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FITT FORUM

Newsletter of Foundation for Innovation and Technology Transfer, Indian Institute of Technology, Delhi

Visit by Duke of York

A delegation from UK headed by HRH Prince Andrew, the Duke of York visited the Institute on Monday 30th October 2006. Prof. Surendra Prasad, Director, IIT Delhi presented a memento to the Duke of York.

Director IIT Delhi presenting a memento to the Duke of York, U.K.

Message from the desk of Managing Director, FITT

Today, the scientists can ill-afford to remain isolated from the market demands. They have to move away from purely esoteric pursuits and instead strive to establish knowledge alliances and reach out to business and community.

We at FITT work to extend the enterprise culture with students and faculty of IITD. More importantly, we foster a culture of innovation, as it is this attribute, which creates new value and differentiates products and services.

We engage industry and the community with our programmes of world-class research and development. It is our constant effort to develop closer links with the industrial sector and help in developing research and technology into viable business opportunities. This is borne out of our association with corporates, research institutions and industry bodies; and our active entrepreneurship programme through the incubation route. One faculty-student led incubatae company Virtual Wire working in the domain of wireless communication is on the threshold of spinning out into a full commercial venture. FITT is in a mission mode to let our discoveries and inventions yield dividends. From hereon we shall be featuring a few sector specific technologies ready for transfer in every issue of FITT-FORUM. While we constantly work on new initiatives – we derive our strength from excellence in research and technology at IITD. All this banks on our efforts to constantly innovate. While we leverage on brand IIT we also strive to make innovation a way of life at IIT Delhi.

Dr. Anil Wali

Message from Mr. Rajat Gupta, MD, McKinsey

" Dialog and partnership between sectors is vital for India's development to remain on track. Strong relationships, common learning and exchange between business and academia is a fundamental part of this. The ambitious program of the Foundation for Innovation and Technology Transfer at IIT-Delhi is making these goals a reality – supporting the creation and transfer of important new technologies for the benefit of business and society. I offer my strong support for FITT's efforts."

Highlights of the Issue

R&D & INDUSTRY

Design Show 2006

IIT Delhi M.DES. Industrial Design Programme presented the Design show 2006, from 19th to 26th June 2006. This was the 12th year of the programme. The venue was the Industrial Design Studio (Samsung Lab) of IIT Delhi.

This programme is concerned with developing designers, who can creatively conceptualize new product designs for a competitive market. Every year IIT Delhi produce 20 such designers. This is a project based industry and consumer oriented programme. The projects are often supported by the industry, and as such there is a close interaction with the industry. This year projects were sponsored by Pentair, Waver India, Avery Ltd, CEL, Oracle etc. This exhibition was inaugurated by Prof. Surendra Prasad, Director IIT Delhi on 19th June. It was also visited by many distinguished persons which included Prof. V.S. Ramamurthy, Chairman, BOG, IIT Delhi, Mr. Jim Wicks from Motorola, the notable designer of Motorazor, and other distinguished personalities from the design community & industries. The cost of sponsoring project by industry is in the order of Rs. 1 lakh or more. More than 40 new designs were on display.

A few designs displayed at the show are :
Design of retail weighing machine
Single Occupant Vehicle
Trinity – A low cost vehicle
Design Exploration for the family of fuel depensing unit with REF to 4 nozzles and multi product dispensers.

New Technologies, Processes & Knowhow available for transfer in the field of Biopharma / Medical Applications

1. A covalently crosslinked alginate based wound dressing material and a process of preparing the same.
2. A novel hydrogel for use as a drug delivery system.
3. A new process for the production of high strength poly-1-lactic acid (PLA) fibres for bio pharma applications.
4. Antimicrobial grafted polypropylene suture.
5. Botanical pesticide composition against nematodes & other pests.
6. Improved blood grouping card with enhanced properties & flexible usage.
7. A genetically modified lactic acid bacteria with enhanced production activity for lactic acid and its polymers.
8. A process for purification and isolation of Avidin.
9. Controlled release insulin delivery system.
10. An ointephoretic device for transdermal delivery of drugs viz. insulin.
11. An electric oculogram based system for interfacing with gadgets for spinal injury patients.
12. An obstacle sensitive cane for the visually impaired.
13. A water cleaning system for removing jerric ions, arsetic, microbes and other impurities.
14. A process for bone cement.

Technology Transfer Agreement

On May 26, 2006, a technology transfer agreement of High Pressure Bio Gas (GOBAR GAS) Enrichment and Bottling System was made between FITT & Tech-Zone, Tamil Nadu. This was a know how agreement between Tech-Zone & FITT. This technology has been developed by Prof. V.K. Vijay of CRDT, IIT Delhi.

A non-exclusive Technology Transfer agreement was made on 26th October '2006 , between IIT Delhi and ECIL, Hyderabad. This agreement was for Know-how transfer of the Vehicle Authorization System and Under Carriage Vehicle Inspection System developed at IIT Delhi.

Five Fs of FITT

1. Friendliness
2. Flexibility
3. Freedom
4. Focus
5. Facilitation

Virtual Wire Technologies

Virtual Wire Technologies was set-up to capitalize on the opportunities present in the wireless & communications domain and create some very exciting technologies. The vision of the company is pioneering the next generation of communication technologies. Currently the Company's most active R&D area is VOIP. The company has developed VOIP based systems & designs which are available for licensing.

For further information, please contact:

Virtual Wire Technologies,
TBIU, Block-1, Extension, IIT Delhi,
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Mecharte's Researchers Pvt. Ltd.

Mechartes Researchers Pvt Ltd has been brought to existence with the vision to provide total simulation solutions in a customized & user friendly manner. Mechartes is in the development stages for developing simulation package for automobile muffler, shock absorber, steering system & disc brakes. Mechartes is also in development stages for building a Finite Element Analysis (FEM) code and Computational Fluid Dynamics (CFD) code for utilization in the envisioned simulation packages.

For further information, please contact:

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On Yo Mo

On Yo Mo provides search over and accompanying services for structured data. It consists of a platform that implements the search and an application that uses the implementation. The application validates On Yo Mo's platform. It enables search on consumer categories. The consumer search is available for Indian cities. The company has entered innovative co-marketing tie-ups with leading consumer brands to increase visibility.

For further information, please contact:

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Elfsys Embedded Solutions Pvt. Ltd.

Elfsys Embedded Solutons is an innovation driven company with the main thrust in the area of security solutions. Elfsys is using Sensor network technology for solving a variety of real life problems.

For further information, please contact:

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Sanmotech Labs Pvt. Ltd.

Sanmotech Labs, a Technology Business Incubator Unit resident at the Indian Institute of Technology, Delhi has been developing new broad spectrum sun screens actives for protection from both UVA and UVB ultraviolet radiations (UVR) to avoid premature photoageing and sun sensitivity. The molecules being examined are suitable for skin care OTC products, cosmeceuticals and other dermal applications. Sanmotech molecules have been designed in such a way that they offer much better protection from UVR and do not require deployment of combination of several chemicals which one has to repeatedly apply for useful effects primarily because of their inherent UV instability, narrow range of activity and penetration to internal skin layers to initiate harmful radical reactions. The new molecules have been determined to act by different mechanism of photo prtection to offer additional benefits and long lasting effects. Industries desiring collaboration for application work under KITBAPs (Knowledge –Interaction-Technology-Business-Apportionment-Profits) scheme or Cheminformatics for Business scheme of Sanmotech Labs are welcome to contact Sanmotech Labs at the Technology Business Incubator Unit or Prof. H.M. Chawla of Department of Chemistry.

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Tensor Technologies Pvt. Ltd.

Tensor Technologies is an R&D lab which utilizes concepts of extraction of coherent structures and Tensor Algebra to solve a variety of industry related problems. The specific areas in which these concepts can be put to use include relevant information retrieval in web search, Media file Data Com-

pression, mathematical model for forecasting in a chaotic data field etc. Tensor Technologies was founded with a firm belief that the problem of relevant information retrieval can be solved through enhanced personalization and collaboration. Higher Order Tensor analysis techniques developed by Tensor Technologies is being currently used for developing SPAC â^À^Ó a search engine personalization and collaboration platform. Tensor Technologies intends to pursue research and build innovative technologies to improve Personalized Search experience over the Internet and intranet. Tensor Technologies has developed two algorithms Â- for personalized information retrieval and locating expert using mathematical concepts based on the principle of "extraction of coherent structures". Using the browse and search history, Tensor Technologies ' algorithms abstract an Internet user's personality by extracting all interests of the user. Tensor Technologies' personalization algorithms are quite superior to others currently available which rely on user preferences or are rule based. Collaboration algorithms relate different Internet users and rank them as per the domain expertise. Related to this technology one patent has been filed with the USPTO and four others are in pipeline. Tensor Technologies intends to develop a portal for professionals which will help increase productivity in following ways:

(i) Get personalized information delivered to keep him abreast of the latest happenings in various fields.; (ii) Personalized search capability to retrieve information faster; (iii) Expert finder Â- to locate an expert for a topic and ability to communicate and resolve his issues faster; (iv) Social networking â^À^Ó the user can quickly find out who all share his interests; (v) Access on mobile â^À^Ó minimizes number of keywords for search. Tensor Technologies has successfully developed a working prototype which demonstrates search personalization and is available at http://search.t6labs.com

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Centre Plans 200 Tech Incubation Centers

In an effort to nurture entrepreneurship and promote innovative ideas among the Indian youth, the Union government has decided to establish technology-focused incubation centers across the country. According to HK Mittal, advisor, department of science and technology (DST), the government plans to raise the number of centers to 200 by the end of 11th Plan period from the existing 100. Speaking to the media in Hyderabad on Monday, Mittal said each of these centers will focus on specialized technologies including biotechnology, information technology and others." Each of the centers approximately requires investments of about Rs 2 crores to Rs 5 crore," Mittal said. The government further proposes to support the incubations for five years, he added. Mittal was in Hyderabad in connection with the 2nd Global Forum on ' Business Incubation: Empowering Economies through ICT-enabled Innovation and Entrepreneurship' organized jointly by the information for development program (infoDev) of World Bank, DST and Andhra Pradesh government.

(Source: The Financial Express, 07-11-06)

Now, 'google' on Your Cellphone

A company made up mainly of IIT graduates has set up a search engine that provides mobile phone users in Delhi and NCR specialized local information. All users have to do is SMS "find" and the category they are interested in to a particular number. The company, Onyomo will help customers get specific information after analyzing user search patterns. What this means is that if you are looking for contact information (like a telephone number) and the specific location of an ATM or bar for instance, this first –of-its kind service can help you find it. It is also designed to identify the next best option: for instance, if you are looking for a Chinese restaurant in Saket and there is none, the search engine will give you results for the next best option, which could be a Thai restaurant. "We are in the business of providing information through any and every digital channel. Even though this is the Capital, we feel there is a major lack of information. We're trying to bridge that gap through intelligent searches that identify what people want," Shailesh Mehta, IIT alumni and founder member of Onyomo, says. The system has been created by home-grown technologies designed over a period of six months by a core team of 10 people, which includes four IIT alumni and advisors, also from IIT. " We are in a con-

stant process of analyzing user patterns in gathering first-hand information and disseminating it. For instance, in terms of a location that the customer wants, the engine is designed to give results in and around that place. Also, in terms of the specific item, we also provide options that fall in that user pattern like a customer who likes Chinese food will probably also like Thai food. For this, we have specific search algorithms that analyse user search patterns and use artificial intelligence," Mehta explains. The five search operations available are ATMs, restaurants, movies, lounges/bars and cafes (the search engine can differentiate between a café and lounge). The list will be further expanded later.

(Source: Indian Express, 17-09-06)

IITians dial Internet telephony

In yet another instance of innovation coming out of research labs from Indian Institutes of Technology (IITs), a little known wireless and communication technology startup from IIT Delhi has developed an IP phone and multiple VoIP platforms- hardware and software-based on silicon from semi conductor companies like Conexant, Texas Instruments and Analog Devices. The development by VirtualWire Technologies, a student-faculty collaboration, is creating ripples in the fast growing Voice over Internet Protocol (VoIP) or IP telephony market place. Firstly, and most importantly, the company that is at cutting-edge of research promises to bring to the market high-end WiFi VoIP handsets and dual-mode (GSM + WiFi) hand sets at extremely low-cost prices. Secondly, academia-business liaisons are showing signs of maturity to take many forms-new startup companies by academics, consultancies and joint ventures between commercial and academic organizations. VirtualWire demonstrated its VoIP platforms at Comsware 2006, the first International conference on communication software and middle ware in Bangalore recently. The company, says its CEO Vishal Chandra, has identified VoIP as substantially influencing the future of telecom. Accordingly, it has developed VoIP hardware platforms based on silicon from leading semiconductor companies. " On these platforms, we have built VoIP protocol stacks like SIP, RTP, TCP/IP as well as DSP software required for Internet telephony (eg., speech codes like G.729, iLBC, echo cancellation software), " he says. Virtual Wire has also developed an IP phone product, but it is for licensing out to large-scale marketing and manufacturing companies. The details of the product are confidential and are revealed to only prospective clients, he says. According to Mr Chandra, VoIP automatically brings to mind the picture of low-cost communications." However, VoIP equipment is still quite expensive, and particularly if you compare with the cost associated with traditional telephones or even with the low-cost mobile handsets available today. For VoIP to be adopted in a large way in developing nations like India, right up to the last mile, it is necessary for the cost of technology to be reduced significantly," he says. VirtualWire is currently focusing in this direction and has used its experience in low-cost product design to come up with optimized VoIP platforms that offer significant savings on the net bill of materials (BoM) cost. "Additionally, we are doing R&D to enhance voice quality and security for VoIP systems, which are important issues being faced by VoIP users globally," he adds. Although there are several VoIP equipment companies globally, their systems are typically very expensive. VirtualWire claims to have built its systems from the ground-up with generic processors rather than using expensive VoIP chipsets, and by building its own software stacks. One of its VoIP platforms, built on Texas Instrument's OMAP processor, is positioned at developing high-end WiFi VoIP handsets and dual-mode (GSM + WiFi) handsets. It has also demonstrated an IP-PBX system based on the open-source Asterisk PBX software, running on an AMD chipset. The extremely low-cost IP-PBX can support 50-75 callers and is suitable for the SME segment. " Our VoIP hardware/software platforms are suited for fast development of VoIP handsets/desktop devices, IP-PBX systems, VoIP gate-ways,routers, VoIP-enabled WiFi/WiMax access points and client devices, as well as IPTV solutions," Mr. Chandra says. It is now exploring partnerships with global distributors and manufacturers to directly sell complete VoIP products based on its technology. IIT Delhi has been at the forefront of supporting the development of technology based products and services. Some of the startup companies including INRM Consultants, which is using geographic information system (GIS) technology for natural resources planning and management; Kritikal Solutions, which is into embedded systems, computer vision and networking technologies; SofBlue India, involved in developing Bluetooth enabled energy meters.

(Source: Financial Express; 19-06-06)

Nurture Venture Capital

Venture capital plays a significant role in bringing together technology innovation and entrepreneurship. This successful interaction has been the growing engine for success stories in the silicon valley. Recently, the Planning Commission appointed 'Committee on technology innovation and venture capital' gave its report. It was set up to suggest policy changes to facilitate the flow of venture capital (VC) for new ventures, especially from incubation centers of excellence. The report broadly says that the crucial need now is to strengthen the research-finance entrepreneurship network, raise the supply of risk capital for early stage activities, and fine-tune the fiscal and regulatory system. The recommendation aimed at mobilizing risk finance will help indigenous venture capital firms. The upsurge in the capital markets and alternate investment instruments has created a shortage of risk capital. In 2005, only 7% of the total risk capital investment here was diverted to early stage funding. Fund raising is becoming difficult for early stage funding though funds are readily available for late stage funding. To facilitate risk financing, the committee proposes to allow institutional investors like pension funds invest in venture capital funds and to include VC funding in priority sector lending by banks. The report also vouches for fiscal incentives in the form of a setoff against taxable income to individuals who invest in start-ups and domestic venture capital funds. This will encourage individuals to play the role of angel investors by providing seed funding to ideas emanating from research labs and incubation centres. Further, the report suggests that Sebi register a group of high net-worth individuals (HNIs) on the same lines as registered VC firms. It can have far reaching consequences by helping create ecosystems on the lines of Silicon Valley and MIT. The report recognizes the role of incubation centers and research labs in promoting tech ventures. It urges centers of excellence to partner with technological entrepreneurship by suggesting various policy initiatives. It also recommends that leading technology institutions set up profit-sharing Entreprise Incubation units to nurture young entrepreneurs. These units should be able to hold equity and be tax exempt. These measures will boost incubation centers in the country. Venture capital/private equity funding comprises a high percentage of FDI inflow. It should be encouraged even more than FII flows as it creates new ventures, employment, is invested for a long term and is not hot money that can be pulled out at short notice. The committee has proposed regulatory modifications to increase the participation of foreign VCFs in domestic ventures. Relaxation of minimum capitalization requirement for foreign funds will attract individual angel investors and provide capital at the conceptual stage of businesses. Suggestions like tax exemption on capital gains from exit of unlisted companies, inclusion of VC funds in limited liability corporations, etc. will encourage VC institutions. In 2005, private equity and VC firms invested about $2.3 billion in Indian companies across 147 deals. While late-stage and publicly-listed firms cornered over 60% of PE investments in 2005, investment in early stage companies was dominated by Indo-US crossborder tech firms. The going was not easy for purely India-based early-stage companies looking for 'seed stage' or pre-revenue companies as well as those seeking less than $2million in capital with only 22 early stage investments being made in the year. In the first two quarters of 2006, PE investments have been five times higher than during the same period last year, with manufacturing emerging as the most favoured sector followed by IT and IteS, engineering and construction companies. But the number of early stage investments is not equally commendable. The committee's recommendations, if implemented will increase flow of funds at early/seed stage for commercialization of tech ventures, particularly those starting from incubation centers and research labs. It'll boost biotech, technology-based product development, healthcare, life sciences and ITES sectors. Also, domestic VCs will be substantially motivated to continue following the path of nurturing and building enterprises in the country.

(Source: Financial Express, 10-08-2006)

Mission of FITT

To be an effective interface with the industry to foster, promote and sustain commercialisation of Science & Technology in the Institute for mutual benefits.

Prof. K. Thyagarajan

Professor K. Thyagarajan who joined IITD faculty in 1977 currently, holds the position of Professor of Physics (since 1990). Prof. Thyagarajan received his Ph.D. degree from the Physics Department, IIT Delhi in the year 1976. He is a distinguished and renowned Professor in the field of Fiber Optics and Integrated Optics. Professor Thyagarajan has been involved in the research and developmental activities in the general area of Fiber Optics and Integrated Optics. He has made significant contributions in the development of novel techniques for analyzing optical waveguides and in proposing novel designs of guided wave optical components with enhanced features and in the field of optics education . Some of his major research contributions include the development of the matrix method for the analysis of optical waveguides, proposing novel waveguide components such as polarizers, polarization splitters using the concept of resonant tunneling and more recently in the area of optical fiber designs for dispersion compensation and optical amplification. In 1996 Professor Thyagarajan along with his colleagues proposed a very novel design of dispersion compensating fiber exhibiting greater than 5000ps/km-nm which is significantly larger than those which are commercially available. Patent applications have been filed by him on the novel fiber designs.

Professor Thyagarajan has co-authored six texts in the area of optics and optical electronics, all of which have received very favourable reviews in the international community. He has also contributed chapters in many books.

Professor Thyagarajan was awarded the INSA Research Fellowship by Indian National Science Academy for the period Fe 1988-Jan 1991 to work in the area of fiber optic components. He is a co-awardee of the " Lucent Technologies Finolex – Voice & Data Fibre Optic Person of the Year Award-1997" by Lucent Technologies Finolex and Voice & Data. In 1992 he was awarded the Fullbright Travel Fellowship for taking up the position of Visiting Professor at the Department of Electrical Engineering, University of Florida, Gainesville, Florida, USA. In 2003 he was decorated with the title of "*Officier dans l' ordre des Palmes Academiques*" by the French Government. In 2005 he was elected as a Fellow of the Optical Sciety of America.

He was a visiting scientist in *Ecole Normale Superierure*, Paris, France and the Central Research Laboratories (LCR) of Thomson-CSF, France during December 1977 to December 1978. He was a Visiting Scientist at LCR, Thomson-CSF during May-June 1980 and then During December 1983 to December 1984.

He has published more than 125 research publications and has supervised 14 Ph.D theses and over 70 Master's theses and 10 B.Tech theses. He has also co-supervised three SURA projects. Prof. Thyagarajan has been Principal Investigator of many sponsored projects. He has been involved in many consultancy projects in the general area of fiber optics. He is credited with filing of 6 patents in the area of fiber optics.

He has served as a member of various committees of the Ministry of Science and Technology, Ministry of Communication and Information Technology, Government of India. Currently he is a Member, Program Advisory Committee on Laser, Optics, Atomic and Molecular Physics of the Department of Science and Technology.

During 2002-2004 he was the coordinator of the Interdisciplinary programme on Optoelectronics and Optical Communication, a member of the last Curriculum Review Committee for review of the undegraduate courses at IIT Delhi.

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Prof. M. Balakrishnan

Prof. M. Balakrishnan is a distinguished and renowned Professor in the field of Computer Science Engineering. Currently he is holding the position of Dean of Post Graduate Studies and Research at IIT Delhi.

Prof Balakrishnan completed his under graduation B.E.(Hons) in Electronics and Electrical Engineering from BITS, Pilani. He was awarded the Institute Silver Medal for finishing first among all the engineering

graduates of 1977. He completed his Ph.D from Electrical Engineering Department of IIT Delhi in 1984.

Immediately after his graduation in 1977, he joined the Centre for Applied Research in Electronics (CARE) IIT Delhi as a scientist in the Signal Processing Group. Joining as SRA (Senior Research Assistant) in 1977 in the Underwater Electronics Project rose to became a Senior Scientific Officer II in 1979 and Senior Scientific Officer I in 1984 respectively. In 1985 he was appointed SSO I in the Institute. Working in the elite group of scientists in the signal-processing group at that time, he created a niche for himself as a digital architect specializing in translating signal processing algorithms onto hardware. He played a key role in designing and implementing the "Deck Landing Mirror Sight" which was a landing aid for aircrafts on an aircraft carrier. Prof. Balakrishnan along with 5 of his colleagues were awarded the highest value NRDC invention award in 1982 for this work. He was also responsible for designing many of the subsystems in the "Omni Directional Sonar" which was completely designed and developed at CARE, IIT Delhi for the Indian Navy. From mid 1985 to end of 1988, he gained international exposure and worked as visiting scientist/faculty at University of Guelph (Guelph, Ontario, Canada), Syracuse University (Syracuse, New York, USA) and University of Kiel (Kiel, Germany) before joining CSE Department as Assistant Professor in December 1988. He became an Associate Professor in 1991 and Professor in 1997 in the same department. He was awarded the Konrad Zuse visiting Professor award in 1994 and spent a year at University of Dortmund, Dortmund, Germany. He has visited more than 20 universities and laboratories in Europe and U.S. for giving talks on his research. Till date he has supervised 6 Ph.D theses, 3 MS, 56 M.Tech theses and 48 B.Tech Projects in his career at IIT Delhi. He has authored nearly 60 papers in International Journals and refereed conferences. He has worked on 18 sponsored projects and more than 20 consultancies. Most of his research falls in the broad area of EDA (electronic design automation) and computer architecture. Most of his current work resolves around exploring the vast design space effectively and efficiently during synthesis.This involves developing techniques for modeling, estimation and synthesis of digital systems that can search among these large design spaces with minimization of area, delay and power as objectives/constraints. With his clear emphasis on realizable solutions, typically FPGA implementations are integral part of his students work. He has played an active role in supporting the VLSI design activities in India. Today he has emerged as a leading voice for VLSI education in India. He pioneered use of FPGAs (Field programmable gate arrays) for digital design courses in the country more than a decade back and currently conducts an intensive group project oriented course that emphasizes design and implementation of innovative ideas on embedded platforms. In the year 2002, along with seven graduates and four faculty colleagues, he played a leading role in setting up the first-faculty led start up under the Technology Business Program, of FITT, IIT Delhi. This has already emerged as a role model with more than seven such units having come up in the last four years. Prof. Balakrishnan along with other faculty members proposed and organized the first IIT Delhi Openhouse named I^2 TECH 2005 to showcase IIT Delhi's technological capabilities and achievements to the public. This is part of the larger vision to help change the perception of IIT Delhi from a leading undergraduate institution to a research/technology leader.

Currently Prof. Balakrishnan is a member of the Board of Governors of NSIT, academic council (senate) of SMVD University near Jammu. There are three areas, where he is currently focusing along with his three other faculty colleagues in CSE Department, viz, building up a world class research group in Custom Embedded System Design; an industry outreach program for technology based industries in the NCR (Delhi/Gurgaon/Noida belt) which makes IIT Delhi a key knowledge partner in their growth, and a scalable model of undergraduate and postgraduate education which permits expansion of quality education while realizing that quality faculty is a critical resource and need to be effectively utilized.

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Staff shortage: IIT writes to govt for help.

IIT Delhi still suffers from 25 per cent of faculty shortage. The institute's authorities have written to the HRD ministry in this regard. The institute is hoping to rope in more teachers in the forthcoming months and is devising a strategy to compensate teachers with regard to their salaries. At present, there are 421 faculty members. Asked if IIT authorities have brought this to the notice of the government, director Surendra Prasad said: "We have written to the government and we are hopeful that it will be addressed." Referring to the quota decision, he said, "If seats are increased at IIT, then more faculty would be required. This is crucial and the issue of faculty compensation has to be addressed. We are also trying to contemplate how to top up the faculty salaries," said Prasad. " Teachers have a good and a simple quality of life on the campus and facilities are provided to them. We can help the teachers through research grants from our side but the matter requires some debate and contemplation." Another immediate challenge facing IIT Delhi is updating of the existing infrastructure. " There is limited scope for growth on the campus but things have to be worked out. We are also in favour of the idea of establishing a second campus nearby," Prasad added. " We also aim to create more room for the faculty, better equipment for research and add more classrooms and lecture halls. But this would require funds and time. The good news for IIT is that the institute received funds to the tune of Rs.27.5 crore for sponsored projects and Rs.11.8 crore for consultancy assignments. " These funds were more compared to the last year,". Prasad said. " However research remains a top priority for us and we want to double our research output."

(Source: Hindustan Times, 16-08-2006)

IIT students train in combat for fest

Instead of wrestling with words and machines, 200 IIT students have been busy learning unarmed combat for a week. And all this for the institute's annual festival 'Rendezvous' that begins on Thursday. This is the first time student volunteers have been chosen to be part of security during the cultural festival. So along with Delhi Police and IIT Security personnel, these students will be on guard while revelers watch the events during the festival. " These male and female students have been trained in Kung Fu manoeuvres and other security aspects. They will form the innermost ring of security. The first two rings will be taken care of by Delhi Police and IIT security," said Captain B.N. Yadav, IIT's security officer. Pavan K. Varma, director general of the Indian Council for Cultural Relations, will be the chief guest at Rendezvous, which will feature a number of debates, competitions, skits and cultural events. There are three first-aid points within the campus and a doctor and an ambulance will be on standby in case of an emergency. Some vans have also been stationed to ferry people. Cigarettes, water bottles, umbrellas, perfume bottles, lighters and cameras will not be allowed at the venue. Ritesh Agarwal, a civil engineering student said, " I am a student coordinator for the festival. We have been trained to frisk people and use fire extinguishers and metal detectors. Our training lasted for a week and we were taught some stunts in Kung Fu." These students will also be handed walkie talkie sets as a part of coordination. Another student, Sudip Gupta said, " Although we were taught interesting physical manoeuvres, we have been directed not to manhandle anyone, unless absolutely necessary." " Those students who are good in sports activities and have a sharp sense of observation were chosen for security," added Gupta. "We will be on duty for 16 to 18 hours until Sunday, the last day of the festival.

(Source: Hindustan Times, 21-09-2006)

IIT Delhi's all – terrain vehicle comes second in international auto show

The Capital's street markets have paid off for this team from IIT Delhi. Its all-terrain vehicle, created using material from local markets, came in second at an international competition held by the Society of Automotive Engineers in South Africa this month. A six-member team of B.Tech II year (mechanical engineering) completed against eight foreign teams. Other competitors included eight teams from Turkey, Dubai, Iran and Indian entries from Delhi College of Engineering, VIT and RVC College, Bangalore. The IIT team got a ranking of 315 out of 1,000 points, following Iran's Azad College's 333. The segments that the vehicle had to compete in were hill climbing, endurance, skid pull and safety concerns, among others. The proud distinction: all the material for the car, except for the engine, was sourced from local markets like Chawri Bazar and Kashmere Gate. " We've built this car using local material. We bought pipes from Chawri Bazar and bolts from GB Road. The trick lay in designing the suspension, on which we spent nearly seven months, after designing it on software first. This is only IIT Delhi's sec-

ond shot at the competition so it's a proud moment," says Dhaval Parate, a member of the team. The team was led by Shirish Upadhyay, and the other members were Mohd. Afzal, Prasun Jain, Pravesh Nehra and Vinayak Garg. This success, the group hopes, will add to the value of the sport in India. The team, however, had to do without arm and hand restraints. "Nobody in India knows much about automotive sports and neither does anyone take part in such events. .. we could not find arm and hand restraints anywhere. They deducted 256 points for this under the "safety concerns" segment. We also could not find the superior chromium nickel alloy, so we had to use another alloy, sae 1020. We hope this success will encourage more students to take part in such events," he adds.

(Source: Express Newsline, 26-10-2006)

All gas : CBG to supplement CNG

Now for something greener than compressed natural gas (CNG). India may use its vast organic wastes to produce compressed biogas (CBG), which will supplement CNG. While technology to compress biogas has already been devised, it will not be too long before our cars start running on CBG. As of now, biogas is primarily used in rural households for cooking. Biogas consists of 60% methane and 40% carbon dioxide. This biogas can be purified to match CNG standards. The purified form will match the methane content of CNG, which is 95%. While IIT-Delhi and Indian Institute of Science, Bangalore, have already brought to life technologies, which can be used to compress CBG, IIT-Delhi has already filed a patent for the invention which is in the process of being sealed. The government has granted Delhi based Indian Compressors Ltd license to incorporate this technology. With regard to compressing purified biogas, Gaushals society of Kanpur and Gorakhpur have devised feasible methods. " The CBG can be stored in the same cylinders that store CNG and will match the latter's efficiency," said a government official. He added that compression of purified biogas and the marketing of CBG can be undertaken by existing CNG stations. The government will kick off pilot projects for using CBG in vehicles. Gail India has already been roped in to identify locations for such projects. Being a product of cow dung sewage, sludge, non-edible oils and organic fractions of municipal solid waste and crop residues not suitable for fodder biogas- when used as a fuel – recycles carbon dioxide, not emitting a net amount. This makes it a cleaner fuel than CNG. Biogas can also be used in diesel engines that are used for irrigation. According to data from the ministry of non-conventional energy sources, 8 million diesel engines are being used for irrigation. Using biogas, farmers can save on 75% of diesel. The gas can be supplied through a pipeline to the engines. For this, the biogas digestive plants would have to be set up in farms. Such plants have been set up in some rural areas of Punjab and Uttar Pradesh. Greaves India, meanwhile, is selling diesel engines that use biogas as fuel. These engines, however, require additional batteries.

(Source: Economic Times, 10-10-2006)

Commendation by Chief of Naval Staff

Admiral Arun Prakash, Chief of the Naval Staff visited IIT Delhi on Aug. 29, 2006 to review the R&D activities of the Centre for Applied research in Electronics in the area of Underwater Electronics. At this occasion, Prof. R. Bahl and Lt. Cdr. Arnab Das (Project Officer) got Commendation by Admiral Arun Prakash for their valuable contribution in providing state-of-the-art technology to the Indian Navy in the area of Underwater Electronics.

Green cover makes NDMC go to IIT for streetlighting plan

The impressive tree cover, the characteristic features of Lutyens' Delhi will now become the guiding factor in deciding the height and design of streetlights in the area. The New Delhi Municipal Council (NDMC) has engaged experts from IIT-Delhi to draw up a detailed street-lighting plan to tackle the unique problems presented by the area's heavy tree cover.

(Source: Hindustan times, 23-10-2006)

IIT-Delhi pact

Bangalore-based Telelogic, a global provider of software development process, has signed an agreement with the Electrical Engineering Department and the Bharti School of Telecommunication and Management, Indian Institute of Technology-Delhi, to equip their telecom software/protocol engineering lab, with its market leading design product Telelogic Tau. Under the terms of the tie-up, the Department and Bharti School will receive licenses of various Telelogic products for educational and research purposes.

(The Hindustan Times, 15-11-2006)

India now draws 25% of global R&D spend

India Inc's innovation basket is all set to swell, as it continues to be one of the hottest R&D destinations for companies large and small. The country is drawing 25% of fresh global investments in R&D centers. And, many of these centers set up by multinationals are among their largest R&D centers. And many of these centers set up by multinationals are amongst their largest R&D units outside the US or Europe. In the last few years, over 200 global companies across IT, telecom, biotechnology, chemicals, automobiles, consumer goods and pharmaceuticals have set up their R&D hubs in India. From many companies, such as Oracle, Intel, Adobe, STMicroelectronics (STM), SAP and others, the India R&D centre is their largest facility outside the US or Europe. Others, including IBM, Texas Instruments, Delphi, HP, Microsoft, GE, Philips, Motorola, Google, CISCO, Eli Lilly, Bayer AG, Siemens and LG Electronics, have been tapping Indian talent for conducting cutting –edge research over the last decade. However, the growth is not without its problems. There is an acute manpower shortage, when it comes to cutting-edge research." Even as the private sector is on a hiring spree, not enough people are opting for Ph.D and Masters degrees, as a plethora of job opportunities are coming up at the graduation level. Also, we need more Ph.Ds in the high-tech field, " says TV Mohandas Pai, director (HR), Infosys Technologies. Mr. Pai estimates that there is a demand-supply gap of 25-30% for R&D professionals. Adds Naresh Chand Gupta, managing director, Adobe Systems India. " The demand-supply gap in R&D space is not just a challenge for India but even globally, given the fact that companies need to constantly innovate products and services." However, the good news is that the shortage is not acting as a dampener for shifting R&D work to India. " India has a rich talent base. As a result, a lot is going on in the Indian context, which forms the basis for R&D work", says Daniel Dias, director, IBM Research lab. IBM has a research lab and development centers in multiple locations within India. The value of R&D work done in India is also set to get a boost with new centers being set up in the country. According to Evalueserve, the value of R&D work done in India will touch $27.5 billion by 2010 (against $8.5 billion in 2005), throwing up an additional manpower requirement of 2.94 lakh researchers between 2006-10 and another 3 lakh professionals between 2011-15. Commenting on the manpower problems, swati Piramal, director-strategic alliances and communication, Nicholas Piramal, told ET, "Universities are not equipped with high-tech infrastructure for training researches".

It is the industry which trains them and then loses them to competitors," Piramal adds. Mr Pai, on the other hand, emphasizes on the creation of a National Science Foundation to fund research in educational institutions and arouse scientific temper in schools and colleges. That kind of effort will only help boost R&D in India. Meanwhile, the companies that are already here are betting big on India. For instance, SAP Labs India is the company's largest development facility outside Germany. Similarly, the GE R&D centre in Bangalore is its second largest anywhere in the world. Philips' second campus in India is its largest research centre outside Eindhoven. Adobe Systems has 900 people in its India R&D operations-the highest number outside the US. Chipmaker Intel has 3,000 staff in India, the majority at its R&D unit. Some of Intel India's R&D's recent contributions include complete design of the Centrino mobile chip called Napa. STM has built a state-of-the-art design campus in Greater Noida, which once fully developed will have 5,000 engineers. They hav earmarked $30 million in investments over the next two years. Says Vivek Sharma, director, India Design Centre,"India's contribution in the sphere of R&D to ST worldwide is phenomenal, and the success is reflected in the fact that ST India is today, the company's largest advanced R&D design centre outside Europe." This could only get a boost in future as global majors line up dizzying investments for India. And, a substantial chunk of the same will go towards R&D facilities. For instance, Intel will be spending over $1 billion, IBM $6 billion, CISCO $1.1 billion, Microsoft $1.7 billion, and SAP $1 billion.

(Source: Economic Times, 02-11-2006)

FICCI-FITT MOU

FITT enters into an MOU with Federation of Indian Chambers of Commerce and Industry for promoting interaction between IIT Delhi and the Corporate World in varied disciplines of science & engineering.

Intangible Opportunities

Not long ago, the value of companies resided mostly in things you could see and touch. Today it lies increasingly in intangible assets such as the McDonald's name, the patent for viagra and the rights to spiderman. Baruch lev, a finance professor at New York University's Stern School of Business, puts the implied value of intangibles on American Companies' balance sheets at about $6 trillion, or two-thirds of the total. Much of this consists of intellectual property, the collective name of copyrights, trademarks and patents. Increasingly, companies and their clever banks are using these assets to raise cash. The method of choice is securitisation, the issuing of bonds based on the various revenues thrown off by intellectual property. Late last month Dunkin' Brands, owner of Dunkin' Donuts, a snack-bar chain, raised $1.7bn by selling bonds backed by, among other-things, the royalties it will receive from its franchises. The three-private-equity firms that acquired Dunkin' Brands a few months ago have used the cash to repay the money they borrowed to buy the chain. This is the biggest intellectual-property securitisation by far, says Jordan Yarett of Paul, Weiss, Rifkind, Wharton & Garrison, a law firm that has worked on many such deals. Securitisations of intellectual property can be based on revenues from copyrights, trademarks (such as logos) or patents. The est-known copyright deal was the issue in 1997 of $55m-worth of "Browie Bonds" supported by the future sales of music by British rock star David Bowie. Bonds based on the films of DreamWorks, Marvel comic books and the stories of John Steinbeck have also been sold. Many restaurant chains and fashion firms have issued bonds backed by logos and brands. Intellectual-property deals belong to a class known as operating-asset securitisation. These differ from standard securitisations of future revenues, such as bonds backed by the payments on a 30-year mortgage or a car loan, in that the borrower has to make his asset work. If investors are to recoup their money, the assets being securitised must be "actively exploited", says Mr. Yarett. The market for such securitisation is small. Jay Eisbruck of Moody's reckons that about $10bn worth of bonds are outstanding. But there's "big potential", he says, as licensig patented technology generates $100bn a year and involves thousands of firms. Raising money this way can make sense not only for private-equity firms, but also companies with low credit ratings that can't easily tap the capital markets or with few tangible assets as collateral for bank loans. Some universities have joined in too. Yale built a medical complex with some of the roughly $100m it raised securitising patent royalties from Zerit, an anti-HIV drug. It may be harder for investors to decide whether such deals are worth their while. The most obvious risk is that the investors cannot be sure that the assets will yield what borrowers promise. Valuing intellectual property-an exercise based on forecasting the timing and amount of future cash flows is more art than science. So far, says Mr. Eisbruck, these bonds have generally matched investors' hopes. But regulators say that only institutional investors, like pension and hedge funds, can buy them. Fans seeking a slice of the profits from the next installment of X-Men must wait.

(Source: The Economic Times, 21-06-06)

List of Patents Applications filed during April – Sept' 06

S. No.	Title	P.I & Deptt.
1.	Polygon Autotransformer Based 24 -Pulse ACD – DC converter for Harmonic Mitigation	Prof. Bhim Singh Elect.Engg. Deptt.
2.	Controlled Negative Inductance	Prof.B.P. Singh Elect Engg. Deptt.
3.	An Air Filtration Apparatus	Dr. Apurba Das Textile Tech Deptt.
4.	Process for Preparation of Formulation for Leaf Shine and the Product	Prof.H.M. Chawla Chemistry Deptt.
5.	Process for Preparation of Formulation for hair shine and hair setting and the product	Prof.H.M. Chawla Chemistry Deptt.
6.	Process for Preparation of a Formulation for Fruit Shine	Prof. H.M. Chawla Chemistry Deptt.
7.	Oral insulin Delivery system	Prof. Harpal Singh CBME
8.	A Novel Biocatalyst Design called Crosslinked Protein coated Microcrystals	Prof.M.N. Gupta Chemistry Deptt.
9.	A Schottky–gate BMFET device and method of operation thereof	Prof. M. Jagadesh Kr. Elect. Engg Deptt.
10.	A novel process for the production of therapeutic proteins and resulting products thereof	Prof. P. K. Roy Choudhury DBEB
11.	A device and Structure for controlling parasitic fringe	Prof. M. Jagadesh Kr. Elect. Engg. Deptt.
12.	A smart communication for OFDM, OFDMA and SCFDE and method of operation thereof	Dr.N.K. Sharma Elect. Engg. Deptt.

Innovation is India's future - Strong Intellectual Property Laws Crucial

In the 16 years since Microsoft set up operations in India, I have been enormously impressed by the country's great progress, particularly the emergence of its world-class information technology sector. In today's fast-changing global economy, however, India faces great challenges. Among them are how to sustain long-term economic growth and how to expand opportunity for all citizens. I believe that one of the most effective way to meet these challenges is through technological innovation. Advancements in microelectronics, software, communications and the re-engineering of business process- these are among the main engines that drive productivity and growth in the world today. And while new technologies benefit everyone, they especially benefit the economies that nurture them. The good news is that India is well positioned to become one of the world's leading innovators. In software, the country is already at the forefront, home to one-third of the world's software engineers and an industry that has created more than one million new jobs since 1999. Indian employees at Microsoft's facilities in Hyderabad and Bangalore, for example, have made important contributions to Windows Vista and Microsoft Office 2007. They are leading development of some of our most important future mobile technologies and technologies for emerging markets. Yet, as bright as India's high-tech future appears, the nation has serious rivals in Asia and elsewhere. To win, India can strengthen its competitive advantage, One way is to invest further in research and education, especially graduate education. Demand for R&D professionals in India has outstripped the supply by a reported 25% to 30%. Strategies are needed to encourage more students to pursue graduate degrees in science and engineering. Another useful step would be to preserve incentives for innovation by doing more to protect intellectual property. This is important for global companies such as Microsoft that invest deeply in R&D, but strong intellectual property laws and enforcement are even more important fo India's entrepreneurs and technologists. Their very survival- and their plans for building export business-depends on their first being able to protect their inventions in the domestic market. Amid tumultuous changes in the global economy over the past several years, India has demonstrated an admirable ability to respond with wise policies and needed reforms. As India continues to grow and evolve, the rest of the world will watch with growing respect- and be as impressed as I have been- as this fascinating, dynamic, ingenious nation strides forward to realize its full potential.

Steven A. Ballmer

(Source: The Economic Times, 09-11-06)

Law on market revenues for scientists planned

With an aim to incentivise innovation, the Government plans to bring a legislation that assures that not less than 30 per cent of revenues earned from license fee or commercialization of a project goes to the scientists(s) who worked on the project. The legislation envisages accrual of another 30 per cent of fees to the project, while 40 per cent of the license fees should be ploughed back to the institution where the project was taken up. The legislation is called the Public Funding of R&D Project (Protection of IP) Act. This law would be applicable to all public funded research and academic institutions, said Union Minister of Science and Technology Mr. Kapil Sibal at the Indian Economic Summit. While the Council of Scientific and Industrial Research (CSIR) already has such norms, universities, IITs and IISc have internal processes, and levels of revenue share vary widely. While some institutions do not incentivise the innovators at all, some pay over 30 per cent of license fees. The draft of this legislation is ready and would soon be put up on the Ministry Website for public comments, said Mr. Sibal, adding that the legislation would be introduced during the Budget session of Parliament.

(Source: Hindu Business Line; 29-11-2006)

FITT-Corporate Membership

FITT invites the industry/industry associations/R&D organizations and financial institutions to become corporate members of FITT at nominal fees.

A Corporate Member client can participate in Technology Transfer and joint R&D programmes of the Institute on a priority basis, with FITT providing the interface.

To become a corporate member of FITT, please send the corporate membership form duly filled with a nominal fee, which can be available on request from FITT office or can be downloaded from the FITT website (http://www.fitt-iitd.org).

TECHNOLOGY DEVELOPMENT & TRAINING PROGRAMMES

TECHNOLOGY DEVELOPMENT PROJECTS (APRIL – SEPT' 06)

Sr. No	Title	PI	Deptt	Client
1	Feasibility of Getting double cantilever test structures fabricated at MEMSTECH Foundry in Singapore	Prof. S.K. Koul	CARE	Astra Microelectronics Tech Ltd., Hyderabad
2	Characterization of Pyro powder and energy Saving in Production of Aluminium Powder	Prof. B. Pitchumani	Chemical Engg.	Sri Kaliswari Metal Powders Pvt. Ltd., Sivakasi
3	Microencapsulation of Bifidobacterium longum	Prof. Subhash Chand	DBEB	GENOM Biotech Pvt. Ltd., Nashik
4	Enzymatic Processing of Tamarind Kernel Powder	Prof. Subhash Chand	DBEB	Dali Agroworks, New Delhi
5	New Design of Retail Scale (Weighing Machine)	Prof. L.K.Das	IDDC	Avery India Ltd.
6	Development of a Jack for the wheel chair for displaced persons	Prof. Sudipto Mukherjee	Mech. Engg.	Samir Mahindra, New Delhi
7	Low Power IC Design EDA Tools	Prof. M. Balakrishnan	CSE	Sequence Design India Pvt. Ltd., NOIDA
8	Media & Process Optimization for fermentation of Veticillium	Prof. Vikram Sahai	DBEB	Biotech International, New Delhi
9	Development of Hydrogel dressings for chronic wounds	Prof. Veena Chaudhary	CPSE	Azzure Medical Systems, New Delhi
10	Development of TCP/IP Protocol Stack for AC controller	Prof. Subrat Kar	Elect. Engg.	PowerTech Electronics, Indore
11	Design of two Nos water filtration units	Prof. L.K. Das	IDDC	Pentair Water India Pvt. Ltd., NOIDA
12	Modeliing Railway Track Alignment between Birganj & Kathmandu in Nepal	Prof. A.K. Gosain	Civil Engg.	INRM Consultants Pvt. Ltd., New Delhi

TRAINING PROGRAMMES

Since May 2006. 11 customized HRD programmes were held under the agies of FITT. A list of some HRD programmes completed / forthcoming are given below:

Sl. No.	Title	Date & Venue	PI / Deptt.	Sponsored / Participation
1	NP-Completeness & Application Algorithms	16 to 24 May, 2006, Cadence, Noida	Dr. Naveen Garg, CSE	Cadence Design Systems (I) Pvt. Ltd., Noida
2	Lectures on Telecommunications	Six lectures as per mutual convenience	Dr. Ranjan Bose, EED	INTECH Instrumentation Pvt. Ltd., New Delhi
3	Value addition training at IITD for TMEs from ARI (Advanced Workshop Training Programme	5 Apr. to 6 May,2006, IITD	Prof. Sunil Pandey, Central Workshop	Applied Research International (ARI), New Delhi
4	Short Course on "Vibration and Noise Control	29 June to 1 July, 2006, IITD	Dr. Ashish K Darpe, ME	Participation based
5	Advanced Workshop Training at IITD for ARI	22.5.2006 to 1.6.2006, IITD	Prof. Sunil Pandey, Central Workshop	Applied Research International (ARI), New Delhi
6	Modern concrete Construction Processes	24-29 July, 2006, IITD	Prof. B. Bhattacharya, Civil Dr. K. N. Jha, Civil Engg.	Participation based
7	Value Addition Training of ARI Trainees Electrical Engineers	October 2006, IITD	Prof. Sunil Pandey, Central Workshop	ARI, New Delhi
8	Certificate course on Embedded Systems and Applications	1 Sept to 27 Nov., 2006, IITD	Prof. Subrat Kar, EED Dr. I.N. Kar, EED	Participation based
9	Training Programme on Telecom Technologies	October 14, 2006. Gurgaon	Prof. Subrat Kar, EED	Evalueserve. com Pvt. Ltd., Gurgaon
10	Conduct of Unix Systems / Networks Services Administration	27 Nov. to 9 Dec. 2006, IITD	Prof. A.K. Gosain, Head, CSC Dr. Shriram Hedge, AM	Defence Services, New Delhi
11	International course on Transportation Planning and Safety Modeling and Crash Worthiness	4 to 10 Dec., 2006, IITD	Dr. Geetam Tiwari, TRIPP	Participation based

Forthcoming Programmes

1	International Conference on Scientific and Industrial Applications of High Performance Computing	28 Feb. to 1 Mar., 2007, IITD	Prof. S. K. Dash, CAS	IDC / UNISYS
2	Workshop on Nanotechnology-Current Status and Challenges	17-18, March 2007, IITD	Prof. M. Jagadesh Kumar, EED Prof. A. K. Ganguly, Chemistry	Participation based
3	"Asset Protection in digital age" An innovative information security workshop	12 January, 2007, IITD	Prof. S.K. Gupta, CSE	Participation based
4	RF and Microwave circuit for Radar Applications at LRDE Bangalore	To be finalized	Prof. S.K. Koul, CARE	LRDE, Bangalore

Intellectual Property Protection of Software & Medical Devices: A US Perspective

FITT organized a lecture on "Intellectual Property Protection of Software & Medical Devices: A US Perspective" on September 06, 2006 at the IRD conference Room of IIT Delhi. The speaker was Mr. Lewis Lee of LEE & HAYES PLLC, USA. A large number of faculties of IIT Delhi, along with the students attended the lecture.

Vibration and Noise Control

A three day short course on vibration and noise control was organized by the department of mechanical engineering IIT Delhi, under the aegis of FITT from June 29, 2006 to July 01, 2006. The objective of the course was to provide a wholesome knowledge of vibration, noise, measurements and instrumentation, active/passive vibration and nois control measures, modal analysis and dynamic design as well as influence of noise on human beings. Important features of the course were case studies and number of hands-on practical sessions involving latest instruments and measurement techniques. The course was attended by 17 practicing engineers and scientists from the industry and research institutions such as Eicher Engineering, Rieter Automative India, BHEL, DRDO, ISRO, NTPC, GE-IIC and Rico Auto Industries, L&T Engineering etc. From the Department of Mechanical Engineering, IIT Delhi, Prof. K. Gupta, Dr. S.P. Singh, Dr. Ashish K. Darpe & Dr. S.V. Modak delivered expert lectures on variety of topics. A special lecture on human response to noise was delivered by Dr. Shafiquzzaman Khan from the Royal Institute of Technology (KTH) Stockholm, Sweden. The coordinator of the course was Dr. Ashish Darpe.

Participants at the Workshop of Vibration and Noise Control

Certificate Course on Embedded Systems and Applications

The Sixth Certificate Course on Embedded Systems and Application was ended successfully on November 27, 2006. the Course was held from September 1, 2006 to November 27, 2006. There were 38 participants for this course. The academic coordinators for this course were Prof. Subrat Kar & Dr. I.N. Kar, Electrical Engineering Deptt., IIT Delhi. Course faculty members were Prof. Santanu Chaudhury, Elect. Engg; Prof. Subrat Kar, Elect Engg; Dr. I.N.Kar, Elec Engg; Dr.(Mrs) Lipika Dey, Maths Deptt; Dr. S.M.K.Rahman., Centre for Biomedical Engg; Dr. Kolin Paul, Computer Science & Engg Deptt.

The course was organized under the aegis of FITT.

International Congress & Exposition on Trade in Services

FITT participated at the International Congress & Exposition on Trade in Services being held at Hotel Ashok, New Delhi from October 04-06, 2006. It was a big event whereby service sectors of India got a boost to display their products & services.

Mr. P.Bhattacharya & Dr Anil Wali at the Conference with Dr. Mattoo of World Bank

26th India International Trade Fair

FITT participated at the 26th India International Trade Fair, being held from November 14-27, 2006, at Pragati Maidan, New Delhi. The FITT stall was put up in Hall No-18. Prototypes of Technologies, developed at IIT Delhi, were displayed during the exhibition along with posters. Over 500 visitors & business delegates visited the stall.

Honours

FITT received silver medal, during the Trade Fair held at Pragati Maidan. Affiliated to IIT Delhi, FITT set up a display of inventions and innovations of IIT students and researchers. Innovative gadgets for the physically disabled, special blow switches, which respond to blowing of air, or touch pad switches which respond to touch on a pad got special attention at the FITT Stall.

(Source: Indian Express, 27-11-2006)

Convocation of IITD 2006

The 37th Convocation of IIT Delhi, was held on August 12, 2006. Mr. Azim Premji, Chairman, Wipro was the chief guest of the function. A total of 1,285 degrees were awarded at the ceremony. 363 candidates

received B.Tech degrees, 80 received M.Sc degrees, 15 received D.I.I.T., 26 received 5-year Integrated M.Tech in Maths & computing, 86 candidates got 5-year Dual Degree (M.Tech & B.Tech), 497 candidates received M.Tech degree, 12 received M.Des, 11 received M.S.(Research) degrees, 61 candidates received M.B.A degrees,. Prof. Surendra Prasad, director, IITD, in his speech said that the institute tops the number of graduating doctorates in the IIT system, with 134 students getting their Ph.D degrees at the convocation, the highest till now. " We are working to double this number in the next four years" he added. Premji expressed his delight 'to be among the most talented people in the world'. For students who look to him as a role model, he had 10 lessons to impart. "Take charge of the situation, earn happiness, nothing succeeds like failure, nothing fails like success, there has to be a better way, respond not react, remain physically active, never compromise on your core values, play to win and last but not the least give back to society", said Premji. Among the students who received a gold medal were Ashutosh Nayyar who got the President's gold medal and Mekala Krishnan who got the Director's gold medal. Distinguished alumni award was received by Mr. Asim Ghosh (Managing Director Hutch), Prof. Renu Malhotra (Prof. Department of Planetary Sciences and the Lunar and Planetary Laboratory, University of Arizona, U.S.A.), Mr. Navin Chaddha (Managing Director, Gabriel venture Partners). Distinguished alumni Service Awards were received by Dr. P.S. Rana (C&MD, HUDCO), Mr. Ravi Uppal (Vice Chairman & MD, ABB India), Mr. Ashwini Gupta (Executive Vice President and Chief Risk Officer, American Express Company, New York) & Mr. Pradeep Singh (Chairman and CEO, Aditi Technologies).

We value Your Feedback

FITT seeks to explore various avenues to enhance the quantum of interaction between industrial units/end-users and IIT Delhi. Therefore, we shall keenly look forward to your feedback and suggestions on various issues as also about the presentation and content value of the new-look FITT-FORUM.

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