also dwell on the need for evolving an organizational R&D strategy in the emerging scenario. The proceedings of the workshop will be shortly brought out by the institute.

List of speakers

- Judge Randall R Rader, Circuit Judge, United States Court of Appeals, USA
- Prof Martin Adelman, Professor of Law, George Washington University Law School, USA
- Dr Raj Dave, Patent Attorney, Morrison & Foerster, USA
- Mr R S Minisandram, Executive Director of IP, Seagate Technology LLC, USA
- Mr David Simon, Director of IP, Intel Corp. USA
- Mr Paul Stone, VP and Chief Patent Counsel, Symyx Technologies Inc.
- Mr Stephen Durant, Partner, Morrison & Foerster, San Francisco.
- Mr Marc Adler, Chief IP Counsel, Rohm & Haas, USA
- Mr Raghav Saha, Advisor, Department of Science and Technology, Govt. of India
- Mr T C James, Deputy Secretary DIPP, Govt. of India
- Mr Manoj Menda , Advocate
- Prof P Ganguli, Advisor, Vision IPR, Mumbai

** The IPR Unit at IITB: Prof Karuna Jain (Co-ordinator) and Prof Shishir Kumar Jha (Shailesh J Mehta School of Management), Prof Prabuddha Ganguli (Advisor, Vision IPR), and Dr Padma Satish (IRCC)*

Techfest 2004: A look back

Zishaan M Hayath*, Department of Civil Engineering

Techfest 2004–Asia's biggest, and IIT Bombay's popular annual technological festival is now seven years old and yet new! Held from the 24 - 26 January with a vivid spectrum of events ranging from competitions to lectures to exhibitions, Techfest attracted the participation of over 15,000 students, faculty, corporate executives and eminent personalities from all over the world. True to its reputation of doing new things every year–be it holding a defense exhibition or showcasing Sony Aibo robots playing football–Techfest 2004 introduced *Cliffhanger*, the international rope-climbing machine design contest, probably the biggest milestone for Techfest yet. About 60 teams out of 400 were short-listed for the event, including three from the 'Rest-of-the-World' category (NTU Singapore, University of Peradeniya Sri Lanka, and Institute of Engineering, Nepal).

Tech-a-tete, the distinguished lecture series of Techfest promises the participants rendezvous with the "who's who", and some of the high-profile achievers of our times. This year, Techfest played hosts to Dr Bharat Balasubramanian, Vice President of 'Engineering Technologies', Daimler Chrysler; Prof Kevin Warwick, Professor of Cybernetics, University of

Students in the Competition Area

Reading, UK; Dr Raghuram Rajan, Chief Economist of the IMF and Director of American Finance Association (over video conference); Prof Yash Pal, India's most popular scientist; Prof Alex Pentland, Founder Director Media Labs Asia; Dr Narendra Bhandari, member of the Moon Mission task force constituted by Indian Space Research Organisation; Prof Urjit

Yajnik (IIT Bombay) and Prof D Narasimha (TIFR, Mumbai).

Competitions have always been Techfest's mainstay. They enable students to construct, destruct, simplify, complicate, understand and battle it out in challenges designed to instill the spirit of 'striving to achieve the best'. Numerous teams participated in over 25 competitions with a total prize of over 6 lakhs. IIT Bombay clinched the overall trophy for the second year in a row. *Yantriki*, the robotics event was a huge success, the other two events in it being *Micromouse* and *Last Man Standing*. For the first time, fully autonomous robots built by the participants solved the maze in Micromouse successfully. IIT Bombay bagged both the first and second positions. *Last Straw* stuck to its philosophy of simple but stimulating design problems. The challenge was to make a Crane and Impact-resisting structure with straws. The participants also made a 21-feet high tower out of drinking straws to register themselves in the 'Limca Book of Records'. *Chemsplash* came back with rejuvenated vigour with *la porsChe* and *High Spirits,* in which models are made using only chemical power. It also included various quizzes and modelling competitions like *Turbulence* and *Dexter's Den*.

Para-jumping by Aakaash Ganga team, IAF

A prominent feature of Techfest is the *Workshops* where the emphasis is not just on 'Learn', but also on 'Do while you learn'. Over the last several years, attractive workshops on Cryptography, Wireless Networking and Forensics have been held; this year's topics included Intellectual Property Rights (IPR), Aeromodelling, Gaming, Car Technology, GPS/GIS and Smart Materials.

A highlight this year was the Indian Naval Exhibition. Inaugurated by Rear Admiral S K K Krishnan, the exhibition showcased technologies used in the Navy. The theme of the exhibition was built upon the basic functions of a warship. The exhibits gave an insight into the complex technologies contributing to making the ship, a cohesive, self-contained fighting unit. Equipment displayed depicted the four essential functions of a warship–to float, to move, to seek, and to destroy.

The last day of the events coincided with Republic Day. To celebrate this occasion, the *Aakaash Ganga* team of the Indian Air Force performed a breath-taking feat of para-jumping on the campus. The event drew a very large body of spectators.

Mr. Ferenc Cako of Cako Studios Hungary (and of Seoul International Cartoon & Animation Festival 'SICAF' fame), performed in India for the first time at Techfest. This very unique and novel show involving figurative painting with sand to the sound of music and projected on a screen, was held in the Open Air Theatre of IIT Bombay before a capacity crowd of 4000! The attractions at *Technoholix* included: the Sci-Tech quiz hosted by renowned quiz master Barry O'Brien, the display of a Formula 3 car (from the stables of Tata Racing team), *Colosseum*–the gaming arcade, and the Dirt Track Racing competition.

In all, Techfest provided an enriching and exhilarating experience, especially to students who had traveled from various parts of the country to participate in the event.

** Overall Co-coordinator, Techfest 2004*

Sanskrit Texts: A Window on Indian Scientific Tradition

Prema Prakash

In the popular perception, India's contribution to the development of science and technology often appears limited to those achieved over the last century or so. However, the wealth of Sanskrit texts provides evidence that such contributions have existed over the millennia–the earliest textual source being the *Rigveda* (believed to pre-date 3100 BC). Yet, an awareness of the precise nature of the contributions has not percolated through our now westernized education system. This is partly due to a lack of wider cultivation of Sanskrit, and access to the ancient texts. Nevertheless, attempts are being made in several academic institutions in India, including IIT Bombay, to bridge this rift with our heritage by archiving, translating, and digitizing manuscripts for easier access.

Indian Science over the Ages

Archaeological evidence shows that the first 'industrial' revolution had begun as far back as the Mohenjo Daro and Harappan civilizations. The *Svetasvatara Upanishad* recounts the earliest conflict between religion and science, which ushered in a new intellectual climate during the Second Urbanization (c.600 BC)–a period that allowed for the first time, the emergence of the 'scientist'. Contrary to the belief that science originated in Europe pioneered by the Greek sage Thales (76 BC), historian D P Chattopadhyaya demonstrated that it was actually Uddalaka Aruni from the Indian subcontinent who possibly was the first in human history to claim the need for arriving at knowledge through experimentation. As is well known today, the rationalist medicine of ancient India was rich in its empirical content. Its founders made use of knowledge not only of anatomy, physiology and pharmacology, but also digressed into other disciplines that later evolved into physics, chemistry, biology, climatology and mineralogy. Also, scholars have acknowledged that Panini's grammar (5th century BC) with its 4000 rules is one of the greatest intellectual achievements of all time. It represents a universal grammatical and computing system, which anticipated the logical framework of modern computing languages.

The period between 4^{th} & 12^{th} centuries AD saw remarkable progress made in the realms of astronomy, mathematics, medicine, metallurgy and architecture. The oldest mathematical works essentially dealing with geometry were the *Sulvasutras*. Mathematics itself developed more as an offshoot of an enduring preoccupation with astronomy. Some of