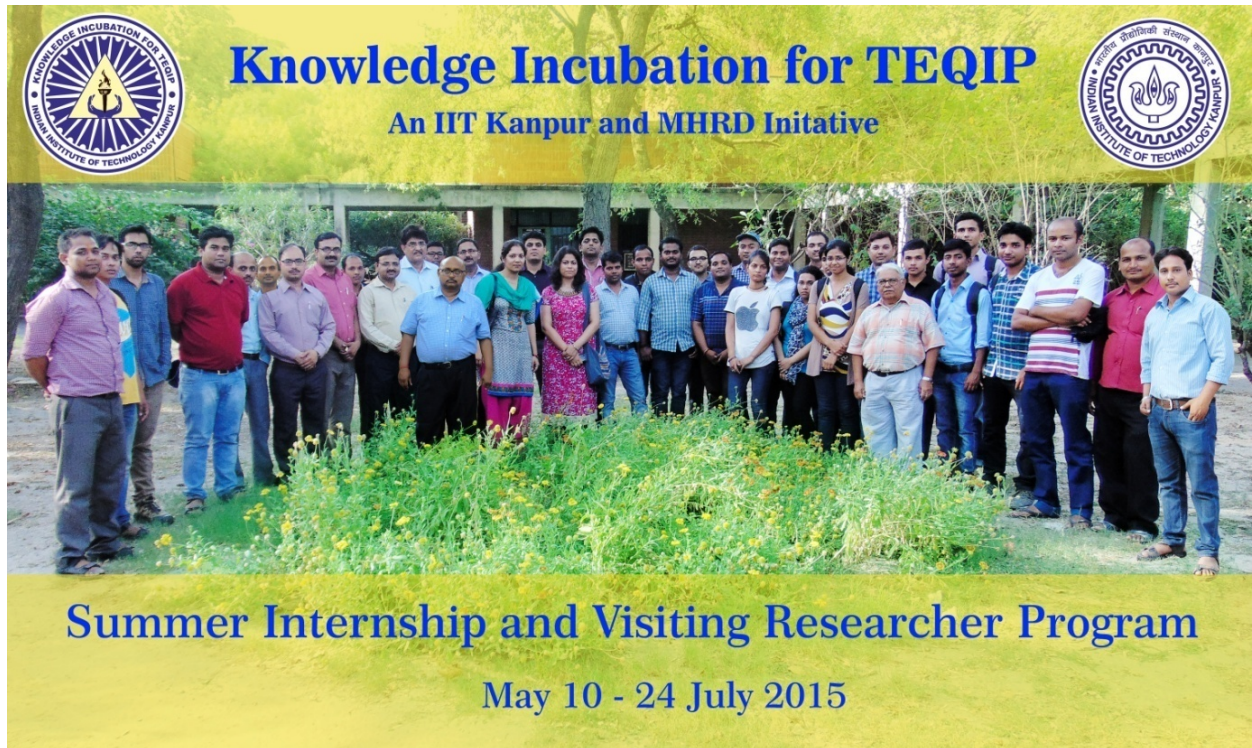




KNOWLEDGE INCUBATION FOR TEQIP, IIT KANPUR

TEQIP Summer Internship and Visiting Researcher Program

2015



In order to encourage research collaborations and student exchange with the colleges in Quality Circle assigned to IIT Kanpur, Knowledge Incubation for TEQIP announced a Summer Internship and Visiting Researcher program for students and faculty members of all TEQIP Institutes under IIT Kanpur quality Circle. Several students and faculty members applied for this program. This year the summer internship and visiting researcher program was offered in all departments at IITK. We received 19 applications of teachers and 90 applications of students from across India for this activity. Out of them 19 teachers and 42 Students were selected from TEQIP institutes all over India. During this program they interacted with established faculties of IITK and did specific work with them. They worked on approved topics given to them by their host faculty at IITK. The Summer Internship part aimed at exposing selected students from QC institutes to the academic culture of IIT Kanpur and help them adopt new methods of learning their subject of interest.

Visiting Researchers

S.No	Name	University	Research topics	Work with	Duration of stay
1	Mr. Avinash Shukla	IFTM University, Moradabad	Experimental modal analysis of 16 ply. Orientation laminated plates	Dr. Shakti Gupta IIT, Kanpur	May 18- July 22, 2015
2	Mr. Prabhakar Bhandari	IFTM University, Moradabad	Brief overview of Computational Fluid Dynamics.	Dr Arvind Kumar IIT, Kanpur	May 18 – July 21, 2015
3	Mr. Deepak Singh Bisht	IFTM University, Moradabad	Introduction to crack analysis and layered composites for different orientation	Dr. N.N.Kishore IIT, Kanpur	May 18 – July 21, 2015
4	Dr. S.K.S. Yadav	HBTI Kanpur	Development of Ultrasonic Assisted Electrical Discharge Diamond Cut-off Grinding (EDDCG) setup	Dr. J.Ramkumar IIT, Kanpur	May 12- July 24, 2015
5	Dr. Vinay Pratap Singh	HBTI Kanpur	Study of Fabrication and Characterisation of HAP Based Bioimplants	Dr. Kantesh Balani, IIT, Kanpur	May 12- July 24, 2015
6	Dr. Deepak Srivastava	HBTI Kanpur	Synthesis and Characterization of phenol/cardanol-based epoxy resins	Dr. Kamal K. Kar IIT, Kanpur	May 12- July 24, 2015
7	Dr. Ashutosh Singh	HBTI Kanpur	Research Topic: Flash Crowd Handling in Peer-to-Peer Live Streaming Multicast	Dr. Y.N Singh IIT, Kanpur	May 12 - July 24, 2015

8	Dr. V.Murari	MNNIT Allahabad	Study of mechanisms of diffuse damage initiation and growth in the unidirectional polymer matrix composites.	Dr. C.S Upadhyay IIT, Kanpur	May 12- 31, 2015
9	Ms. Yashika Arora	UIET Kurukshetra	Evolving Controllers for Mobile Robot Navigation	Dr. Laxmidhar-Behera IIT, Kanpur	May 18- June 25, 2015
10	Mr. JitendraBhaskar	HBTI Kanpur	Dynamics Response of Active SMA Embedded Polymer Composites	Dr.Bishakh Bhattacharya IIT, Kanpur	May 12- July 24, 2015
11	DrAnand Kumar	HBTI Kanpur	Evaluation of Mechanical Properties of Banana fiber + Coconut shell powder epoxy hybrid composites	Dr. Bishkh Bhattacharya IIT, Kanpur	May 12- July 24, 2015
12	Dr. K.K Dubey	UIET, M.D. University Rohtak-Haryana	Conversion of Sucrose into Fructooligosaccharides (FOS) through Ftase	Dr. P.K Bhattacharya IIT, Kanpur	May 18 - July 04, 2015
13	Mr. Krishna Pandey	UIET Kurukshetra University	Study of Wireless Sensor Network	Dr. Y.N Singh IIT, Kanpur	May 12- July 03, 2015
14	Mr. Ashwani K. Dhingra	UIET, M.D. University Rohtak-Haryana	Nano Finishing of free form surfaces using Rotational-Magnetorheological Abrasive Flow Finishing (R-MRAFF)	Dr. V.K Jain, IIT, Kanpur	May 18- July 03, 2015
15	Dr. NarendraKohli	HBTI Kanpur	Development of Aadhaar (12-digit unique identifica-	Dr. J Ram Kumar IIT, Kanpur	May 12- June 29, 2015

			tion (UID) number) Card based Online Health Care Sys- tem		
16	Dr. Gaurav Bartya	HBTI Kanpur	A Finite Element Residual Stress Analysis of Vibra- tion assisted Hard Turning of AISI 52100 Steel	Dr.S.K. Choudhury IIT, Kanpur	May 11 - July 24, 2015
17	Mr. Vinod Kumar Misra	BTKIT Dwarahat	Inventory decision for substitutable and deteriorating items under realistic environ- ment of manufac- turers and retailers.	Dr.KripaShanker IIT, Kanpur	June 15 - July 19, 2015

Summer Internship Students

S.no	Name	University	Internship Subject	Worked under	Duration of Stay
1	Neha Gupta	HBTI Kanpur	An efficient maxi- mum power point tracking algorithm and control forvari- able speed wind energy conversion system	Dr.Nishchal K Verma IIT, Kanpur	May 12- July 24, 2015
2	Sourav Ghosh	IJET, Shibpur	Vibration isolation	Dr. C. Venkatesan IIT,Kanpur	May 12 - June 15, 2015
3	AnkitPrashar	GITAM Institute of Technolo- gy	Finishing of Micro channels	Dr. J Ramkumar IIT, Kanpur	May 11- June 5,2015

4	Shubhi Gupta	HBTI Kanpur	Automated Health Care System	Dr. J Ramkumar IIT, Kanpur	May 15- July 14, 2015
5	Rityuj Singh Parihar	NIT Raipur	Development of multigraded cutting tool material	Dr. Nilesh Prakash Gurao IIT, Kanpur	May 28 - July 15, 2015
6	Kush Kumar Nayak Phd	NIT Raipur	In-vitro Biocompatibility Study of Porous Scaffold.	Dr. Ashok Kumar IIT, Kanpur	May 10-June 24, 2015
7	Reshma Nair M.tech	NIT Raipur	Removal of Copper Ion by Micellar Enhanced Ultrafiltration under CSTR Mode: Optimization of Operating Conditions	Dr. P.K. Bhattacharya IIT, Kanpur	May 12- July 6, 2015
8	Bhawani Madhela	NIT Raipur	Studies on Spent Sulfite Liquor Treatment applying different Membrane Module Configurations	Dr. P.K. Bhattacharya IIT, Kanpur	May 12- July 6, 2015
9	Sonali Gore M.tech	NIT Raipur	“Effect of Silica Nanoparticle on Surface Tension of Ethanol -Water System”	Dr. Jayant K. Singh IIT, Kanpur	May 11 – July 3, 2015
10	Srivani Sristi	MNNIT Allahabad	Helicopter Trim Analysis using Unsteady Aerodynamic Model	Dr. Abhishek IIT, Kanpur	May 12 – July 15, 2015
11	Vivek Ruhela	AMU	Characterization of the Set of All Rigid Graphs Corresponding to a given Set of Vertices	Dr. Ramprasad Potluri IIT, Kanpur	June 2- July 15, 2015

12	Chandra Shekhar	MMMUT	“Design and control of 3 DOF planar cooperative manipulator arms”	Dr. Bhaskar Dasgupta IIT, Kanpur	May 11- June 16, 2015
13	Devendra Kumar Singh	MMMUT Gorakhpur	Ultrasonic Testing Using Conventional Pulsed Receiver	Dr. N. N. Kishore IIT, Kanpur	May 15 – July 9, 2015
14	Chandan Kumar	MMMUT Gorakhpur	Dual-Band Monopole Antenna with Microstrip Fed for WLAN Applications	Dr. Kumar Vaibhav Srivastava IIT, Kanpur	May 10- July 15, 2015
15	Syed Sibte Asghar Abidi	AMU	Molecular Self-Assembly: Influence of Sterics on the Aggregation of Phenols and Anilines in the Solid State	Dr. J. N. Moorthy IIT, Kanpur	May 12- July 15, 2015
16	Fiheon Imroze	NIT Kurukshetra	Design and Simulation of Multilayer Fluorescent OLED	Dr. Deepak Gupta IIT, Kanpur	June 1 – July 14, 2015
17	Neha Maurya	MNNIT Allahabad	Simulation and Analysis of Double Gate MOSFET using Silvaco TCAD	Dr. Yogesh Singh Chauhan IIT, Kanpur	May 10- July 15, 2015
18	Deepak Kumar Singh	MNNIT Allahabad	Computational analysis of Separation on a Two Dimensional airfoil at Low Reynolds Numbers	Dr. Ashoke De IIT, Kanpur	May 12 – July 9, 2015
19	Mudit Singh	MNNIT Allahabad	Participatory Rural Development	Dr. A.K Sharma IIT, Kanpur	May 12 – July 24, 2015

20	Akash Singh Rawat	MNNIT Allahabad	Simulation and Analysis of Double Gate MOSFET using SilvacoTCAD	Dr. Yogesh Singh Chauhan IIT, Kanpur	May 10 – July 15, 2015
21	Venus Singla	UICET, Panjab University, Chandigarh	Smart Packaging A color Indicator by using Polyani-line	Dr. Siddhartha Panda IIT, Kanpur	June 01- July 14, 2015
22	Asha Sharma	AMU	Characterization of polymeric Dielectric Materials	Dr. Nandini Gupta IIT, Kanpur	May 12 – July 24, 2015
23	DeepjyotiNath	NIT Silchar	Physical Model Study of the Proposed Bridge on the River Rapti at Pipraghat in Balrampur	Dr. ShivamTripathi IIT, Kanpur	May 11- July 03, 2015
24	Shubham Pandey	HBTI Kanpur	Automated Health Care System	Dr. J Ramkumar IIT, Kanpur	May 15 – July 14, 2015
25	Mr.Anirban Roy	R.V College of Engg.	Role of CNTs in modifying properties of agar	Dr. VivekVerma IIT, Kanpur	June 8 – July 3, 2015
26	Nandini Sharma	PEC University of Technology Chandigarh	Structure and ferroelectric investigation of GaFeO ₃	Dr. Ashish Garg IIT, Kanpur	May 25 -July 18, 2015
27	Litton bhandari	BTKIT,	Vertical Axis Wind Turbine	1) Dr. Abhisek IIT, Kanpur	June 8 – July 14, 2015
28	Ishita		Tensile Test and Crack Analysis of PineNeedle Short	2) Dr.C.S.Upadhyay &	
29	Vipin Singh Panwar				

		Dwarahat	Fibre Reinforced Composites	Dr.P.M.Mohite IIT, Kanpur	2015
30	Prashant Nayal	BTKIT			June 8 – July 1, 2015
31	YogeshPapnai	Dwarahat	Pine Needle as a Fuel	Dr . D.P.Mishra IIT, Kanpur	June 8 – July 3, 2015
32	PoonamJeena*	BTKIT Dwarahat	Not Completed	Dr. AnirbanGuha IIT, Kanpur	
33	SoumyaVerma	MANIT Bhopal	Study of Corrosion Behaviour of Mg AE-42 in 3.5 wt% NaCl and 0.5N NaOH Solutions	Dr. Kallol Mandal IIT, Kanpur	8 Jun- 15 Jul 2015
34	Aritra Dawn*	IJET, Shibpur,	Not completed	Dr. J Ramkumar IIT, Kanpur	
35	Shailendraku-mar Singh	NIT Patna	Particle size distribution by image processing	Dr. Animesh das IIT, Kanpur	May 19- June 18, 2015

- **PoonamJeenaAndAritraDwan did not complete** their internship due to some personal reasons.

Summary of Faculty Feedback

Workshop Total Attendance : 17

<i>Questions</i>	<i>Excellent</i>	<i>Good</i>	<i>Ordinary</i>
Clarity of communication about workshop	08	05	00
Organization of the program	10	03	00
Effectiveness of learning experience	09	04	00
	<i>Appropriate</i>	<i>Short</i>	<i>long</i>

Duration of program	11	00	02
	<i>Definitely</i>	<i>Maybe</i>	<i>No</i>
Would you like to have more such program?	12	00	00
Additional Suggestions	<ul style="list-style-type: none"> • Plastic Technology related subjects. • The Programme may be organized for the duration of 4 to 10 weeks. 		

Teaching

Which subjects do you teach?	<ul style="list-style-type: none"> • Vibrations, CAD, DOM • SOM • Thermodynamics, Heat Transfer, • Air conditioning, Computer N/W, Optical N/W, IC • Machine design ,Mechanics • UG B. Tech ECE courses digital electronics, antenna & wave propagation. • Mechanics of composite Materials. 		
What is average student to teacher ratio in your institute?	<ul style="list-style-type: none"> • 20:01 • 10:01 • 20:01 • 15:01 • 26:01 • 30:01 • 30:01 • 20:01 		
Questions	YES	NO	
Do you have additional support for teaching (tutors, graders, teaching Assistants, etc)?	07	09	
Do you give class projects for UG classes?	14	02	
Do you give class projects for PG classes?	14	01	
Do you have sufficient resources for laboratory courses?	06	09	
	<i>Sufficient</i>	<i>Inadequate</i>	
Is the library/journal/e-connection support adequate?	04	11	
	<i>Definitely</i>	<i>May be</i>	<i>No</i>
Would you like to have common (TEQIP) repository of course material?	14	02	00
Would you like to visit IITK to participate in and develop course material (existing or	15	01	00

Would you like to participate in creation of the repository material (course files/lab. Manu-	14	02	00	
	<i>e-courses</i>	<i>Workshops</i>	<i>Content</i>	<i>none</i>
How can IITK effectively help you prepare for teaching?	14	14	02	00
How can TEQIP help improve your teaching?	<ul style="list-style-type: none"> • By knowing the teaching methods. • TEQIP has provided financial assistance for small projects. Due to practical experience learning has been improving. • I learned very basic topics and other methods of determining the problem to compare with the numerically analysis. • By exposing us to various new idea and teaching experience. • TEQIP should fund us to buy laboratories equipment so that lab can be upgraded. • TEQIP provide a better platform for us to grow teaching skill with guidance of IIT K Faculty. • Teaching requires strong knowledge base. TEQIP helps us to interact the experience and knowledge environment of IIT to help us grow in this regard. • Workshop on advanced topics may be extremely useful. • TEQIP is in accordance with the policy to technical training to both teachers and students. It provides good exposure for enhancing research skills & other technical knowledge. • Provide knowledge of latest research in the field of teaching. 			

Research

<i>Questions</i>	<i>Definitely</i>	<i>Maybe</i>	<i>No</i>
Would you like to visit an IIT for a visiting-faculty/ post-doctoral fellow, if offered (via-TEQIP)?	15	01	
Would you like to share/use research infrastructure at IITK, if made available?	16	00	00
Would you like to conduct collaborative research with IITK?	16	00	00

Would you like lectures by experts (Indian and international) on niche research areas/topics?	16	00	00
Do you want special-topic conferences?	15	01	00
How can TEQIP help improve your research?	<ul style="list-style-type: none"> • By participating as visiting research program, collaborative research programme etc. • Yes, by this i got a new topic of research which is very interesting and innovative topic. • By providing collaborative research opportunity. • TEQIP can help by introducing subject oriented workshop on CFD. • It provides a exposure with the most experienced researcher or faculty. • TEQIP can help us in improving the research by subsidizing the testing, characterization equipment charges for the associated colleges. • Visiting researcher programme may also be made available during short duration holidays throughout the academic year, if possible. • Sufficient facilities available for research work at IITK. This programme is very good for exploring the availability facilities. • Long term collaborative research. • By providing more such interactions and research programme. • By participating in visiting research programme. 		

Summary of Students Feedback

Workshop

Total Attendance:35

<i>Questions</i>	<i>Excellent</i>	<i>Good</i>	<i>Ordinary</i>
Clarity of communication about the program	16	14	01
Organization of program	18	13	00

Effectiveness of program	20	10	01
Effectiveness of learning experience	22	06	03
	<i>Appropriate</i>	<i>Short</i>	<i>long</i>
Duration of program	25	04	03
Additional Suggestions	<ul style="list-style-type: none"> • Communication between host faculty & TEQIP IITK should be happen to conduct the programme successfully. • It would be better if we are given the opportunity to get involved in practical work rather than simulation. • There should have been certain get together arranged for the interns. It would have helpful in knowing more topics. 		

Learning

<i>Questions</i>	<i>Yes</i>	<i>No</i>
Do you get enough class projects?	22	08
Is the learning adequate?	28	02
Do you have sufficient resources for laboratory	27	03
What is your area of specialization	<ul style="list-style-type: none"> • Wind Energy Conversion System • Computer Science • Java(jsp) • Development studies • Double Gate • Microwave Engg(patch antenna) • Tissue Engineering • Gradation by image processing • Robotics • Aerospace structure. • Chemical Process Design 	

	<ul style="list-style-type: none"> • Membrane separation • Biomaterials • CIM • Computational Fluid Dynamics. • Organic electronics • Manufacturing • Manufacturing Design • Structure analysis • Crystal Engineering • Rigidity in Graph Theory. • Functionally graded material • High voltage and insulation. • Materials Science. 		
	<i>Sufficient</i>		<i>inadequate</i>
Is the library/journal support/e-connection adequate?	26		04
	<i>Definitely</i>	<i>Maybe</i>	<i>No</i>
Would you like to have common (TEQIP) repository of course	22	06	00
Would you like to visit IITK to attend specialized	31	02	00
Would you like MOOCS/e-resources based courses?	24	05	01
How can TEQIP help improve your learning?	<ul style="list-style-type: none"> • By organizing this type of workshop frequently • Online certificate courses. • By providing us opportunity to work under guidance of IITK faculty. • The only drawback of this program is lack of communication in between TEQIP & host faculty of different departments. • TEQIP can improve learning by providing more time to scholars. • TEQIP can help by cooperating our research internship with much of laboratory work and providing us with course materials. • Provide e-material for topics related to micro machining. • By providing the open access to the available resources like library etc. • By arranging guest lectures. • Organizing small talks of professors in the colleges. 		

	<ul style="list-style-type: none"> • Organize these types of short courses. • It can organize free online courses. • By providing me a choice to work & interact with people of IITK and feel the environment of IITK
	<ul style="list-style-type: none"> • By providing research funding. • By organizing such types of programme twice in a year • Give library facility • By the programme organized by TEQIP I get to know how research conducted in IITs and how can we improve our research. • Provided me proper communication if other programme related to my specialization occur in near future.

Research

<i>Questions</i>	<i>Definitely</i>	<i>Maybe</i>	<i>No</i>
Would you like to visit an IIT for a short visit /internship/post- doctoral stint ,if offered (via	25	03	00
Would you like to share/use research infra- structure at IITK, if made available?	25	03	00
Would you like to conduct collaborative re- search with IITK faculty?	26	02	00
Would you like lectures by experts (Indian and international) on niche research areas/topics?	26	02	00
Do you want special-topic conferences?	27	01	00
How can TEQIP improve your research ?	<ul style="list-style-type: none"> • By organizing such internships and collaborative programmes. • This programme is very helpful in our research area. This programme allows us to learn various characterization techniques. • With this programme I get exposure to advance machine and new research ideas. • TEQIP give us opportunity to exposure over new area of research and motivate us to work together for R&D. 		

	<ul style="list-style-type: none"> • My IITK guide or this project supervisor wants that I will come again to do some other project together if TEQIP again funded me for lodging and fooding, that is very helpful for me. • It can help by increasing number of days. • By conducting long term projects under faculty whom have knowledge of TEQIP. • By providing me assistance and support through such programmes in future. • It can provide learning support in the field of current technologies. • By keeping workshop on related topic. • By providing the independency to do my work on the topic choosen by me. This will help any person involved. • By providing collaboration of our college with the different IIT's. • Very helpful. • By providing more time to scholar. • Please try to cover R&D expenses, if possible • It was really helpful in building up insight. • By providing the remote guide facility and access to the IITK software from our own institute through internet. • Exposure to experts. • Resources which otherwise were inaccessible.
How was this programme helpful to you ?	<ul style="list-style-type: none"> • Through my whole internship I learnt a lot. • Through this programme I got chance to work with eminent pro-

fessor in his Lab.

- Learn new techniques about how to do research and have a chance to fully exposure ourself.
- I learn some synthesis techniques characterization. I learn many things from my project supervisor which will very helpful to my Ph.D thesis.
- It was very good experience & very nice atmosphere to learn something.
- It was a very good exposure in the field of research and higher studies.
- It provides us a great exposure to various topics and technology.
- Learned a lot different techniques using in the research area.
- It helped me to built my concept and enhance my knowledge through dynamic interaction.
- Able to learn various topics including area of interest.
- It provides me a lot of experimental knowledge.
- Very much helpful. I have learnt something that I would have learnt after my B.Tech. being aware to these topic is very helpful.
- It was beneficial for me as i did not at all aware of the advancements in this field.
- It was quite helpful. It brought out purposeful thinking and gave encourage as that programme was held at IIT Kanpur.
- It provided me basic idea how gradation is done by image processing and what other properties can be known through image processing.
- I was unable to conduct my experiment because TEQIP IIT Kanpur did not support R&D expenses

	<p>which was raised due to expensive chemicals used in various experiments and life sciences.</p> <ul style="list-style-type: none">• It was really helpful in building up insight.• By this programme, I got the in-depth knowledge about device modelling and I can continue my thesis on it.• Not much as there was very little interaction between the faculty/students of IITK and me.• My understanding about research got improved. Accessed and stored lot of research materials useful for my thesis/article writing.
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OUTCOME

The Summer Internship and Visiting Researcher program was a very successful endeavor towards encouraging research collaboration and student exchange between Institutes under the quality circle of KIT, IIT Kanpur. The feedback from student interns and visiting researchers were excellent encouraging us to organize more research orientated program for students and faculties. According to the participants, it provided exposure to various new ideas and thoughts using which they could improve their research work. During this program students from various institutes got the chance to learn from the best professors and it helped increased their knowledge base. Students got to know how they could improve their research. Because of this program participants got the chance to exchange their ideas and thoughts and this helped them modify their approach towards solving a problem. Visiting faculties got good exposure for enhancing research skills and other technical knowledge by interacting with the host faculty here. This programme allowed the participants to learn various characterization techniques. With this programme participants got exposure to advanced machines and new research ideas.