



**PDPM**  
**INDIAN INSTITUTE OF INFORMATION TECHNOLOGY,**  
**DESIGN & MANUFACTURING JABALPUR**



**Annual Report 2009-10**



## From the Director's Desk

Educational Institutes are built by the passion and dedication of faculty and students, supported by efforts and hard work of technical and other staff.



Every Institute strives to produce quality human resource by creating an excellent environment for teaching and learning and by continuously refining its methodologies and practices. This Institute is no exception. The exception that makes this Institute different from other institutes of engineering education is its unique curriculum with greater emphasis on hands on experience and projects based learning. Evolving a curriculum that focuses on IT, design and manufacturing is not an easy task and our team is working on this, keeping in view the research trends and industry expectations.

Last five years have witnessed enormous progress in almost all fronts, inspite of all odds that surfaced from time to time. Especially the year 2009-10 was full of events and I have pleasure in reporting some of those landmarks.

### ACADEMIC ACTIVITIES

**Conferment of Deemed to be University status to the Institute on June 24, 2009 by MHRD.** The Central Government declared the Institute as a 'Deemed-to-be-University' under de Novo category on the recommendation of University Grants Commission on June 24, 2010. The status has been provisionally given for a period of five years, with effect from academic year 2005-06 subject to compliance of certain conditions as specified by UGC.



**Increase in Students Intake:** In the academic year 2009-10, the intake of students in the undergraduate (UG) programmes was increased from 156 from 183. 31 students were admitted to the post graduate programmes including those admitted in Ph. D. programme.

### FIRST CONVOCATION OF THE INSTITUTE AUGUST 7, 2009

**First Convocation of the Institute:** The first convocation of the Institute was held on August 7, 2009. The then Secretary, Higher Education, Shri R.P. Agrawal was the chief guest of the occasion. Sixty three students were awarded the degree of Bachelor of Technology and one student was awarded the degree of Master of Technology. Keshav Sahani of Computer Science and Engineering won the Chairman's Gold Medal for the best academic performance while Ankit Mathur bagged the Director's Gold Medal for outstanding



all round performance in the graduating batch. Design and Manufacturing proficiency gold medal was awarded to the project “intelligent bicycle transmission system” which was implemented by a group of four students, Arpit Awasthi, Bipin Kumar Mishra, Pragam Rathore and Ram Krishan Shukla. Silver medals for discipline wise best academic performance were also given to Keshav Sahani in Computer Science and Engineering, Amit Kumar Mishra in Electronics and Communication Engineering and Vivek Shahi in Mechanical Engineering.



Chief Guest Shri R.P. Agrawal, Chairman Shri A.K. Singh and Director Prof. A. Ojha alongwith Board and Senate Members on the occasion of the First Convocation

#### IIIT DM became admission centre for the

CCB: From the current academic session, the Institute started playing the role of academic centre for CCB. Dr. Tanuja Sheorey, Associate Professor was the Admission Centre In-Charge.

**Raman Distinguished Lecture Series Inaugurated.** Dr. Anil Kakodkar, Former Chairman, Atomic Energy Commission, an outstanding nuclear scientist and DAE-Homi Bhabha Chair Professor at BARC delivered the first Raman Distinguished Lecture on the topic 'Towards safe and secure energy future' on March 17, 2010 at PDPM IIITDM Jabalpur.

In addition, Prof. Manindra Agrawal, a noted computer scientist from the Dept. of Computer Science and Engineering, IIT Kanpur, delivered a special lecture on the topic "NPP Hypothesis" at the Institute on March 23, 2010.



Dr. Anil Kakodkar delivering lecture

#### RESEARCH & DEVELOPMENT

The year 2009-10 was quite satisfying in terms of research output. Following two research projects were approved by the Department of Science and Technology for financial aid.

- ◆ Constrained Curve Drawing Algorithms for Robot Motion Planning, Principal Investigator, Prof. Aparajita Ojha, Co Investigator Dr. Tanuja Sheorey.
- ◆ Compressed Sensing for the Analysis, Classification and Reconstruction of Tomographic images under FAST-TRACK scheme of DST. PI- Dr. C.S. Sastry.

In addition, project proposals have been formulated and submitted to different funding agencies including one joint project by IIIT faculty Professor Puneet Tandon, Dr. Tanuja Sheorey, Dr. Vijay Gupta and Japanese professors.

Apart from this, three consultancy projects were also taken up by Prof. Amit Ray, Dr. Tanuja Sheorey and



Dr. Sunil Agrawal of the Institute. Dr. Tanuja Sheorey has also been coordinating a project for implementation of Virtual Lab with faculty of IIT Kanpur to contribute in the National Mission on Education through ICT. Two lab experiments will be developed under the project.

Research labs were created in the areas of interest of the faculty in all three branches. Some of the major equipment procured/installed for creation of advanced labs are cluster computers, server for biometric labs, high end systems for digital signal processing, CNC machines, injection molding machine, rapid prototyping machine, Infra red camera, Scanning Electron Microscope, XRD and AFM.

Faculty of PDPM-IIITDM-Jabalpur participated in many conferences/ workshops in India and abroad and presented their research contributions. This year, there has been a substantial increase in number of research publications by the faculty and students of the Institute and it is satisfying to note that many of the results were published in quality journals.

### IIITDM JAPAN COLLABORATION

The year witnessed good progress in IIT-Japan collaboration. Professor Aparajita Ojha and Professor Puneet Tandon were invited for the 3rd meeting with the Japanese consortium to review the progress and further possibilities of collaboration. They interacted with various members of the universities and industries of the consortium and met the officials of other universities and industries to strengthen the ties and expand the scope of consortium.

A memorandum of understanding between the Institute and Kanagawa Institute of Technology was also signed for exchange of scholars and faculty for the purpose of research collaboration.



Some of the very renowned experts from Japan visited the Institute. Among them were (1) Professor Nobuyuki Iwatsuki, Tokyo Institute of Technology (2) Professor Takashi Matsumura, Tokyo Denki University (3) Professor Kenichi Mjura, National Institute of Informatics, Tokyo (4) Professor Takashi Nanya, University of Tokyo and (5) Professor Yoshio SAITO, Tokyo Institute of Technology. They delivered course lectures and extended support in our teaching programme.

Five B. Tech. students visited various universities and industries in Japan in June-July 2009 under JENESYS programme and another set of seven students were offered internships for a period of 1-2 months in June-July 2009 in reputed companies like Amada, Toshiba, Hitachi, Sumitomo Metals and Nakata. The work of students was much appreciated by the experts in Japan and all the seven students were given pre-placement offers. Further, seven faculty members also visited Japan. Six of these visits were of one month duration, supported by Govt. of Japan under JSPS programme and one long term visit was supported under BOYSCAST scheme of DST.



### CAMPUS AND INFRASTRUCTURE DEVELOPMENT ACTIVITIES

In the year 2009-10, several projects were initiated for construction. Preliminary estimates for construction of (i) Residential complexes Reva Residency and Narmada Residency and Security barrack were approved and the work is on for award of tender. Triple Seated Hall of Residence was started in the beginning of the year and the progress of construction is satisfactory. In addition to this, works of two more buildings, namely (i) Lecture Hall and Tutorial Complex and (ii) Mess and Dining Hall were given to CPWD for award of tender. The construction is likely to begin soon.



Construction of Core Lab Complex (CLC) was already completed. The Institute has started functioning from this building by making temporary arrangements for class rooms and offices. In the memory of the former Director of the Institute, the Core Lab Complex was named after him as “Sanjeev Bhargava Core Lab Complex”.

### FACULTY AND STAFF

On the faculty front, fifteen more faculty members joined the Institute this year making the total strength of academic staff 35. This played a major role in improving the research performance of the Institute and in becoming more self-sufficient in running our teaching programme. Further, Selection process for 29 different non teaching positions was also completed in the month of October 2009 and 23 positions were filled up, making the total strength of non-teaching staff 30 with 02 filled posts of officers' level. Other posts have been advertised / re-advertised.

### FINANCIAL POSITION

The Institute had a satisfactory financial year during 2009-10. The Institute received an amount of Rs.4100 lakhs in the year 2009-10 as plan grant from the Ministry of Human Resource Development, Government of India with an opening balance of Rs. 757.48 lakhs. Other internal income of the Institute was Rs. 159.56 lakhs during 2009-10. Major items on which expenditure was incurred were (i) Civil works Rs.3267.38 Lakhs (ii) procurement of equipment for establishment of professional and research labs Rs.858.66 Lakhs (iii) IT Infrastructure Development Rs.174.29 lakhs (iv) Salary & Administrative expenses Rs. 825.79 lakhs.

### STUDENTS' ACTIVITIES

Students' activities gained momentum in the year 2009-10 since they were able to properly organize various events in their own campus. A good number of students organized and participated in intra and inter Institutional technical, sports and cultural activities. The annual sports festival *Gusto*, technical festival *Abhikalpan* and the cultural festival *Tarang* were well organized by the students with huge participation of students of other colleges from Jabalpur. Apart from this, students also participated in events organized by other prestigious Institutes of the country and bagged many prizes in such competitions.



## Brief Historical Background

Pandit Dwarka Prasad Mishra Indian Institute of Information Technology, Design and Manufacturing Jabalpur was set up by the Ministry of Human Resource Development, Government of India with a primary aim to produce technically qualified manpower in the field of IT enabled design and manufacturing. Set up as an autonomous institute, it was registered under the MP Society Registration Act on January 24, 2005. On February 07, 2005 its foundation stone was laid by Shri Arjun Singh, the Honourable Minister of Human Resource Development. Prof. Sanjay Govind Dhande, Director of the Indian Institute of Technology, Kanpur was the founder Director of the Institute and Shri Sudeep Banerji, the then Secretary to Government of India, Department of Higher Education, Ministry of Human Resource Development, was the founder Chairman of the Board of Governors.

With the dynamic and effective initiatives of the two visionaries, B. Tech. Programme was launched with effect from August 8, 2005 in three branches - Computer Science and Engineering, Electronics and Communication Engineering and Mechanical Engineering. These initiatives were further pursued with vigour by Prof. Sanjeev Bhargava who joined the Institute as the first regular Director on May 15, 2006.

In April 2006 the Institute was allotted a land of ~ 250 acres on Dumna Airport Road, Jabalpur. Some of the buildings have been completed and the Institute started functioning from its Dumna campus from July 27, 2009.

The Institute was conferred with the Deemed-to-be University status on June 24, 2010. First convocation of the Institute was held on August 7, 2009. Shri. R.P. Agrawal, the then Secretary, Higher Education, Govt. of India was the chief guest of the convocation.



*Professor S.G. Dhande, Prof. S. Bhargava and Prof. P. Tandon, (from left to right) on the occasion of Bhoomi Poojan of the Institute Campus*



*Shri Sudeep Banerji and Prof. Bhargava during their Japan visit*



*Chairman Shri A.K. Singh  
during Convocation 2009*

During the visit of the Honourable Prime Minister Dr Manmohan Singh to Tokyo in December 2006, a joint India-Japan agreement was signed for collaboration between the two countries. Among other things, it was agreed that Japan would help in nurturing PDPM IIIT DM, Jabalpur. The agreement covers exchange of faculty and students and aims to jointly develop teaching and research activities of mutual interest.

Since this Institute is being developed by the Ministry of Human Resource Development for providing a role model for excellence in quality teaching and research in IT Design and Manufacturing, we are conscious of our responsibilities and the Institute is progressing well to become a premier Institute with focused objectives.



## The Board of Governors

Professor Ashok Jhunjhunwala, Professor of Electrical Engineering, IIT Madras has been nominated as a member of Board of Governors (BOG) by Ministry of Human Resource Development, Govt. of India. Further, Professor Puneet Tandon, PDPM IIITDM, Jabalpur has also been included as a member of Board (Senate nominee). With these two new members, the size of BOG has now become 15. Following is a list of members of the Board:

Name of Member and Designation	Official Address
Shri. A.K. Singh, (Chairman, BOG) Retd. IAS	Member, Public Enterprises Selection Board, Public Enterprise Bhavan, CGO Complex, New Delhi- 110003
Prof. S.G. Dhande Director	IIT Kanpur
Prof. H. P. Dikshit Director General	School of Good Governance & Policy Analysis (An Autonomous Institute of Govt. of MP), Bhopal
Shri S D Dimri Member/A&E	Ordnance Factory Board, Kolkata, 5th Floor, 10A, S. K. Bose Road, Kolkata- 700001
Dr. Manoj Gaur Executive Chairman, CEO & MD	"JA House", 63, Basant Lok, Vasant Vihar, New Delhi - 110057
Prof. Manoj Harbola Professor	Dept of Physics, IIT Kanpur
Mr. Anurag Jain, Secretary to CM & IT Department, IAS	Room No-533, Mantralaya. Vallabh Bhawan, Bhopal
Prof. Ashok Jhunjhunwala Professor	Dept. of Electrical Engineering, Indian Institute of Technology Madras.
Shri Amit Khare, Joint Secretary (ICC)	Room No 107, C wing, Shastri Bhawan, New Delhi
Prof. Aparajita Ojha Director PDPM-IIITDM Jabalpur	PDPM-IIITDM Jabalpur, Dumna Airport Road, PO: Khamaria, Jabalpur- 482005





**Name of Member and Designation**

**Official Address**

Prof. Rajeev Sangal  
Director

International Institute of Information Technology,  
Gochibowli, Hyderabad - 500019

Prof. D.P. Singh  
Vice Chancellor

Banaras Hindu University, Varanasi

Prof. Pradyumna Vyas  
Director

Director's Riverfront Bungalow, National Institute of Design  
(NID Campus), Paldi, Ahmedabad

Prof. Puneet Tandon  
Professor  
(PDPM-IIITDM Jabalpur)

PDPM-IIITDM, Jabalpur, Dumna Airport Road,  
PO: Khamaria, Jabalpur- 482005

Shri Ashok Thakur, IAS  
Additional Secretary

C Wing, Shastri Bhawan, MHRD, New Delhi

**The Finance Committee**

**Name of Member and Designation**

**Official Address**

Shri. A.K Singh, Retd. IAS  
(Chairman, Finance Committee)

Member, Public Enterprises Selection Board, Public  
Enterprise Bhavan, CGO Complex, New Delhi- 110003

Prof. Manoj Harbola  
Professor

Dept of Physics, IIT Kanpur

Mr. Anurag Jain  
Secretary to CM & IT Department, IAS

Room No-533, Mantralaya. Vallabh Bhawan, Bhopal

Prof. Aparajita Ojha  
Director

PDPM- IIITDM Jabalpur, Dumna Airport Road,  
PO: Khamaria, Jabalpur- 482005

Mr. Sanat Kumar Ray  
Additional Secretary & Financial Advisor

C' Wing, Shastri Bhawan, 1st Floor, New Delhi

Mr. Ashok Thakur,  
Additional Secretary, IAS

C Wing, Shastri Bhawan, MHRD, New Delhi

Shri R.P. Dwivedi  
Deputy Registrar  
(PDPM-IIITDM Jabalpur)  
Acting Secretary

PDPM-IIITDM, Jabalpur, Dumna Airport Road,  
PO: Khamaria, Jabalpur- 482005



## The Building & Works Committee

Term of the first Building and Works Committee of the Institute was completed. The newly constituted Building and Works Committee is as follows.

<b>Name of Member and Designation</b>	<b>Official Address</b>
Prof. Aparajita Ojha Director	PDPM- IIITDM Jabalpur, Dumna Airport Road, PO: Khamaria, Jabalpur- 482005
Dr. C.T. Mahajan (Nominated by Central Govt.) Additional Apprenticeship Adviser (AAA)	MHRD 'C' Wing, Shastri Bhawan, New Delhi 110001
Prof. Manoj Harbola Professor	Professor, Dept. of Physics, IIT Kanpur
Shri A. Verma Superintending Engineer	CPWD (CZ), Bhopal
Shri Pankaj Kshatriya, Superintending Engineer	MPSEB, Jabalpur
Prof. P. Tandon Dean, Planning & Development	PDPM-IIITDM Jabalpur
Shri R. P. Dwivedi (secretary) Deputy Registrar and Officer in Charge, Estate	PDPM- IIITDM Jabalpur, Dumna Airport Road, PO: Khamaria, Jabalpur- 482005



## The Senate

Term of the members of Senate was over by the end of the academic session 2008-09. Following members are nominated in the re-constituted Senate.

### Chairperson

Prof. Aparajita Ojha, Director, PDPM-IIITDM Jabalpur

### Members from the Institute

1. Professor Puneet Tandon
2. Professor M. Adhikari, Emeritus Fellow
3. Prof. Amit Ray, Emeritus Fellow
4. Dr. Tanuja Sheorey
5. Dr. V. K. Gupta
6. Dr. Pritee Khanna
7. Dr. Subir Singh Lamba
8. Dr. Mukesh Kumar Roy
9. Dr. M. Ravibau
10. Dr. C.S. Sastry\*
11. Dr. Bhupendra Gupta
12. Mr. Ram Shankar

### In the Capacity

- Professor
- Professor
- Professor
- Associate Professor
- Associate Professor
- Associate Professor
- Assistant Professor
- Assistant Professor
- Assistant Professor
- Assistant Professor
- Assistant Professor
- Acting Secretary

\*(Left the Institute in December, 2009)



External Experts (New Members)

S. No.	Name and Address	Designation	Discipline	Research Interests
1	Prof. S.K. Choudhary, Dept. of Mechanical Engineering, IIT Kanpur	Professor	ME	Metal cutting, manufacturing automation, tool wear monitoring
2	Prof. Huzur Saran, Department of CSE, IIT Delhi	Professor	CSE	Wireless Network, Network performance analysis, Algorithms
3	Dr. Uday Khedkar, Dept. of CSE, IIT Bombay	Professor	CSE	Compiler Design and Optimization, Programming languages
4	Prof. Krishna Reddy, IIIT Hyderabad	Professor	CSE	Database Systems, Data mining, web mining, Performance evaluation simulation
5	Prof. P.C. Das	Professor (Retd.)	Mathematics	Wavelet analysis, PDE
6	Prof. R. Chatterji, Dept. of Physics, IIT Delhi	Professor	Physics	Experimental Solid State Physics, Magnetics, Superconductivity(Bulk & Thin Films), Quasicrystalaline Materials
7	Prof. P.K. Jhinge, Principal, JEC, Jabalpur	Professor	ME	Computational Fluid Dynamics
8	Dr. Ashish Dutta, Dept. of Mechanical Engineering, IIT Kanpur	Associate Professor	ME	Robotics, Bio -Robotics, Control Systems, MEMS, Biomechanism and Sensors



External Experts whose term is extended for a period of another three years w.e.f July 20, 2009

S. No.	Name and Address	Designation	Discipline	Research Interests
1.	Prof. H.P. Dikshit, SGGPA, Bhopal	Director General	Mathematics	Computational Mathematics, Computer Aided Geometric Design, Approximation Theory, Spline Theory and Appl., Complex Approximation, Summability Theory
2.	Prof. Vinayak Eswaran, Dept. of ME, IIT Kanpur	Professor	ME	Computational Fluid Mechanics and Heat Transfer
3.	Prof. Phalguni Gupta, Dept. of CSE, IIT Kanpur	Professor and Head CC	CSE	Sequential and Parallel Algorithms, Image Processing
4.	Prof. Manoj Harbola, Dept. of Physics, IIT Kanpur	Professor	Physics	Electronic Structure of Atoms, Molecules and Solids using Density Functional Methods
5.	Prof. B.L. Misra, Dept. of System Sciences, R.D. University, Jabalpur	Professor	Mathematics, Statistics and CSE	Design of Experiments
6.	Prof. Laxman Pandey, Dept. of Physics, R.D. University, Jabalpur	Professor	Physics	NMR
7.	Dr. Sameer Khandekar, Dept. of ME, IIT Kanpur	Associate Professor	ME	Electronics Thermal Management, Two Phase Passive Heat Transfer, Heat Pipes, Pulsating Heat Pipes, Energy Systems



Following faculty and students served as members of various standing committees of Senate.

#### Undergraduate Committee of Senate (UGCS)

- ❖ Dr. Pritee Khanna ( Convener)
- ❖ Dr. V. K. Gupta
- ❖ Mr. Rajib Kumar Jha
- ❖ Mr. Nitin Madhogaria (Student member)
- ❖ Mr. Rohit Mittal (Student member)

#### Postgraduate Committee of Senate (PGCS)

- ❖ Dr. Pritee Khanna ( Convener)
- ❖ Dr. Prasant Kumar Jain
- ❖ Dr. Dinesh Kumar Vishwakarma
- ❖ Mr. Mayank Shakya ( Student member M Tech /Mdes )
- ❖ Mr. Md. Razik Khan (Student member Ph. D)

#### Students Prizes and Awards Committee of Senate (SPACS)

- ❖ Dr. Mukesh Kumar Roy (Convener)
- ❖ Dr. Sunil Agrawal
- ❖ Dr. Tanuja Sheorey

#### Students Advisory Committee of Senate (SACS)

- ❖ Dr. Bhupendra Gupta (Convener)
- ❖ Prof. Amit Ray
- ❖ Dr. P K Jain
- ❖ Dr. Lokendra Balyan
- ❖ Dr. M. Ravibabu
- ❖ Dr. Anil Kumar
- ❖ Mr. Anilesh Shrma (Student member)
- ❖ Mr. Suteerth Tripathi (Student member)

#### Library Committee of Senate (LCS)

- ❖ Dr. Tanuja Sheorey (Convener)
- ❖ Prof. Amit Ray
- ❖ Dr. P. Khanna
- ❖ Dr. M. Ravibabu
- ❖ Dr. Mukesh Kumar Roy
- ❖ Dr. Bhupendra Gupta



## Academic Programmes

Keeping in view the current trends in engineering research and industry expectations from educational institutes, the structure of the academic programmes was reviewed in the academic session 2009-10. The basic idea was to make the programme more focused and meaningful in the current scenario. Contents of many courses were also reviewed and updated.



Students in Physics Lab



Student Nitin Sharma during summer internship in Japan

In the session 2009-10, students' intake was also increased to 183 in the undergraduate programme. Details of students enrollment in under-graduate and post graduate programmes is given below.

### B. Tech Programme

#### 2006 Batch

Branch	OP	SC	ST	Total
CSE	21	04	01	26
ECE	22	04	0	26
ME	20	02	0	22

#### 2007 Batch

Branch	OP	SC	ST	Total
CSE	21	04	0	25
ECE	21	04	01	26
ME	20	03	01	24



### 2008 Batch

Branch	OP	OBC	SC	ST	Total
CSE	34	04	08	03	49
ECE	34	04	07	04	49
ME	27	05	06	03	41

### 2009 Batch

Branch	OP	OBC	SC	ST	Total
CSE	19	02	06	04	31
ECE	33	11	09	05	58
ME	33	11	09	05	58

### M. Tech Programme

#### 2008 Batch

Branch	OP	OBC	SC	ST	Total
CSE	02	0	0	0	02
ECE	02	02	0	0	04
ME	0	01	0	0	01
MDes	01	0	02	0	03

#### 2009 Batch

Branch	OP	OBC	SC	ST	Total
CSE	04	02	00	00	06
ECE	02	00	03	00	05
ME	02	02	00	00	04
ME	05	01	01	00	07





**Ph. D. Programme**

**2007 Batch**

Branch	OP	SC	ST	Total
CSE	0	0	0	0
ECE	0	0	0	0
ME	01	0	0	01

**2008 Batch**

Branch	OP	SC	ST	Total
CSE	01	0	0	01
ECE	01	0	0	01
ME	01	0	0	01

**2009 Batch**

Branch	OP	SC	ST	Total
CSE	01	00	00	01
ECE	01	00	00	01
ME	01	00	00	01

**Academic Performance Evaluation Committee Report Semester I (2009-10) UG.**

Branch	No. of Students passed	No. of Students retained	No. of Students Terminated	Total No. of Students
2006	73	01	00	74
2007	73	02	00	75
2008	121	18	00	139
2009	138	09	00	147



Academic Performance Evaluation Committee Report Semester I (2009-10) PG.

Branch	No. of Students passed	No. of Students retained	No. of Students Terminated	Total No. of Students
2007	01	00	00	01
2008	13	00	00	13
2009	25	00	02	27



*Dr. Roy in a class room*



*Students in Mechanical Drives and Devices Lab*



## Research and Development

Year 2009-10 was very successful in terms of research and development. Following research projects were approved by the Department of Science and Technology.

- ❖ Constrained Curve Drawing Algorithms for Robot Motion Planning, Principal Investigator - Prof. Aparajita Ojha, Co Investigator - Dr. Tanuja Sheorey.
- ❖ Compressed Sensing for the Analysis, Classification and Reconstruction of Tomographic images under FAST-TRACK scheme of DST. Principal Investigator - Dr. C.S. Sastry.

In addition, following major projects were submitted to funding agencies.

1. PI: Prof. Puneet Tandon

Title of project : Development of a micro pump with NEMS sensing function for an automatic blood collecting and measurement system, submitted to DST and JSPS, Project Duration : 3 years

Co-investigators: Professor Shinichi Warisawa (University of Tokyo, Japan), Dr.V.K. Gupta and Dr. T Sheorey

2. PI: Prof. Puneet Tandon

Design and Development of a Novel Setup for Dieless Free-form Fabrication of Sheet Metal Components, submitted to Aeronautical Research & Development Board (ARDB), Duration:3 years.

3. PI: Dr. Pritee Khanna

Project Title: Gender and Expression Recognition: A Biometric System using Faces submitted to DST, Duration: 3 years

Further, Dr. Asutosh Srivastava, also worked as Co-Investigator (team member) from Indian side in an International collaborative Research Project titled "Nano-Scale MOSFET's-Scalability Issues and Potential Dielectrics" (Indo-Japan /DST-JSPS project -DST/INT/JAIP-50/08). PI- Prof. Hiroshi Iwai from Tokyo Institute of Technology, Japan.

Apart from this, three consultancy projects were also taken up by Prof. Amit Ray, Dr. Tanuja Sheorey and Dr. Sunil Agrawal of the Institute. Dr. Tanuja Sheorey has also been coordinating a project for implementation of Virtual Lab with Prof. Puneet Tandon and Dr. V.K.Gupta to contribute in the National Mission on Education through ICT. Two lab experiments on Manufacturing and Mechatronics will be developed under the project.

Research labs were created in the areas of interest of the faculty in all three branches. Some of the major equipment procured/installed for creation of advanced labs are cluster computers, server for biometric labs, high end systems for digital signal processing, CNC machines, injection molding machine, rapid prototyping machine, abrasive water jet machine, ECM, Infra red camera, Scanning Electron Microscope, XRD and AFM.



Faculty of PDPM-IIITDM-Jabalpur participated in many conferences/ workshops in India and abroad and presented their research contributions. This year, there has been a substantial increase in number of research publications by the faculty and students of the Institute and it is satisfying to note that many of the results were published in quality journals.

14 faculty members represented the Institute in various international conferences and presented papers / gave contributed or invited talks. Moreover 4 students also participated in various national/international level conferences and presented papers.

### Details of Conferences/Workshops Attended By the Faculty and Research Staff (2009-10)

1. Soundra Pandian K.K and Mayank Shakya., "Low Power Testing of CMOS Circuits: A Review", proc. of National Conference on Signal Processing Communication and VLSI Design NCSCV'09: May 8th -9th, 2009 Vol 106, 2009. (Presented by Mayank Shakya).
2. Tandon Puneet, Johry Aakash & Rathore Harsh, "Development of a System for Rapid Prototyping of Heterogeneous Objects", National Conference on Rapid Prototyping and Manufacturing, R.V. College of Engineering, Bangalore, India, May 12-13. 2009, Endorsed by Rapid Prototyping Society of India (RPSI). (Presented by Harsh Rathore).
3. Dr. Subir Singh Lamba gave an invited talk on "Domain Decomposition Method for Hyperbolic Problems" in a mini-symposium in International Conference on Spectral and High Order Methods (ICOSAHOM' 09) June 22-26, 2009, Trondheim, Norway.
4. Professor Amit Ray visited TU Darmstadt, Institute of Ergonomics during June 29 to July 10, 2009 and attended a symposium on "Complexity in Design". He presented a paper on "Cognition, Affect and Emotions in Design" in the Symposium.
5. Dr. Ravibabu Mulaveesala, Mr. Nataraj Jonnalagadda, Mr. Ghali Venkata Subbarao, and Dr. Vijay Kumar Gupta presented research work entitled "Advances in Frequency Modulated thermal Wave Imaging for Non- Contact Subsurface Sensing", IPROMM 2009, 10th -11th July, 2009. Dr. Ravibabu presented the above paper.
6. M. Amarnath, "Application of Empirical Mode Decomposition Method for Detection of Spur gear Faults", IPROMM-2009, IIITDM Kancheepuram, Tamilnadu, India, 11th July 2009. (Presented by M. Amarnath).
7. Dr. Tanuja Sheorey presented a paper on "Design & Development of Feedback Control Hydraulic Airbreak Actuators for a High performance Aircraft" in the Second IFAC International Conference on Intelligent Control Systems and Signal Processing (ICONS-2009), held during 20-23 September 2009 in Istanbul, Turkey.
8. Dr. Subir Singh Lamba gave an invited talk on "Pulsating spectral element method for hyperbolic problems in 2-d" in Indo-German Conference held during 7-9 October 2009 at IIT Kanpur.
9. Dr. Lokendra Kumar Balyan gave an invited talk on "The h/p Spectral Element Method for Elliptic Eigen value Problems on Nonsmooth Domains" in Indo-German Conference held during 7-9 October 2009 at IIT Kanpur.



10. Dr. C.S. Sastry presented a paper on "Detection of edges in CT images directly from projection data", in ACEEE-ART Com held during 27-28 October 2009 at Kottayam, Kerala.
11. Mr. K.K. Soundra Pandian presented a paper entitled "A Power Reduction Technique for BIST Using Modified LFSR" in the international conference on Electrical & Communication Engineering" held in October 28-30, 2009 in Venice, Italy.
12. SoundraPandian K.K and Mayank Shakya., "A Power Reduction Technique for BIST Using Modified LFSR", proc. of International Conference use either the form 28-29th October, on Electronics & Communication Engineering ICECE'09: Venice, Italy, Vol.58, pp. 1097-1100, 28th-30th October 2009 ISSN 2070-3724. (Presented by K.K. Soundra Pandian).
13. SoundraPandian K.K and Mayank Shakya., "A Power Efficient Linear Feed Back Shift Register for Built-In Self Testing", proc. of Fourth IEEE International Conference on Industrial and Information Systems ICIS'09: 28th -31st December, 2009, Peradeniya, Sri Lanka. (Presented by K.K. Soundra Pandian).
14. Sonawane Y. R., Khandekar S., Mishra B. K., Soundra Pandian K. K., Environment Monitoring and Control of a Polyhouse Farm through Internet, 23rd National Convention of Agriculture Engineers and National Seminar on Agricultural Mechanization through Entrepreneurial Development, Rahuri, Ahmednagar, February 6-7, 2010 (Presented by K.K. Soundra Pandian).
15. M. Amarnath, B. Raghu Naik B Aditya Kumar Singh and Ch. Dinesh Joshi "A power spectral density based approach for detection of post-ictal heart oscillations with partial epilepsy", Proceedings of ICCAE - Feb. 26-28, 2010 Singapore, Vol.3, pp. 291 -295. (Presented by M. Amarnath).
16. Dr. Asutosh Srivastava presented a paper "Study of hafnium oxide nano - scale film deposited using focus as a sate dielectric foramos device" in the International Conference on Plasma-Nanotechnology & Science. March 11-12, 2010, Nagoya, Japan.
17. SoundraPandian K.K and Priyanka Mathur., - "Traversability Assessment of Terrain for Autonomous Robot Navigation", proc. of International MultiConference of Engineers and Computer Scientists 2010" IMECS 2010, Hong Kong, 17-19 March, 2010, Vol II, pp. 1286-1289, ISSN 2078-0958, 2078-0966. (Presented by K.K. Soundra Pandian).
18. B. Kuldeep, A.Kumar, Rajesh K. Pandey, "An Efficient Constrained Optimization Method for Designing Two-Channel Quadrature Mirro Filter Banks" accepted for presentation in ICM-2010.
19. Koushlendra K. Singh, Rajesh K Pandey and Anil Kumar, Numerical Inversion of Laplace Transforms Using Wavelets," accepted for presentation in ICM-2010.
20. Gautam Dutta and Jagdeep. B. Doshi, "Development of a Nonlinear Thermal- hydraulic Model to Analyze Parallel Channel Instability of a Boiling Water Reactor Core Undergoing In-charge and out-of-phase Modes of Oscillations," 20th National and 9th International ISHMT-ASME Heat and Mass Trasfer Conference. Mumbai, India 2010. (Presented by Goutam Dutta in January 2010
21. Prashant K. Jain, Pulak M. Pandey, P.V.M. Rao (2010) "Tailoring Material Properties in Layered Manufacturing," accepted for publication in "The 2009 International Conference of Manufacturing Engineering and Engineering Management," to be held at Landon, UK, June 29 to July 2, 2010.



22. P K Padhy, Takeshi Sasaki, Sousuke Nakamura and Hideki Hashimoto, Modeling and Position Control of Mobile Robot, International workshop on motion control (AMC 2010), Nagaoka, Japan, Mar 2010.

### Research Publications in National/International Journals by the Faculty and Research Staff (2009-10)

1. *Gulati, Vishal Singh, Hari & Tandon, Puneet*, "Integrative Modeling to Produce Ornamental Products", Computer Aided Design & Applications, 2009, Vol. 6, No. 1, pp. 27-42.
2. *Tandon, Puneet, Awasthi, Arpit, Mishra, Bipin Kr, Rathore, Pragam & Shukla Ram Krishan*, "Design and Simulation of an Intelligent Bicycle Transmission System", IEEE/ASME Transactions on Mechatronics, 2010, Vol. PP, Issue: 99, pp. 1-9. ISSN: 1083-4435.
3. *Gulati, Vishal, Tandon, Puneet & Kamaldeep*, "Parameterized Modeling of Blow-Moulds for Designer PET Bottles", Computer Aided Design & Applications, 2010, Vol. 7, No. 4, pp. 479-487.
4. *Gulati, Vishal & Tandon, Puneet*, "A CAD Paradigm to Produce Blow Moulds for Decorated PET Bottles", International Journal on Computer Applications, 2010, Vol. 1, No. 5, pp.99-102.
5. *Goel, Vineet, Garg, T.K. & Tandon, Puneet*, "A Frame Work of Smart CAD System for Primitive Jewelry Design" Int JI of Computer Science Issues, 2010, Vol. 7, Issue 2, No.5, pp.31-36.
6. *Bansal, Rajesh, Kumar, P. & Tandon, Puneet*, "Imprinting 3D Geometric Models" Int JI of Computer Science Issues, 2010, Volume 7, Issue 2, No.2, pp.39-48.
7. *Gupta, Vikas, Kasana, K.S. & Tandon, Puneet*, "Computer-Aided Design Modeling for Heterogeneous Objects" Int JI of Computer Science Issues, 2010, Volume 7, Issue 2, No. 5, 2010, pp.37-44.
8. *R.K. Pandey, O.P. Singh, V.K. Singh*, Numerical Solution of system of Volterra integral equations using Bernstein polynomial, International Journal of Nonlinear Sciences and Numerical Simulation, accepted (Impact Factor 8.4) .
9. *O.P. Singh, V.K. Singh, R.K. Pandey*, New stable numerical of Abel's integral equation using almost Bernstein operational matrix, Journal of Quantitative Spectroscopy and Radiative Transfer, accepted (Impact Factor 1.9720).
10. *V.K. Singh, R.K. Pandey, S. Singh*, A Efficient Algorithm for Hankel transform using hybrid Block pulse and Legendre polynomials, Computer Physics Communications, accepted (Impact Factor 1.842 as of 2007).
11. *R.K. Pandey, O.P. Singh, V.K. Singh*, Numerical evaluation of Hankel transforms using wavelet, Numerical Algorithms, In press (Impact Factor 0.527).
12. *Bhupendra Gupta*, Vertex Degree of Random Geometric Graph on Exponentially Distributed Points. Statistics & Probability Letters, 2009, Vol. 79, Issue 19, pp.2020-2027.
13. *A.K. Kundu, V. Pralong, B. Raveau & V. Caignaert*, Magnetic & Electrical Properties of Ordered 112-type Perovskite LnBa CoMn Ostg (Ln= Nd, Eu); Submitted to J. Physics, Condensed Matter (2010).
14. *Ashutosh Pandey, M K Roy, Anjana Pandey, Wolfgang J Parak, Macro Zanella and H C Verma*, Chloroform- and water-soluble sol-gel derived Eu<sup>+++</sup>/Y<sub>2</sub>O<sub>3</sub> (red) and Tb<sup>+++</sup>/Y<sub>2</sub>O<sub>3</sub> (green) nanophosphors: synthesis, characterization and surface modification, IEEE Transactions on Nanobioscience, 2009, Vol. 8, 43 .



15. V.K. Singh, O.P. Singh, R.K. Pandey, Almost Bernstein Operational Matrix method for Solving Systems of Volterra Integral Equations of Convolution Type, Non Linear Science Letters A, 2010, Vol. 1 (2), pp. 201-206.
16. O.P. Singh, V.K. Singh, R.K. Pandey, An efficient and stable algorithm for numerical evaluation of Hankel transforms, Journal of Applied Mathematics & Informatics, accepted.
17. R.K. Pandey, V.K. Singh, O.P. Singh, A New Stable Algorithm for Hankel transform using Chebyshev Wavelets, Commutations in Computational Physics, 2010, Vol. 8 (2), pp. 351-373 (Impact Factor 2.33).
18. R.K. Pandey, V.K. Singh, S. Singh, New Stable Algorithm for Hankel transform using hybrid of Block pulse and Rationalized Haar Functions, Integral Transform & Special Functions, Accepted.
19. M. Amarnath, C. Sujatha and S. Swarnamani, "Detection and Diagnosis of Gear Tooth Wear Through Metallurgical and Oil Analysis", Tribology online, accepted .
20. Siva Rao, M.Amarnath, M.S.Rizal, A.Kamely, "An Investigation Toward Development Of Economical Brake Lining Wear Alert System", International Journal of Engineering & Technology, 2009, Vol. 9(9), pp. 251-256.
21. A. Kumar, G. K. Singh, and R. S. Anand, "A Closed Form Design Method for the Two Channel Quadrature Mirror Filter Banks," Signal Image and Video Processing, In press. 22. A. Kumar, G. K. Singh, and R. S. Anand, "An Improved Method for Designing Quadrature Mirror filter Banks via Unconstrained Optimization", Journal of Mathematics Modeling and Algorithms, 2010, Vol. 9, No. 1, pp. 99-111.
23. A. Kumar, G. K. Singh, and R. S. Anand, "A simple Method for Designing Quadrature Mirror filter Banks via Quadratic constrained Optimization", International Journal of Mathematics Modeling and Numerical Optimization, To appear in Vol. 1, No. 4, In press.
24. A. Kumar, G. K. Singh, and R. S. Anand, "Design of Quadrature Mirror Filter Bank using Particle Swarm optimization", International Journal of Recent Trends in Engineering, 2009, Vol. 1, No. 3, pp. 213-217.
25. A. Kumar, G. K. Singh, and R. S. Anand, "Design of Quadrature Mirror Filter Bank using Constrained Optimization", Int. J. of Signal and Imaging Systems Engineering In press.
26. Padhy, P.K. and Majhi, S., Improved automatic tuning of PID controller for stable processes, ISA Transactions, vol 48, issue 4, pp 423-427, October 2009.

### Books Published by the Faculty of IIITDM Jabalpur (2009-10)

1. Pritee Khanna, "Geometric Modelling of Statically and Dynamically Symmetric Patterns: Theory, Generation and Applications" Publishers VDM Publishing House Ltd., VDM Verlag Germany.
2. A.K. Kundu & B. Raveau, Structural, Magnetic and Electron Transport properties of Ordered-Disordered perovskite Cobaltites, perovskite Oxides: Nova publication (US) (In Press, 2009).

### Patent

Majhi, S. and Padhy P.K. : Relay and Adaptive Filter Based On-Line Tuning of PIPD Controller, Issue No. 9/2009, The Patent Office Journal, India.



## The IIIT DM Jabalpur - Japan Collaboration

The IIIT DM Jabalpur - Japan collaboration is an aspect of a wider partnership envisaged between Japan and India. The Institute is being developed and nurtured under India - Japan partnership as a unique Institute of its kind with focus on IT enabled design and manufacturing. Under a joint agreement between the two Governments, Japan, a leader in cutting edge manufacturing technologies is committed to provide support for development of the teaching and research programme and the infrastructure of the Institute.

For effective implementation of this collaboration, Government of Japan has formed a consortium of six universities and six industries which include:

### Among Universities:

1. University of Tokyo
2. Tokyo Institute of Technology
3. Tohoku University
4. Kyushu University
5. Shibaura Institute of Technology
6. Kanagawa Institute of Technology

### Among Industries:

1. Hitachi
2. Toshiba
3. Amada
4. Okuma
5. Sumitomo Metals and
6. GE Energy

Third consortium meeting of Japanese companies and universities was held on July 28, 2009 in Tokyo on the initiation of Govt. of Japan to review the progress and to discuss on future aspects of collaboration. Prof. Aparajita Ojha and Prof. Puneet Tandon were invited by the Govt. of Japan to deliberate on different aspects of relationships. Some of the issues that were raised by Professor Ojha during her visit to Japan were the following.

- (1) Research collaboration needs to be initiated. This can be achieved if interaction between the Institute's faculty and Japanese experts is for a longer duration, so that possible areas of common interest and the lab facilities could be explored at both the ends.
- (2) For strengthening the ties, students should be encouraged for higher studies in Japan. However, the time duration of admission process in Japanese universities is such that Indian students have to lose at least 8-months in waiting, which is quite a significant period and Indian students cannot afford to lose that immediately after their graduation.





- (3) Most of the University websites do not have enough information in English. As a result a graduate student prefers to take admission in Europe / USA / Australia.
- (4) Number of student internships be increased. That will provide a channel through which students can have the experience of working culture in Japanese companies. This will also help attract good students join manufacturing industries / R & D centres of Japanese companies in India.
- (5) As per the advice of Prof. Ito, one of the three coordinators of IIIT-Japan collaboration, faculty and experts from Japan may act as mentors of some selected post graduate students of the Institute. This will play a key role in strengthening the research collaboration between the two sides.

Representatives of Govt. of Japan took note of the issues and assured to consider the above issues for possible implementation.

### Faculty Visit to Japan

In response to (1), Govt. of Japan sponsored visits of five faculty members of the Institute for initiating research collaboration. The duration of visits was approximately a month. This helped to a great extent in beginning a dialogue between Institute faculty and the researchers in Japan. Some of the faculty also started working on preparation of joint projects. Faculty members who visited Japan in the month of December, 2009 under this programme were - Dr. Subir S Lamba, Dr. M. Ravibabu, Dr. Bhupendra Gupta, Dr. Sunil Agarwal and Dr. M. Amarnath.

In addition to initiatives from Govt. of Japan, Dr. Prabin K. Padhy and Dr. Mukesh Kumar Roy also visited Japan for six and two months respectively for research collaboration with Prof. Suzuki of University of Tokyo and Prof. Yang of Tokyo Metropolitan University. Visit of Dr. Padhy was sponsored by DST, Govt. of India (BOYSCAST) and that of Dr. Roy was sponsored under JSPS programme of Japan.

### Support in Our Teaching Programme

Japanese experts continued to extend their help and support in the teaching programme of the Institute in the year 2009-10. Following experts from universities and industries visited the Institute and delivered lectures for the courses shown against their names.

#### Duration: September - October 2009 (Session 2009-10, Semester I)

1. Professor Takashi Matsumura (Tokyo Denki University)
2. Professor Tsunemoto Kuriyagawa (Tohoku University)
3. Professor Yoshio SAITO (Tokyo Institute of Technology)
4. Dr. -Eng. Masao NAKAGAWA (Technology Division, R & D Department, Okuma Co.)
5. Professor M. Nishizawa (Tohoku University)

#### Duration: January - April 2010 (Session 2009-10, Semester II)

1. Professor Shinichi Warisawa, (University of Tokyo) - "Computer Integrated Manufacturing"
2. Dr. Hitoshi Hibi (Denso Japan) - "Computer Integrated Manufacturing"
3. Professor Takashi Nanya, (University of Tokyo) "Dependable Computing"



4. Professor Hiroshi Yamaura (Tokyo Institute of Technology, Tokyo) "Mechatronics and Robotics"
5. Professor Msafumi Okada (Tokyo Institute of Technology Tokyo) "Mechatronics and Robotics"
6. Dr. Azman Osman Lim (Associate Professor, Japan Advanced Institute of Science and Technology) "Mobile Computing"
7. Professor Tetsunari Inamura (Tokyo Institute of Technology, Tokyo) "Mechatronics and Robotics"
8. Professor Kenichi Miura (Professor, National Institute of Informatics), "Parallel Architecture"
9. Professor Nobuyuki Iwatsuki (Tokyo Institute of Technology Tokyo) "Mechatronics and Robotics"
10. Professor Hashimoto (Professor, University of Tokyo)

### Japan Visit of Students

The students of the Institute visited Japan on exposure visits as well as on summer internships for a duration of one month to two months. Five students in June 2009 visited Japan for short durations under JENESYS programme. Their visit was fully supported by Japan Government. This exposure visit of students helped them understand the education and training system of Japan. The industry people also explained the students the process of getting summer internships in some of the leading industrial labs. They also got an exposure to opportunities of higher education in Japan.

Four undergraduate students of batch 2005-09 were offered admissions in Masters program of various universities. Further, another set of seven students did their internship in leading companies of Japan during the summers of 2009. The organizations that offered the internships to the students were Toshiba, Hitachi, Amada, Sumitomo Metals Industries and Nakata Manufacturing Company.

### Advanced Machineries and Equipment

Government of Japan is also promoting companies to help us create state of the art laboratories by gifting some of the most sophisticated equipment and manufacturing machines to the Institute.

Okuma Industry, Japan donated one CNC Lathe Machine LCS 250 with cutting feed range of 0.0001 to 106 micrometer with 1 micrometer precision and a Vertical Machining Centre MB -46 VA (VAE) with spindle speed upto 35,000 to the Institute. These are state of the art machines for manufacturing processes.

Machines have been received and installed in the Institute. We expect to have more such help in future.

### Support to the Post Graduate Programme

To promote the post graduate programme of the Institute and research, it has been proposed to have **Japanese professors/experts as mentors** for post graduate students in their research programme leading to their thesis work. Through this concept, the students will get opportunities to visit and work in state of the art research labs of Japan. This will also serve as the first step towards collaboration in research.



## Infrastructure Development

### Campus Development

Institute has shifted to its own campus in the academic session 2009-10 at Dumna Airport Road, Jabalpur. Construction of two buildings of the Institute, namely (i) Core Lab Complex and (ii) the Service Block has been completed, and the Institute has started functioning from its own campus from the academic session 2009-10. While Hall of Residence - I is still under progress, work for another Triple Seated Hall of Residence has been started. Two more buildings namely (i) Lecture Hall and Tutorial Complex and (ii) Mess and Dining Hall have been approved by the Board for Governors for construction. CPWD has been entrusted the task of construction of these buildings. The construction is likely to begin very soon.

In the memory of the former Director of the Institute, the Core Lab Complex was named after him as "Sanjeev Bhargava Core Lab Complex".



*Core Lab Complex, Inside*



*Core Lab Complex*



*Hall of Residence 1*



## Infrastructure Development

### Existing Buildings Facilities :-

The Institute shifted to its own campus being developed in 250 acres of land near Dumna Airport, Mehgawa Village Jabalpur. The following buildings/ services/ facilities were completed (or nearing completion) and were taken into use during the year 2009-10.

1. **Dr. Sanjeev Bhargava Core Lab Complex:** This building is basically meant for Corel labs facilities for the students. As construction of Lecture Hall and Tutorial Complex is under progress, the building is presently being used for all academic purposes such as class rooms, library, labs, faculty and offices.
2. **Hall of Residence 1:** This is Single Seated Hostel building having capacity of accommodation for 408 students. Out of total 6 blocks and a service block, 3 blocks and the service blocks have been completed and students have been shifted to these blocks.
3. **Triple Seated Hall of Residence 3:** The building is a triple seated hostel building having total 10 blocks including one number service block. The construction of the building is under progress and is expected to be completed by the end of 2010.
4. **Service Block:** This building is an electrical substation building for 33/11 HT electricity supply line to the Institute. The building is equipped with automatic electrical control system for electrical supply to different buildings in the Institute premises.
5. **Electrical supply:** Initially, the Institute had electric supply through temporary electric connection of 11 KV. The work for 33 KV supply on 1500 KVA load was partly completed in the year 2009-10 to become functional from one feeder of MPSEB. The electricity demand of the Institute for next 10 years is expected to be met by this much of electricity supply.
6. **Diesel Generator for Uninterrupted power supply:** Two diesel generators one of 45 KVA and another of 250 KVA have been installed in the Institute premises to cater to the electricity demand during electric supply failure.
7. **Water Supply:** Presently, three borewells have been provided at the campus for water supply to the existing buildings by electrical pumps. Efforts are being made to get the water supply from nearby "Khandari water reservoir". In this connection permission has been granted by Nagar-Nigam Jabalpur to provide supply of drinking water to the Institute from Khandari.
8. **Pathways:** The existing buildings have been well connected through precast concrete block pathways. Construction of permanent road network and street light will start in the year 2010-11.
9. **Security System:** The security agency engaged for security of the campus has been providing security guards, round the clock in 3 shifts each of 8 hours duration.



*Triple Seated Hall of Residence 1 (Under Construction)*

#### **Proposed Buildings /Structures:**

The central public works department (CPWD) has been engaged for all the major construction projects at the Institute premises. The following works have been proposed by the Institute, for which the construction activity shall be started by the CPWD very soon.

1. **Mess and Dinning Hall:** The construction of this building is going to be started by the CPWD very soon. The building shall facilitate the students of Hall of Residence 1 and Triple Seated Hall of Residence.
2. **Lecture Hall & Tutorial Complex:** The building shall be state of art complex, centrally air conditioned and fully automatic building management system.
3. **Narmada Residency II:** It is a residential building having 50 number flats for staff members of the Institute. The construction of the building shall be taken up by the CPWD.
4. **Narmada Residency III:** It is also a residential building having 60 number flats for the faculty members and other senior officers at the Institute.
5. **Security Barracks:** The building is proposed for providing temporary shelters for the complete team of security guards. The construction of this building is going to be started by the CPWD very soon.
6. The works of **Road networks/external electrification, sewerage system** (with sewerage treatment), **storm water drainage system and water supply system** are also going to be started very soon by the CPWD.
7. **Triple Seated Hall of Residence 4 :** The work of another hostel building of 498 capacity shall be assigned to the CPWD in near future.
8. **Visitors' Hostel:** This work shall also be assigned to the CPWD in near future. The building shall provide accommodation for outstation guest/faculty as well as for other guests at the Institute.



## Lab Infrastructure

The Institute now has an excellent lab infrastructure with sophisticated equipment in the course labs as well as advanced research labs of the Institute. Details of the equipment donated by Okuma Company, Japan in the year 2009-10 are as follows.

### OKUMA CNC LATHE

Model: LCS250-R  
With OSP-P20L-R Controller  
And Standard Accessories  
X-axis Travel : 155 mm  
Z-axis Travel : 320 mm  
Speed Range : 75-3000 rpm  
Feed Rate: Rapid Traverse X 20000 mm/min, Z-axis 25000 mm/min  
Cutting Feed Rate: 0.001 - 1000 mm/min

### OKUMA VERTICAL MACHINING CENTER

Model: MB-46VAE  
Travel X: 560 mm  
Y: 460 mm  
Z: 460 mm  
Spindle Speed: 8000 rpm  
Feed Rate: Rapid Traverse X: 40 m/min, Z-axis 32 m/min  
Cutting Feed Rate: 32 m/min  
Other machines that were installed in the year 2009-10 are as follows.

### SEM (Scanning Electron Microscopy)

Make:- FEI1

Model :-Quanta 200

The Quanta<sup>TM</sup> series from FEI is the advanced, flexible solution for current and future diagnostics applications. Featuring three imaging modes - high-vacuum, low-vacuum and ESEM<sup>TM</sup> it accommodates the widest range of samples of any SEM system. It is engineered to provide maximum data - imaging and microanalysis - from all specimens, with or without preparation.

#### Specifications:-

##### Electron optics

- ❖ High-performance thermal emission- SEM column with dual-anode source emission geometry, ?xed objective aperture and through-the-lens differential pumping
- ❖ Filament lifetime >100 hours



### Resolution

- ❖ **High-vacuum:-**
  - 3.0nm at 30kV (SE)
  - 4.0nm at 30kV (BSE)
  - 10nm at 3kV (SE)
- ❖ **Low-vacuum**
  - 3.0nm at 30kV (SE)
  - 4.0nm at 30kV (BSE)
  - <12nm at 3kV (SE)
- ❖ **Extended vacuum mode (ESEM)**
  - 3.0nm at 30kV (SE)
- ❖ **Accelerating voltage: 200V -30kV**
- ❖ **Probe current: up to 2  $\mu$ A - continuously adjustable**

### Detectors

- ❖ Everhardt-Thornley SED
- ❖ Low-vacuum SED (LFD)
- ❖ Gaseous SED (GSED)
- ❖ IR-CCD
- ❖ Solid-state BSED
- ❖ Gaseous BSED

### Chamber vacuum

- ❖ High-vacuum: <6e-4 Pa
- ❖ Low-vacuum: 10 to 130 Pa
- ❖ ESEM-vacuum: 10 to 2600 Pa

### Vacuum system

- ❖ 1x 240 l/s TMP, 1x PVP
- ❖ Patented through-the-lens differential pumping
- ❖ Beam gas path length: 10 or 2 mm

### Chamber

- ❖ 284mm left to right
- ❖ 10mm analytical WD
- ❖ 8 ports
- ❖ EDX take-off angle: 35 °

### 4-axis motorized stage

- ❖ 1Eucentric goniometer stage
- ❖ X,Y =50mm
- ❖ Z =50mm (25mm motorised)



- ❖ T = -15 ° to +75 ° (manual)
- ❖ R = 360 ° continuous
- ❖ Repeatability: 2 μm

#### System control

- ❖ 32-bit graphical user interface with Windows XP, keyboard, optical mouse
- ❖ Image display: 19-inch LCD, SVGA 1280 x 1024
- ❖ Single frame or 4-quadrant image display
- ❖ 4-quadrant live

#### Image processor

- ❖ Up to 4096 x 3536 pixels
- ❖ File type: TIFF (8-or 16-bit), BMP or JPEG

#### Standard utilities

- ❖ Digital video recording (.avi)
- ❖ SW temperature control
- ❖ Image histogram and measurement software

#### Atomic Force Microscopy

##### AFM

##### Model ntegra prima Make NT-MDT

##### Specifications

SFV10NTF- Scanning AFM head, ST007NTF- STM head, ST005NTF- Universal SPM head SC201NTF- Exchangeable Scanner 1X1 mkm, SU045NTF- Heating stage (150C), AU007NTF- measuring insert for contact and semi contact AFM, EFM, KPM, SCM, SCC04NTF - Vacuum Exchangeable mount for SPM heads, SCB14aNTF- Universal base unit, BL222RNTF- PNL workstation in rack, BTC04NTF- Thermo controller, IN00- PCI interface board, CCD040- Videomicroscope, CCBC1- Color CCD Camera, WT001NTF- Toolkits for Ntegra, OB006- Objective10X, AC007NTF- cover, WTSTM1-toolkits for STM.

#### Other Equipment Installed in the Year 2009-10

Apart from the equipment mentioned above, some of the other equipment whose procurement was initiated in the year \*2008-09 were installed in the advanced research labs of the Institute. These include cluster computers, server for biometric labs, high end systems for digital signal processing, CNC machines, injection molding machine, rapid prototyping machine, Infra red camera.





## Library

The Institute library over the years has developed and maintained various library services like automated issue/return and cataloging facility. Further, e-resources and in particular e-books are also available in the library. In the year 2009-10, additional facilities have been created to enhance library services to cater to the need of increased strength of students and faculty. Following tables give the library infrastructure at a glance.

### Books Collection

Sl. No.	Item	Procured in 2009 - 10	Total
1.	Text Books	811	3250
2.	Reference Books	105	3386
3.	Gratis Books	23	23
4.	Encyclopedia (Science & Technology)	0	1 Set
5.	Britannica	0	1 Set
6.	General Reading	143	650
	<b>Total Books</b>		<b>7340</b>

### E Resources

Sl. No.	Item	2009 -10
1.	e-Resources	a) Sciencedirect.com (option I) b) Springer Resources c) ASME Resources d) IEEE Resources e) ACM Resources f) American Institute of Physics g) SIAM h) AMS i) American Physical Society Journals j) AIP journals k) Operations Research l) scopus.com



### News Papers & Periodicals

Sl. No.	Item	2009-10
1.	News Papers	11
2.	Magazines/Periodicals	16

### Library Infrastructure procured during 2009-10

Sl. No.	Item	2009-10
1.	Book Racks (6')	4
2.	Book Racks (3')	14
3.	Book Cases Sliding Door	4
4.	Book Case	0
5.	Periodical Display Rack	2
6.	Property Counter Open Rack	2
7.	Study Chair	45
8.	Modular	3
9.	Server	1
10.	Desktop	4
11.	Wooden CD Box (Capacity 1000)	1



### Computers and Other Facilities in the Library

Sl. No.	Item	2009-10
1.	At a time seating capacity in library	60
2.	Computers for cataloging/Journals and e-resources access in library for user	4
3.	Computers for issue/return and Administration purpose	3
4.	Library Server	1



## Faculty and Staff

Since its inception, the Institute has been very discriminating in selection of some of the most talented faculty available in the country and we are pleased to report that from the initial strength of only two faculty members we now have twenty nine faculty members. The Institute also invited people from other Institutes/ organization as guest faculty to deliver lectures in special topics and/or as a part of course. Present sanctioned strength of faculty and research engineers is 35. Following is a list of faculty, research engineers and their specializations.

### DIRECTOR

#### Name and Designation



Prof Aparajita Ojha  
Director

#### Professional Details

PhD from RDVV Jabalpur, Former Professor at RDVV Jabalpur, former Director of University Institute of Comp. Science and Appl., Director of Library Services, Head of Lib. and Information Sciences at RDVV.

#### Areas of Interest & Specialization

Geometric Modeling, Computer Aided Geometric Design, Finite Elements, Spline Theory, Approximation Theory, Wavelet Analysis, Path Planning, Software Engineering, Object Oriented/ Aspect oriented modelling and design.

### EMERITUS FELLOWS

#### Name and Designation



Prof. M. Adhikari  
Emeritus Fellow

#### Professional Details

PhD from RDVV Jabalpur, Former Professor and Head, Department of English, RDVV Jabalpur.

#### Areas of Interest & Specialization

Post-Colonialism, Feminism, Eco-criticism, New Historicism and Works of W.S. Maugham. R.N. Tagore, Jawaharlal Nehru, Alice Walker, Toni Morrison, Anita Desai, Shobha De, F. Dhondy, Arundhati Roy, Shashi Deshpande, Michael Ondaatje, Khuswant Singh, Amitav Ghosh



### EMERITUS FELLOWS

#### Name and Designation



Prof. Amit Ray  
Emeritus Fellow

#### Professional Details

PhD from The University of Georgia at Athens

#### Areas of Interest & Specialization

Art & Design, Environmental Ethics, Environmental Design, Design and Aesthetics and Product Design and Design Curriculum Development

### PROFESSORS

#### Name and Designation



Dr Puneet Tandon  
Professor

#### Professional Details

PhD from IIT Kanpur, formerly a faculty member at NIT

#### Areas of Interest & Specialization

Geometric Modeling for Design, Engineering & Manufacturing; Conceptual Design, Product Innovation, Design and Development; Mechatronics; Rapid Prototyping & Tooling, Reverse Engineering, NC programming; Tool Design etc.

### ASSOCIATE PROFESSORS

#### Name and Designation



Dr Tanuja Sheorey

#### Professional Details

PhD from IIT Kanpur, formerly a faculty member at Government Engineering College Jabalpur

#### Areas of Interest & Specialization

Algorithm development and numerical analysis, Mathematical modeling of flow through porous media; Domain decomposition and Parallel computation, Exhaust emission control from automobiles.



## ASSOCIATE PROFESSORS

Name and Designation	Professional Details	Areas of Interest & Specialization
	Dr Vijay Kumar Gupta PhD from IIT Bombay, formerly a faculty member at Kota Engineering College	Smart Structures, Machine Design, Finite Element Methods
	Dr Pritee Khanna PhD from Kurukshetra University, formerly a faculty member at Kurukshetra University Kurukshetra	Computer Graphics, Geometric Modeling, Database Management Systems, Biometrics, Data Structures.
	Dr. P. N. Kondekar PhD from IIT Mumbai M. Tech from IISc Bangalore	Electronic Circuit Design, VLSI Design (MOST Level), Device Simulation and Modeling, RF Identification, RF Power Semiconductor and Modeling
	Dr. Atul Gupta PhD from IIT Delhi M. Tech from IIT Roorkee	Software Engineering, Object-oriented Systems, Empirical Software Engineering, Software Testing, Software Engineering Education



### ASSISTANT PROFESSORS

Name and Designation	Professional Details	Areas of Interest & Specialization
	<p>Dr Subir Singh Lamba PhD from IIT Kanpur</p>	<p>Parallel Computing, Computational Fluid Dynamics, Hyperbolic IBVP, Spectral Methods.</p>
	<p>Dr Mukesh Kumar Roy PhD from IIT Kanpur</p>	<p>Formation and characterization of magnetic nano particles; magnetic multilayer; (iii) immiscible magnetic alloys, Low Cost Science Teaching Methodologies</p>
	<p>Dr Prabin Kumar Padhy PhD from IIT Guwahati</p>	<p>Automatic Controller Tuning, Identification and Control of Processes.</p>
	<p>Dr M. Ravibabu PhD from IIT Delhi</p>	<p>Material Analysis by Thermal Wave Imaging; Optical Techniques for Non-destructive Measurements; Ultrasonic Imaging; Radiography; Instrumentation for Non-destructive Measurements</p>
	<p>Dr Chella S. Sastry PhD from IIT Kanpur, Post-Doctoral experience in Canada</p>	<p>Wavelets and Multiresolution Methods, Computerized Tomography in different Data Acquisition Geometries, Information Retrieval, Network Traffic Analysis for Anomaly Detection, Sparsity-Promoting Optimization Techniques, Feature Extraction from Large Image Databases.</p>



### ASSISTANT PROFESSORS

Name and Designation	Professional Details	Areas of Interest & Specialization
 Dr. Bhupendra Gupta	PhD from IIT Kanpur	Random graphs and its applications, Stochastic process, Probability Theory
 Dr. Sunil Agrawal	PhD from IIT Kanpur	Production and Operations Management, Probability and Statistics, Time series analysis and Quality control.
 Dr. M Amarnath	PhD from IIT Madras M. Tech from S J College of Engineering, Mysore	Condition Monitoring and Fault Detection in Rotating Machinery, Acoustics and vibration analysis, Lubricating Oil Tribology, Nondestructive testing.
 Dr. Prashant Kumar Jain	PhD from IIT Delhi ME from RGPV Bhopal	Rapid Prototyping & Tooling, CNC machining, Geometric Modeling, CAD/CAM Integration, Computational geometry, Design automation, Nano Technologies in Manufacturing.
 Dr. Ashish Kumar Kundu	PhD from JNCASE, Deemed University MSc BHU Varanasi	Solid State Physics



Dr. Goutam Dutta

PhD from IIT Bombay  
M. Tech from IIT Bombay

Computational fluid dynamics,  
Heat Transfer, Two phase flow  
instability analysis, Nuclear  
coupled thermal-hydraulic  
instability analysis



Dr. H. Chehhadurai

PhD from IIT Bombay  
M. Tech from IIT Bombay

Computational fluid dynamics,  
Heat Transfer, Two phase flow  
instability analysis, Nuclear  
coupled thermal-hydraulic  
instability analysis



Dr. Ashutosh  
Shrivastava

PhD from ECE Jadavpur,  
CEERI Pilani  
ME from Nanyang  
Technological University  
Singapore

Microelectronics/VLSI, Silicon  
Detectors/ MEMS



Dr. Dinesh Kumar  
Vishwakarma

PhD from IISc Bangalore  
M.S. from IISc., Bangalore

Analytical and FDTD Modeling,  
Antenna Analysis and Design,  
Microwave Engineering, Applied  
Photonics, Fiber Optic  
Communication



Mr. Lokendra Balyan

PhD from IIT Kanpur

Spectral Methods, Parallel  
Algorithms, Partial Differential  
Equations, Numerical Linear  
Algebra





Dr. Rajesh Kumar  
Pandey

PhD from IT BHU Varanasi

Wavelet Analysis; Numerical  
Analysis, Image Processing



Mr. Anil Kumar

PhD from IIT Roorkee  
M. Tech. from IIT Roorkee

Solid State Electronic  
Material (Semiconductor  
Device & Material  
Semiconductor Material &  
Technology Solid State Device  
& Technology)



Mr Rajib Kumar Jha

PhD thesis being submitted  
at IIT Kharagpur

Video indexing, Motion  
detection using optical flow,  
Image watermarking,  
Steagnography, Stochastic  
Resonance for images, Image  
enhancement using Multi-  
Retinex, and newly  
developed high pass filtering  
approach.



Mr. Manish Shrivastava

Pursuing PhD from IIT  
Bombay

Natural Language Processing,  
Artificial Intelligence,  
Graphical Models, Machine  
learning



Dr. D. Satyanarayana

PhD from IIT Guwahati  
M. Tech. Visvesraya  
Technical University

Computer Science &  
Engineering



### VISITING FACULTY

#### Name and Designation

#### Professional Details

#### Areas of Interest & Specialization



Mr. Hari Kumar Voruganti

PhD from IIT Kanpur

Computer Modeling  
Optimization, Introduction to  
robotics, Robot Motion,  
Planning, Engineering  
Mathematics

### RESEARCH ENGINEERS

#### Name and Designation

#### Professional Details

#### Areas of Interest & Specialization



Mr Awadhesh K Singh

Experience in working at  
IIT Kaharagpur  
M.E. from AIT, Thailand

Mechatronics, Design of MEMS  
Devices



Mr Sachin Kumar Jain

Experience of working  
with NTPC  
M. Tech. from IIT Roorkee

Power Electronics



Mr K Soundarpandian

Experience of working at  
IIT Kanpur  
M. Tech. from  
Anna University

Electronics & Communication,  
Instrumentation, Embedded  
Programming, Mechatronics



Mr. B. Mukherajee

M. Tech. from University of  
Delhi  
B. Tech GGSIP, New Delhi

Microwave Electronics



Mr. D. S. Ramteke

M. Tech from IIT Guwahati  
B. Tech from IET DAVV  
Indore

Machine Design, Rotor  
dynamics



Mr. Saket Saurav

B.E. from RGPV, Gwalior

Robotics, Embedded C/C++  
and VB/VB. NET Programming



## Visiting / Guest Faculty (2009-10)

Faculty/experts from institutes in India and Japan contributed in the teaching programme of the Institute in two different ways (i) By offering several Electives in modular form (EMF), which are short courses of 12-14 hours lecture duration (ii) Offering full course (iii) teaching part of a course.

S.No.	Name of External Faculty	Organization	Course No. and Title	Nature of Course
1	Dr. Atul Gupta	UIT, RGPV, Bhopal (before joining the Institute)	CS 413 Design and Validation of Software Systems	Full Course
2	Prof. Naveen Garg	IIT Delhi	EM605a Network Flows and Matchings	EMF
3	Prof. P.K. Biswas	IIT Kharagpur	Computer Vision	EMF
4	Dr. R.N. Yadav	MANIT Bhopal	EM667a Neutral Networks	EMF
5	Prof. Harish Hirani	IIT DELHI	EM661b Innovation Using TRIZ	EMF
6	Dr. Aditya Trivedi	IIIT Gwalior	EM682b Queuing Theory	EMF
7	Dr. Aditya Trivedi	IIIT Gwalior	EM670a Information Theory and Coding	EMF
8	Mr. Ashutosh Pandey	Industry	EM684a Enterprise Resource Planning	EMF
9	Prof. Maya Ingle	DAVV Indore	CS306 Language Theory	Full Course
10	Dr. K.V. Arya	IIIT Gwalior	CS 201 Fundamentals of Computer Systems	Two-Third of full course
11	Prof. A.K. Ramani	DAVV Indore	EM568a Information Technology Project Management	EMF
12	Prof. Shinichi Warisawa	Japan	ME 415 Computer Integrated Manufacturing	Partial
13	Dr. Hitoshi Hibi	Japan	ME 415 Computer Integrated Manufacturing	Partial
14	Prof. Masafumi Okada	Japan	ES312 Mechatronics & Robotics	Partial
15	Prof. Hiroshi Yamaura	Japan	ES312 Mechatronics & Robotics	Partial
16	Prof. Tetsunari Inamura	Japan	ES312 Mechatronics & Robotics	Partial
17	Prof. Nobuyuki Iwatsuki	Japan	ES312 Mechatronics & Robotics	Partial
18	Prof. Hideki Hashimoto	Japan	EM624b Advanced Robotics and intelligent Space	EMF
19	Prof. Takashi Nanya	Japan	EM604b Dependable Computing	EMF
20	Dr. Azman Osman Lim	Japan	EM664c Mobile Computing	EMF
21	Prof. Kenichi Miura	Japan	EM601c Parallel Architecture	EMF
22	Mr. T.V.K Gupta Research Engineer I	IIT Kanpur	MN 303 Fabrication Project	Full Course (Part of 3 Members team)



List of guest faculty, who contributed in the teaching of M. Des. Programme in the Session 2009-2010 is as follows.

S.No	Name of External Faculty	Organization	Course No. and name	Nature of Course
1	Prof. L.K. Das, Emeritus Fellow,	IIT Delhi	Product Design	Full Course
2	Dr. Satyaki Roy Assistant Professor	IIT Kanpur	Visual Production	EMF
3	Dr. Rupesh Vyas Faculty	NID Ahemadabad	Visual Design	EMF
4	Dr. Nachiketa Tiwari Assistant Professor	IIT Kanpur	Design Management	EMF



## Distinguished Lecture Series

The inaugural lecture in 'Raman Distinguished Lecture series' was delivered by Dr. Anil Kakodkar, DAE-Homi Bhabha Chair Professor, BARC and former Chairman Atomic Energy Commission of Govt. of India.



Further, Prof. Manindra Agrawal, a noted computer scientist from the Dept. of Computer Science and Engineering, IIT Kanpur, delivered a special lecture on Topic "NPP Hypothesis" at the Institute on March 23, 2010.



## Students' Life

Institute shifted to its own campus in the academic session 2009-10 at Mehgawan, Dumna Airport Road, Jabalpur. Although partly constructed, 'Hall of Residence-1' is also functional with all facilities at the Institute campus. This hostel accommodates about 300 students. All the students except those in the first year were placed in this hostel. All the students of first year were accommodated in Tropical Forest Research Institute Hostel.

As TFRI hostel is about 20 kilometers away from the institute, suitable transportation arrangements are made for students. The hostels are provided with separate mess facility, common rooms with TV, indoor games, reading room, etc. Figures below show some of the pictures of the hostel life in IIITDM Jabalpur during the year 2009-10.

IIITDM Jabalpur emphasizes on several extra-curricular activities in addition to its rigorous academic activities. The institute has provided badminton court, volley ball courts, table tennis in its hostels and the institute premises.

In 2009-10, students of IIITDM organized the inter institutional cultural festival, Tarang-10, which saw various competitive entries in literary, dramatics and musical activities. Students from other colleges of Jabalpur also actively participated in these competitions. This fest was a remarkable success as always. Similarly, the internal games festival, Gusto-10 was also organized by students. National festivals like Independence Day and Republic Day were organized with great enthusiasm. Students of IIITDM participated in many technical sports and cultural festivals organized by other premier institutes of the country and bagged various trophies and medals.

In Abhikaplan 2009, the annual technical function of the Institute, Mr. Akash Singh and Ms. Sanajana Goyal stood first in paper presentation competition, Mr. Suteerth Tripathi and Mr. Shishir Shrof got 1st position in robotics competition-DouBots and Mr. Arvind Lal and Mr. Ankur Pandey got 2nd position in robotics competition - hurdle race and DuoBots, respectively, Mr. Akash Mishra got a position in Matdesigno. Ms. Neeti Taygi got 1st position in Dumb Charades at Tarang 2009.

An intra Institute cricket tournament was organized in the month of April year at the Institute premises. This intra Institute event was won by 1st year cricket team.

In Inter IIIT sports Fest TWARAN'10, held at AVB-IIITM Gwalior in the month of January 2010, students of the Institute participated in various games and bag various prize/ medals. The details of prize/ medals are listed below:





### **TABLE TENNIS (Gold Medal)**

Rohit Mittal , Shreyas Palsule , Ishaan Kapri, Devesh Chauhan, Narwade Vishal Tejrao

### **LAWN TENNIS (Silver Medal)**

Saurabh Khanna, Shobit Sood, Narwade Vishal Tejrao, Narayan Kumar

### **CRICKET (Silver Medal)**

Mrityunjay Kumar, Vicky Kumar, Avinash Kumar, Devesh Chauhan, Amit Saxena .Yogendra Singh, Somesh Kumar Singh, Chauhan Nitin Durgesh, Kartik Malik, Gaurav Singh, Anuj Choudhary, Ashok Kumar, Saurabh Kumar, Bhartesh Pandey , Rohit Mittal.

### **FOOTBALL (Silver Medal)**

Anilesh Sharma , Ram Anand, Vinod Kumar, Akhil Gairola, Ten Singh, Vipul Sharma, Pradeep Sarangal, Saurabh Kumar, Varun Dhadke, Bala Sundreshan, Gyanendra, Laxmi sagar Majhi, Avinash Kumar, Shobit Sood, Ishan Kapri, Dhruv

### **VOLLEYBALL (Silver Medal)**

Rohit Mittal, Vipul Sharma, Anuj Choudhary, Ashok Kumar, Devesh Chauhan, Vikash, Vishram Meena, Pardeep Sarangal, Bhartesh Pandey

### **ATHLETICS :**

Marathon (5 km) : Vinod Kumar (Gold Medal), Anilesh Kumar (Silver Medal)

### **SPRINT**

a) 1500m : Vinod Kumar (Gold Medal), Vishram Meena (bronze Medal)

b) 400m : Vinod Kumar (Silver Medal)

c) 4x100m Relay (Bronze Medal) : Saurabh Kumar, Anilesh Sharma, Ram Anand, Vishram Meena

d) 4x400m Relay (Silver Medal) : Vinod Kumar, Anilesh Sharma, Saurabh Kumar, Ram Anand

**Girls Table Tennis (Silver Medal) :** Shruti Sharma, Dev Priya, Gauri Dani

**Chess (Silver Medal) :** Varun Dhadke

**LAWN TENNIS Mixed Doubles (1st Prize) :** Saurabh Khanna, Gauri Dani

**National Level Sports Quiz (Gold Medal) :** Bala Sundreshan, Varun Dhadke, Shobit Sood

**Player of the Events:** Shreyas Palsule (Table Tennis), Saurabh Khanna (Lawn Tennis)

### **Students and Japan Collaboration**

This year, seven students were offered internships from Japanese companies in their locations in Japan. The students were selected on the basis of their academic merit. Five more students were invited to visit Japan in the month of June 2009. The visits were fully sponsored by Japan Government. Apart from this students were also offered internship from Indian and multinational companies at their Indian locations.

Year 2009-10 was better in terms of students' placement activities. About 47 students have got placement in various companies and academic institutions. Some more students have opted for higher studies in good Institutes/universities in India or abroad. Institute is making efforts for rest of the students.





## Students Gymkhana

The structure of Students Gymkhana of IIITDM Jabalpur was formalized during 2007-08. The students' governance model at the institute visualized a central representative organization of students having two wings: (1) Executive Wing (2) Student's Senate. Executive wing comprises

- ❖ The President
- ❖ The Science & Technology Secretary
- ❖ The Games & Sports Secretary
- ❖ The Cultural Secretary

The Students' Senate has representatives from each Hall of Residence. The executives of Students' Gymkhana are also members of the Students' Senate. In all, there are 25-30 members of the Students' Senate. Executive Wing of Gymkhana creates its own sports, hobby and Science & Technology clubs.

The proposed Constitution of Students Gymkhana was discussed among (i) Faculty Members of the Institute and (ii) Students in an open and transparent manner. The proposed constitution was taken up for the discussion and adoption in the Academic Senate of the institute in 2008-09. Based on the terms and conditions, as laid down in the proposed constitution, elections for the executive posts of the Students Gymkhana were held for the first time in 2007-08. After that election has been conducted annually in the month of November. The following students were elected for session 2009-10.

- |    |                            |                                |
|----|----------------------------|--------------------------------|
| 1. | Mr. Anilesh Sharma         | President                      |
| 2. | Mr. Suteerth Tripathi      | Science & Technology Secretary |
| 3. | Mr. Devesh Chouhan         | Games & Sports Secretary       |
| 4. | Mr. Ratandeep Singh Bansal | Cultural Secretary             |

Student Gymkhana organizes three annual events- (1) 'Tarang', the cultural festival, (2) 'Abhikalpan', the tech-festival and (3) 'Gusto', the sport festival. Glimpse of events organized during these festivals are shown in the following figures.



*"Tarang 2010" Dance Competition*



*Performance of "JAL BAND" Pakistan*



## Annual Accounts - 2009-10

### FORM OF FINANCIAL STATEMENTS

NAME OF THE ENTITY: Pt. DWARKA PRASAD MISHRA INDIAN INSTITUTE OF INFORMATION TECHNOLOGY,  
DESIGN & MANUFACTURING, JABALPUR

BALANCE SHEET AS AT 31ST MARCH, 2010

SL. NO.	PARTICULARS	SCHEDULES	(Amount - Rs.)	
			CURRENT YEAR (As on 31/03/2010)	PREVIOUS YEAR (As on 31/03/2009)
<b>1</b>	<b>CORPUS/CAPITAL FUND AND LIABILITIES</b>			
1.A	CORPUS/CAPITAL FUND	1	673,394,642	339,465,165
1.B	RESERVE AND SURPLUS	2	0	0
1.C	EARMARKED/ENDOWMENT FUNDS	3	512,055	667,803
1.D	SECURED LOANS AND BORROWINGS	4	0	0
1.E	UNSECURED LOANS AND BORROWINGS	5	0	0
1.F	DEFERRED CREDIT LIABILITIES	6	0	0
1.G	CURRENT LIABILITIES AND PROVISIONS	7	38,870,787	69,861,270
	<b>TOTAL</b>		<b>712,777,484</b>	<b>409,994,238</b>
<b>2</b>	<b>ASSETS</b>			
2.A	FIXED ASSETS	8	482,282,642	318,679,225
2.B	INVESTMENTS - FROM EARMARKED/ ENDOWMENT FUNDS	9	0	0
2.C	INVESTMENTS - OTHERS	10	9,947,074	39,500,000
2.D	CURRENT ASSETS, LOANS, ADVANCES ETC.	11	220,547,768	51,815,013
2.E	MISCELLANEOUS EXPENDITURE (TO THE EXTENT NOT WRITTEN OFF)		0	0
	<b>TOTAL</b>		<b>712,777,484</b>	<b>409,994,238</b>
	SIGNIFICANT ACCOUNTING POLICIES	24		
	CONTINGENT LIABILITIES AND NOTES ON ACCOUNTS	25		

*(Handwritten Signature)*

(R. P. Dwivedi)  
Dy. Registrar (Fin. & Accounts)



FORM OF FINANCIAL STATEMENTS

NAME OF THE ENTITY: Pt. DWARKA PRASAD MISHRA INDIAN INSTITUTE OF INFORMATION TECHNOLOGY,  
DESIGN & MANUFACTURING, JABALPUR

**INCOME & EXPENDITURE ACCOUNT FOR THE PERIOD/YEAR ENDED  
31ST MARCH, 2010**

SL. NO.	PARTICULARS	SCHEDULES	(Amount - Rs.)	
			CURRENT YEAR (As on 31/03/2010)	PREVIOUS YEAR (As on 31/03/2009)
<b>1)</b>	<b>INCOME</b>			
A)	INCOME FROM SALES & SERVICES	12	0	0
B)	GRANTS/SUBSIDIES (UTILISED PART) (OTHER GRANTS)	13	0	0
C)	FEES/SUBSCRIPTIONS	14	12,056,023	9,145,550
D)	INCOME FROM INVESTMENT (Excluding Income from Earmarked/ Endowment Funds transferred to Funds)	15	NIL	0
E)	INCOME FROM ROYALTY/PUBLICATIONS, ETC.	16	0	0
F)	INTEREST EARNED	17	2,915,890	1,156,525
G)	OTHER INCOME	18	691,234	339,093
H)	INCREASE/(DECREASE) IN STOCK OF FINISHED GOODS & WORK-IN-PROGRESS	19	0	0
	<b>TOTAL (A)</b>		<b>15,663,147</b>	<b>10,641,168</b>
<b>2)</b>	<b>EXPENDITURE</b>			
A)	ESTABLISHMENT EXPENSES	20	36,446,155	16,547,817
B)	OTHER ADMINISTRATIVE EXPENSES, ETC.	21	46,133,028	30,282,671
C)	EXPENDITURE ON GRANTS, SUBSIDIES, ETC.	22	0	0
D)	INTEREST PAID	23	0	0
E)	DEPRECIATION (NET TOTAL AT YEAR END)	8	32,724,065	16,806,042
	<b>TOTAL (B)</b>		<b>115,303,248</b>	<b>63,636,530</b>
	<b>BALANCE BEING SURPLUS/(DEFICIT) FOR THE YEAR</b>		<b>(99,640,101)</b>	<b>(52,995,362)</b>
	<b>LESS : PRIOR PERIOD ADJUSTMENTS</b>		<b>(4,811,187)</b>	<b>(25,254,575)</b>
	<b>BALANCE BEING SURPLUS/(DEFICIT) CARRIED TO CORPUS/CAPITAL FUND</b>		<b>(104,451,288)</b>	<b>(78,249,937)</b>

(R. P. Dwivedi)

Dy. Registrar (Fin. & Accounts)



NAME OF THE ENTITY: Pt. DWARKA PRASAD MISHRA INDIAN INSTITUTE OF INFORMATION TECHNOLOGY, DESIGN & MANUFACTURING, JABALPUR  
RECEIPT & PAYMENT ACCOUNT FOR THE FINANCIAL YEAR ENDING 31ST MARCH, 2010

RECEIPTS	(Amount - Rs.)		S. NO.	PAYMENTS	(Amount - Rs.)	
	CURRENT YEAR (As on 31/03/2010)	PREVIOUS YEAR (As on 31/03/2009)			CURRENT YEAR (As on 31/03/2010)	PREVIOUS YEAR (As on 31/03/2009)
<b>I OPENING BALANCES</b>						
a) Bank Balances						
i) Canara Bank Grant Account, Jabalpur	3,407,811	3,354	I	EXPENSES		
ii) SBI Grant Account, GEC Campus, Jabalpur	1,567,328	3,523,410	a)	Establishment	33,991,650	13,856,932
iii) SBI Student Fee A/c, Jabalpur	15,616,343	6,246,351	b)	Administrative Expenses	45,603,582	200,000
iv) SBI Project Account	667,703	213,376	c)	CEED	0	
<b>II GRANTS RECEIVED</b>				PAYMENTS MADE AGAINST FUNDS FOR		
a) From Govt. of India (MHRD) (PLAN)	410,000,000	239,200,000	II	VARIOUS PROJECTS		
b) From Other Sources	0	0	a)	IGNOU Distance Education Programme	1,229,988	1,596,235
NBHM Visiting Professorship	0		b)	Central Sector Scholarship (Receivable)	2,123,388	
(NBHM - International Conference)	1,383,420	762,258	c)	Project (Other Misc. Expenses)	3,353,376	
Central Sector Scholarship (Receivable)	1,979,602	70,630	III	INVESTMENTS AND DEPOSITS MADE		
Projects	0	0	a)	Out of Earmarked/Endowment Funds	0	
From MTA(Student)	413,363,022	70,630	b)	Out of Other Funds (Investment - Others)	20,000,000	73,500,000
<b>III INVESTMENTS AND DEPOSITS MATURED</b>			c)	Out of Other Funds (Investment - Against LC)	0	
a) Fixed Deposit Agist L/c	31,126,926	0	IV	EXPENDITURE ON FIXED ASSETS & CAPITAL		
b) Fixed Deposit Others	54,500,000	38,500,000	a)	WORK-IN PROGRESS		
c) Earmarked/Endow. Funds	85,626,926	0	b)	Purchase of Fixed Assets	46,132,683	2,673,722
<b>IV INTEREST RECEIVED</b>			c)	Expenditure on Capital Work-in Progress	149,606,846	15,560,873
a) On Bank Deposits	279,028	406,624	V)	Equipments in Transit (CWC WARE House	36,576,786	36,889,093
i) On Savings Bank A/c	386,161		a)	REFUND OF SURPLUS MONEY/LOANS		
From Canara Bank	35,851		b)	NBHM - Visiting Professorship/ Fellowship	0	236,667
From SBI	1,4041,136		c)	OTHER PAYMENT		
ii) On Project A/c	626,140		VI	Paid to Sundry Creditors	9,322,228	20,224,758
iii) On Fixed Deposits			a)	a) For Purchase of Equipments/Goods	2,272,755	76,038,043
b) On Contractors			b)	b) For Construction (Capital work in progress)	1,275	
<b>V OTHER INCOMES</b>			c)	c) For Expenses	552,695	
a) Income from Student Fees	9,601,288	7,848,338	e)	- CCB Counsellinh Fee	190,000	
-Regular Income (2009-10)	89,910	54,060	f)	- External Scholarship	73,105	
-Summer Course	620		g)	Security Deposit (Receivable) (MPPKVCL)	414,000	
b) Sale of News Paper/Periodicals	56,000		h)	Payment for Hall Management	4,078,500	
c) Sale of Tenders	104,700	92,500	i)	Student Benefit Account	1,954,650	0
d) Recruitment Form Fees	24,800	189,141	j)	Excess Fee Refund	30,100	577,511
e) Degree/Convocation Fees	19,775		k)	Student fee refund	2,304,732	0
f) Guest house Income	331,818		l)	Tuition Fee Waiver	1,020,000	8,000
g) Project Overhead Income	23,010	07	m)	Mess Advance	6,000	
h) Income from Bus Service	32,166		n)	Caution Money (Refund)	12,000	15,000
i) Library Fine	61,325		o)	Scholarship	51,000	0
j) Admission Form Fees	10,345,412	0	p)	Scholarship NCM	0	465,000
				Mess Dues	27540	1250
				Summer Course Refund	22,753,621	0



RECEIPT & PAYMENT ACCOUNT FOR THE FINANCIAL YEAR ENDING 31ST MARCH, 2010

S. NO.	RECEIPTS	(Amount - Rs.)		S. NO.	PAYMENTS	(Amount - Rs.)	
		CURRENT YEAR (As on 31/03/2010)	PREVIOUS YEAR (As on 31/03/2009)			CURRENT YEAR (As on 31/03/2010)	PREVIOUS YEAR (As on 31/03/2009)
VI	OTHER RECEIPTS			VII	STATUTORY LIABILITIES DEDUCTED AT SOURCE		
a)	Security Deposit From Student	5,000	66,000	a)	Association Fee (Other Institution)	60	0
b)	From Contractors	6,602,529	0	b)	GIS (Other Institutes)	571	4810
c)	Late Registration Fine	31,600	0	c)	GPF (Other Institutes)	32,000	4810
d)	External Scholarship	73,105	0	d)	Professional Tax Paid	122,495	55,653
e)	Prior Period Income	8,474	84,430	e)	WCT Paid	2,930,320	1,856,460
f)	LC amendment charges recovered	23,654	0	f)	1% Labour Welfare Cess	2,254,193	344,920
	Creditors (Cheque Cancelled)	28,580	461,620	g)	TDS Paid	7,319,372	4,393,443
VII	STATUTORY LIABILITIES DEDUCTED AT SOURCE	6,722,942		h)	New Pension Contribution Paid Institutes Share	2,478,130	1,427,194
a)	Association Fee (Other Institution)	60		i)	New Pension Contribution Paid Employee Share	2,454,506	0
b)	GIS (Other institutes)	90		IX	LOANS & ADVANCES		
c)	GPF (Other institutes)	27,000		a)	Advance for Expenses	5,771,810	
d)	Professional Tax Paid	100,568			To Staff	6,000	
e)	WCT Paid	2,734,806		b)	TDS to be recovered	49,070	
f)	1% Labour Welfare Cess	1,367,259			From Staff	7,117	
g)	New Pension Cont. (Employee Share)	2,454,506		c)	Other Advances	162,000,000	
h)	TDS Recovered	7,400,445	14,084,734		To CPWD, Bhopal	188,500	
VIII	AMOUNT BORROWED	0	0		To P.H.E. Mechanical Devison Jabalpur	81,914,852	
IX	OTHER RECEIPTS FEE ACCOUNT			d)	Secured Advances CWIP	27,250,000	277,187,349
a)	Student Caution Money	724,000	804,000	e)	Adhoc Payment		
b)	Student Mess Advance	543,000	492,000	X	CLOSING BALANCES		
c)	Hall Management A/c	2,193,500	1,885,000		Bank Balances	686,839	3,407,811
d)	Student Benefit A/c	946,400	743,100	i)	Canara Bank Grant Account, Jabalpur	9,313,803	1,567,528
e)	MCM Scholarship (Recd. From Student)	0	465,000	ii)	SBI Grant Account, GEC Campus, Jabalpur	6,311,030	15,616,343
f)	Advance Fees Received	2,851,317	2,392,365	iii)	SBI Student Fee A/c, Jabalpur	531,718	667,703
g)	Excess Deposit Fee A/c	2,329,740	622,391	iv)	SBI Project Account	16,578,318	0
h)	Other Miscellaneous Receipt	2,920	190,000	v)	Allahabad Bank Current A/c, Jabalpur	33,421,708	
i)	CCB Counselling Fee	0	28,000				
j)	Liability for Student Benefit Account	0	62,602				
k)	Liability for Student TA	26,433	0				
l)	Recovery of Admin. Exps. from Staff (Tel.)	126,791	43,165				
m)	Student Support Services	0	132,999				
n)	Fees Cheque Return	0	1,250				
o)	Mess Dues	0					
p)	Recovery Staff (Army Welfare Flag Day)	0	9,744,101				
IX	LOANS & ADVANCES						
a)	Secured Advances CWIP	77,696,594	717,381				
b)	Adhoc Payment	32,700,000	45,741				
c)	Mobilization Advances CWIP	6,727,280					
d)	Advance for Expenses	5,161,484					
	From Staff	9,054					
	From Student						
	TOTAL	122,294,412	307,814,022		TOTAL	686,219,250	307,814,022
		686,219,250	307,814,022				

*(Signature)*  
 (R. P. Dwivedi)  
 Dy. Registrar (Fin. & Accounts)



**PDM**  
**INDIAN INSTITUTE OF INFORMATION TECHNOLOGY,**  
**DESIGN & MANUFACTURING JABALPUR**  
**DUMNA AIRPORT ROAD, PO KHAMARIA**  
**JABALPUR 482 005**  
**PHONE : 0761-2632273 : FAX 0761-2632524**  
**WEBSITE : [www.iiitdmj.ac.in](http://www.iiitdmj.ac.in)**