

## 6. ACADEMIC ACTIVITIES

### 6.1 PELLETRON BEAM UTILIZATION BY USERS

#### 6.1.1 Pelletron Beam Time Utilization and Experiments performed (April 2006 - March 2007)

Users	No. of shifts allotted	Projects in			
		Nuclear Physics	Materials Science	Radiation Biology	Atomic Physics
<b>A. Universities / Colleges</b>					
Agra University	7		2		
Allahabad University	4		1		
AM University	33	2	1		
Amity Eng. College	3		1		
Anna University	13		5		
Bangalore University	9		3		
BH University	5		2		
Calcutta University	14	1	1		
CCS University, Meerut	5		1		
DAV Indore	3		1		
Delhi University	24	1	2		
GG University, Bilaspur	2		1		
GND University	3		1		
Gulbarga University	3		1		
Himachal Pr. University	7		3		
HNB University	3		1		
Hyderabad University	7		1		
Karnataka University	24	1			
Kurukshetra University	7		3		
MD University, Rohtak	1			1	

Users	No. of shifts allotted	Projects in			
		Nuclear Physics	Materials Science	Radiation Biology	Atomic Physics
MS University, Baroda	3		1		
Mumbai University	8		3		
NEH University	2			1	
North Orissa University	3		1		
Presidency Coll.Chennai	2		1		
Pune University	5		2		
Punjab University	39	2	2		
Rajasthan University	13		4		
Ratnagiri College	3		1		
S.N. College, Kerala	2		1		
Saurashtra University	7		1	1	
Stuttgart University	4		1		
Tezpur University	6		2		
UP Technical University	3		1		
Utkal University	3		1		
<b>B. Institutions</b>					
BARC, Mumbai	12		3		
CSNSM, France	3		1		
Dayalbagh Inst., Agra	7		2		
IIT, Delhi	9		3		
IIT, Roorkee	15	1			
IOP, Bhubaneswar	9		2		
ISRO, Bangalore	2		1		
IUAC, New Delhi	40	1	5		
IUC-DAE, Indore	5		2		
IUC-DAE, Kolkata	21	1			
SINP, Kolkata	12	1			
VECC, Kolkata	3	1			

Users	No. of shifts allotted	Projects in			
		Nuclear Physics	Materials Science	Radiation Biology	Atomic Physics
C. Facility tests	70				
<b>Total</b>	<b>488</b>	<b>12</b>	<b>72</b>	<b>3</b>	

### 6.1.2 List of Users Family

The following list includes Universities/Colleges/Institutions that have used the IUAC Pelletron facility (once or more) since 1991.

#### (A) UNIVERSITIES - (76)

01.	Agra University (B.R. Ambedkar Univ.)	Agra
02.	Aligarh Muslim University	Aligarh
03.	Allahabad University	Allahabad
04.	Andhra University	Waltair
05.	Anna University	Chennai
06.	Assam University	Silchar
07.	Banaras Hindu University	Varanasi
08.	Bangalore University	Bangalore
09.	Berhampur University	Berhampur
10.	Bhagalpur University	Bhagalpur
11.	Bharthidasan University	Tirucherapalli
12.	Bhavnagar University	Bhavnagar
13.	Bombay University	Mumbai
14.	Burdwan University	Burdwan
15.	Calcutta University	Kolkata
16.	Calicut University	Calicut
17.	Chaudhury Charan Singh University	Meerut
18.	Cochin University	Cochin

19.	Cochin University of Science & Technology	Cochin
20.	Delhi University	Delhi
21.	Devi Ahilya University	Indore
22.	Dr. B.A.M. University	Aurangabad
23.	G.B. Pant University	Pantnagar
24.	Gauhati University	Guwahati
25.	Gujarat University	Ahmedabad
26.	Gulbarga University	Gulbarga
27.	Guru Ghasidas University	Bilaspur
28.	Guru Nanak Dev University	Amritsar
29.	Himachal Pradesh University	Simla
30.	HNB Garhwal University	Srinagar Garhwal
31.	Hyderabad University	Hyderabad
32.	Jamia Milia Islamia University	New Delhi
33.	Jammu University	Jammu
34.	Jawaharlal Nehru University	New Delhi
35.	Kalyani University	Kalyani
36.	Karnataka University	Dharwad
37.	Kashmir University	Srinagar
38.	Kiel University	Germany
39.	Kurukshetra University	Kurukshetra
40.	Lucknow University	Lucknow
41.	Ludwig Maximilian University	Munich, Germany
42.	M.D. University	Rohtak
43.	M.L. Sukhadia University	Udaipur
44.	M.S. University	Baroda
45.	Madras University	Chennai
46.	Mahatama Gandhi University	Kottayam
47.	Mangalore University	Mangalore
48.	Manipur University	Imphal

49.	Mannonmaniam Sundarnar University	Tirunelveli
50.	Mysore University	Mysore
51.	Nagpur University	Nagpur
52.	North Eastern Hill University	Shillong
53.	North Maharashtra University	Nandurbar
54.	North Orissa University	Baripada
55.	Osmania University	Hyderabad
56.	Patna University	Patna
57.	Periyar University	Kerala
58.	Pondichery University	Pondichery
59.	Poona University	Pune
60.	Punjab Agricultural University	Ludhiana
61.	Punjab University	Chandigarh
62.	Punjabi University	Patiala
63.	Rani Durgawati University	Jabalpur
64.	S.K. University	Anantpur
65.	Stuttgart University	Germany
66.	Saurashtra University	Rajkot
67.	Technical University	Darmstadt, Germany
68.	Tezpur University	Tezpur
69.	Shivaji University	Kolhapur
70.	University of Maryland	Maryland, USA
71.	University of Notre Dame	Notre Dame, USA
72.	University of Rajasthan	Jaipur
73.	Utkal University	Bhubaneswar
74.	Vikram University	Ujjain
75.	Vishwa Bharti University	Bolpur
76.	West Bengal University of Technology	Kolkata
<b>(B)</b>	<b>COLLEGES - (47)</b>	
01.	Anand Mohan College	Kolkata

02.	Armed Forces Medical College	Pune
03.	Bareilly College	Bareilly
04.	Belonia College	Belonia, Tripura
05.	Bharatiya Jain Sanghatana College	Pune
06.	Bhiwandi College	Mumbai
07.	BNN College	Bhivandi, Madhya Pradesh
08.	CHM College	Ulhasnagar, Maharashtra
09.	College of Engineering and Technology	Aligarh
10.	DAV College	Mumbai
11.	DBS College	Dehradun
12.	Doodhsakhar Mahavidyalaya	Bidri, Maharashtra
13.	Govt. Art College	Rajamundri, Andhra Pradesh
14.	Govt. College	Ajmer
15.	Govt. College	Mehendragarh
16.	Govt. College	Kota
17.	Goyalpara College	Goyalpara, Assam
18.	Gurudas College	Kolkata
19.	Jai Hind College	Mumbai
20.	Kongunadu Arts & Science College	Coimbatore
21.	Koshi College	Khagaria, Bihar
22.	Mahila Degree College	Lucknow
23.	M.M.H.College	Ghaziabad
24.	MR College	Vizianagram (AP)
25.	Malviya Regional Engg. College	Jaipur
26.	Nayagarh College	Nayagarh
27.	Nizam College	Hyderabad
28.	NSAM College	Mangalore
29.	Orissa Univ. of Agriculture & Tech.	Bhubneshwar
30.	Poorna Prajna College	Udipi, Karnataka
31.	Punjab Engineering College	Chandigarh

32.	RBS College	Agra
33.	RD & DJ College	Munger, Bihar
34.	Regional Engineering College	Kurukshetra
35.	RPG College	Ratnagiri
36.	School of Physical Sciences	Nanded, Maharashtra
37.	School of Tech. & Applied Sciences	Kottayam, Kerala
38.	SDM College	Ujire, Mysore
39.	Sharanabasaveshwar College of Science	Gulbarga
40.	S.N.College	Kollam
41.	Sri Bhuvanendra College	Karkala
42.	St. Edmunds College	Shillong
43.	S.V. College	Aligarh
44.	Swami Shardhanand College	New Delhi
45.	University College	Kurukshetra
46.	University College of Science & Tech.	Kolkata
47.	Vaish College	Rohtak
<b>(C) OTHER INSTITUTIONS - (49)</b>		
01.	AICTE	New Delhi
02.	Amity School of Engineering	New Delhi
03.	Bhabha Atomic Research Centre	Mumbai
04.	C.E.E.R.I.	Pilani
05.	CAT	Indore
06.	CCMB	Hyderabad
07.	Centre for Superconductivity research	USA
08.	CSNSM, Orsay Cedex	France
09.	D.M.R.L.	Hyderabad
10.	Dayalbagh Educational Institute	Agra
11.	Defence Laboratory	Jodhpur
12.	Defence Research & Development Orgn.	Dehradun
13.	Genetic Institute of Manufacturing Technology	Singapore

14.	GSI	Germany
15.	Harcourt Butler Technological Institute	Kanpur
16.	I.G.C.A.R.	Kalpakkam
17.	Indian Institute of Science	Bangalore
18.	Indian Institute of Technology	Chennai
19.	Indian Institute of Technology	Kanpur
20.	Indian Institute of Technology	Kharagpur
21.	Indian Institute of Technology	Mumbai
22.	Indian Institute of Technology	New Delhi
23.	Indian Institute of Technology	Roorkee
24.	Indian Space Research Organisation	Bangalore
25.	INFN-LEGNARO	Italy
26.	INMAS	New Delhi
27.	Institute of Basic Sciences	Agra
28.	Institute of Materials Science	Bhubaneswar
29.	Institute of Physics	Bhubaneswar
30.	Institute of Science	Mumbai
31.	IUC-DAEF, Calcutta Centre	Kolkata
32.	IUC-DAEF, Indore Centre	Indore
33.	Joint Inst. of Nuclear Research	Dubna, Russia
34.	KIIT	Bhubaneswar
35.	Massachusetts Inst. of Technology	USA
36.	Nanocrystals Technology	USA
37.	National Academy of Science	Allahabad
38.	National Institute of Technology	Kurukshetra
39.	National Physical Laboratory	New Delhi
40.	NCCCM/BARC	Hyderabad
41.	NCSR	France
42.	Oak Ridge National Laboratory	USA
43.	Saha Institute of Nuclear Physics	Kolkata



44.	Sant Longowal Institute of Technology	Sangrur
45.	SSPL	New Delhi
46.	Tata Institute of Fundamental Research	Mumbai
47.	Thapar Inst. Of Eng. & Technology	Patiala
48.	VECC	Kolkata
49.	Wadia Institute of Himalayan Geology	Dehradun

## 6.2 M.SC. ORIENTATION PROGRAMME

N. Madhavan

The two-week M. Sc. orientation programme has been providing hands on training in fields associated with accelerator based research to selected M. Sc. students by way of short projects. Those M. Sc. students desirous of taking part in this programme may get their applications forwarded through their department giving the relevant details such as the marks in all the exams till date, broad field of interest and the period convenient to them. Efforts are made to give chance to students from various parts of the country.

M. Sc. Orientation programme is conducted by IUAC to encourage interested students to supplement their knowledge and to motivate them to continue their career in science. However, this programme is not conducted to satisfy the M. Sc. credit requirements of any university department. Due to large number of applicants every year than we can handle, we regret that all applicants may not be selected for project work.

The details of some of the projects carried out in various fields in the year 2006-2007 are given below.

Name of student	Affiliation	Project title	Guide/Lab. at IUAC
Ms. Kavita Sharma	Banasthali Vidyapith, Rajasthan	Testing of charged particle, gamma and neutron detectors	Mr. Akhil Jhingan, Detector Lab.
Ms. Rita Singh	Banasthali Vidyapith, Rajasthan	Study of thin film deposition by atom beam sputtering	Mr. Saif Ahmad Khan Materials Science Lab.
Mr. Radhey Shyam Thakur	JNU, Delhi	Dissociation dynamics of multiply charged molecules	Dr. C. P. Safvan, RFQ Lab.

Mr. Ajit Pal Singh	RBS College, Agra	Study of characteristics of photoluminescence	Mr. Fouran Singh, Materials Science Lab.
Mr. Sandeep Kumar Agarwalla	Utkal Univ., Orissa	Comparative study of films prepared by fast atom sputtering & thermal evaporation techniques	Mr. Saif Ahmad Khan, Materials Science Lab.
Mr. Harvinder Singh	HNB Garhwal Univ., Srinagar (Uttaranchal)	ECR operation with metallic ion beam	Mr. Praveen Kumar, ECR/LEIBF Lab.
Ms. Gargi Panwar	HNB Garhwal Univ., Srinagar (Uttaranchal)	Familiarization of ECR ion source based low energy ion beam facility & production and analysis of gaseous and metallic ion beams	Ms. Lakshmy, ECR/LEIBF Lab.
Mr. Akhil Srivastava	Allahabad Univ., Allahabad	Study of sample and characterization	Mr. A. Tripathi, Materials Science Lab.
Ms. Seema D. Badhani	University of Mumbai	Ionization chamber	Mr. Akhil Jhingan, Detector Lab.
Mr. Raghav Anil Narayan	University of Mumbai	Construction and working of multi-wire proportional chamber (MWPC)	Mr. Akhil Jhingan, Detector Lab.
Mr. Ashish Kumar Rai	IIT, Delhi	Characterization of thin films using X-ray reflectivity	Mr. Pawan Kumar Kulriya, Materials Science Lab.
Mr. Diyanshu Srivastava	IIT, Delhi	Fabrication of Schottky diodes & characteristics of its parameters	Mr. Sugam Kumar, RFQ Lab.
Mr. Mohan Singh	Jamia Millia Islamia, Delhi	Processing of materials by low energy ions	Mr. Praveen Kumar, ECR/LEIBF Lab.
Mr. Ravinder Singh Chauhan	Jamia Millia Islamia, Delhi	Raman Spectroscopic Studies on Nanostructured Materials	Mr. Fouran Singh, Materials Science Lab.

### 6.3 LIBRARY

Priyambada Nayak

#### Salient features

Working hours:	Round the clock, all days of the week
Total Books:	~2550 (broadly covering the subjects Nuclear Physics, Materials Science, Nanotechnology, Electronics, Computers, Radio-biology, Radiation Physics, Vacuum Instrumentation, Cryogenics, Atomic Physics, Mathematical Physics, Quantum Mechanics, Astrophysics etc.)
New Books added in 2006-07:	62
Current Journals :	52
New Journals added in 2006-07:	01
Bound Journals:	~7400
Laboratory Reports:	~900 (from nearly 50 labs)
New Reports arrived in 2006-07:	30
Reprints/Photocopies:	~700
Newsletters, House magazines etc:	50
Databooks, Manuals etc.:	~550
Ph.D. Thesis:	100
CD-ROM Database:	INIS 1976-present
Microfilm Collection:	IEEE Transactions on Nuclear Science Vol. 1-32 (1954-85)
Hardware:	Cyrix M II with 64MB RAM & 2.1GB HD. Minolta RP 503 Microfilm reader-printer
Clientele:	Apart from IUAC staff and students, the library is consulted by students, teaching and research staff from over 100 academic and research institutions in different parts of the country.

The technical reports and technical memos of various projects carried out at IUAC are also compiled and kept in the library for reference purpose. ERL server from Silver Platter has been installed on intranet server to access the INIS database. Web-based OPAC and library cataloging software package has been installed for the computerization of library documents. The catalog of books, Ph.D. Thesis, Manuals, and Conference Proceedings are already computerized and it can be searched by author, title, keyword etc. With the advent of the facility for online access of various journals through internet, full-text of a number of journals is now accessible. Apart from the print journals, PROLA and IOP journal archive (online), SCIENCE DIRECT are also being subscribed by the library. The library is also a member of UGC-INFONET and more than 100 journals are being accessed on-line through this facility. The library is open round the clock. Hence, automatic monitoring system has been installed.

## **6.4 THE PHD TEACHING PROGRAMME**

A.Mandal

The two semester Ph.D programme for research students of IUAC, outside university students and for new scientist trainees of IUAC continued to run well during this year. Overwhelming response from different universities shows the positive benefit of the programme to the community of students starting fresh research at different universities throughout the country. The programme consists of two semesters- one during January-May in which courses on Experimental Physics and Accelerator Physics are offered and the second one during August-December in which courses on Computers in instrumentation and data acquisition and Advanced course on Material sciences were offered. Some special lecture series on Nuclear Physics and Basic Solid State Physics were also offered this year. Each course consists of five modules. Each module consists of 8 lectures of one and half hour duration and the credit awarded is 0.8. One course on Engineering Drawing is also offered as a part of the Experimental Physics to give basic understanding of drawing. About 20 students from different universities, colleges participated in each module. Six students from School of Physical sciences, JNU attended the course on Experimental Physics. In addition 3 scientist trainees and two JRFs of IUAC also attended the course.

One month before each semester a poster containing details of the course is printed and circulated to physics department of various universities and colleges inviting application for attending to the courses. The programme is also put into our website. Accommodation and TA/DA are provided to the selected participants.

## **6.5 ACADEMIC ACTIVITIES HELD IN 2006-2007**

- |                           |  |
|---------------------------|--|
| 10-11 <sup>th</sup> April | Workshop on Cryogenic Science and Technology in India:<br>Present and Future at IUAC<br>(Contact Person: T.S. Datta, IUAC) |
| 21 <sup>st</sup> April    | A Workshop on Physics with Accelerators<br>(Contact Person: D.K. Avasthi, IUAC)  |

4-9 <sup>th</sup> June	First National School on Biological Effects of Ionizing Radiation: Cellular and Molecular Approaches (Contact Person: A.Sarma, IUAC)
12-16 <sup>th</sup> June	School on X-ray Techniques in Materials Science at IUAC (Contact Person: A. Tripathi, IUAC)
6-7 <sup>th</sup> July	User Workshop - Accelerator Users Presentations for beam time proposals
8 <sup>th</sup> July	40th AUC Meeting
28 <sup>th</sup> July	IUAC Ph.D Teaching Programme, Fall Semester starts
9-11 <sup>th</sup> August	IUAC Academic Workshop
25 <sup>th</sup> August	IUAC Acquaintance Programme at Kolkata (Contact Person: R.K. Bhowmik , IUAC)
14-15 <sup>th</sup> September	Workshop on Nuclear Physics with LINAC beam at IUAC (Contact Person: S.Muralithar and N.Madhavan, IUAC)
25-26 <sup>th</sup> September	Workshop on Functional Oxide Materials at IUAC (Contact Person: Ravi Kumar, IUAC)
31 <sup>st</sup> October-1 <sup>st</sup> November	Workshop on Nanotechnology with ion beams and possible applications at IUAC (Contact Person; D.K. Avasthi)
1 <sup>st</sup> December	IUAC Acquaintance Programme at Coimbatore University (Contact Person: N. Madhavan, IUAC)
17-18 <sup>th</sup> December	User Workshop - Accelerator Users Presentations for beam time proposals
19 <sup>th</sup> December	Foundation Day and 41st AUC Meeting
10 <sup>th</sup> January, 2007	IUAC Ph.D Teaching Program, Spring Semester starts
22 <sup>nd</sup> Jan-3 <sup>rd</sup> Feb.	Workshop on Design of Innovative Experiments (Contact Person: B.P. Ajith Kumar, IUAC)
14 <sup>th</sup> -15 <sup>th</sup> February	IUAC Academic Workshop
21 <sup>st</sup> -22 <sup>nd</sup> February	Workshop on LEIBF (Contact Person: G.Rodrigues, IUAC)
28 <sup>th</sup> February	National Science Day at IUAC (Contact Person: K.Asokan and D.Sen, IUAC)

## 6.6 CALENDAR OF EVENTS: 2007

26-27 <sup>th</sup> April	Conference on Accelerator and Low Level Radiation Safety (Contact Person: S.P.Lochab & R.G. Sonkawade, IUAC)
6-7 <sup>th</sup> July	User Workshop - Accelerator Users Presentations for beam time proposals
8 <sup>th</sup> July	42 <sup>nd</sup> AUC Meeting
20 <sup>th</sup> July	Acquaintance Programme at Raipur, Chhattisgarh (Contact Person: S. Muralithar, IUAC)
2 <sup>nd</sup> August	IUAC Ph.D Teaching Programme, Fall Semester starts
8-10 <sup>th</sup> August	IUAC Academic Workshop
17 <sup>th</sup> August	Acquaintance Programme at Dharwad, Karnataka (Contact Person: N.M. Badiger, Karnataka University and A. Sarma, IUAC)
24 <sup>th</sup> August	Workshop on AMS (Contact Person: S. Chopra, IUAC)
17 <sup>th</sup> -18 <sup>th</sup> September	Workshop on Materials Science with Swift Heavy Ions (Contact Person: A. Tripathi, IUAC)
23 <sup>rd</sup> -28 <sup>th</sup> September	International Conference on Ion Beam Analysis at Hyderabad University (Contact Persons: A.P. Pathak, Hyderabad University and D.K. Avasthi, IUAC)
12 <sup>th</sup> -13 <sup>th</sup> October	Workshop on Nuclear Physics with LINAC (Contact Persons: N. Madhavan and S. Muralithar, IUAC)
16 <sup>th</sup> November	Acquaintance Programme at Kohima, Nagaland (Contact Person: D.K. Avasthi, IUAC)
20-23 <sup>rd</sup> November	Intensive School on Cryogenics, Vacuum and Low Temperature Measurement (Contact Person: T.S. Datta, IUAC)
17-18 <sup>th</sup> December	USER Workshop - Accelerator Users Presentations for Beam Time Proposals
19 <sup>th</sup> December	Foundation Day and 43 <sup>rd</sup> AUC Meeting

## 6.7 LIST OF SEMINARS CONDUCTED IN THE YEAR 2006-07

<i>S. No</i>	<i>Date</i>	<i>Title</i>	<i>Name &amp; Affiliation</i>
1	03.4.06	Vision-2025 on nuclear and particle physics	Mr. J.J. Das, IUAC, New Delhi
2	03.4.06	Design of DTL (Drift Tube LINAC)	Mr. B.P. Ajithkumar, IUAC, New Delhi
3	20.4.06	Isomers & Shapes of heavy neutron-rich nuclei	Dr. Phil Walker, University of Surrey, U.K.
4	23.6.06	Why are there four interactions?	Prof. Naresh Dadhich, Director, IUCAA, Pune
5	01.8.06	Quantum confined atom-single impurity in nano-particle	Dr. R.N. Bhargava, NCT, New York, USA
6	04.8.06	Diamond Nano-Technology development at SINP	Dr. Nihar Ranjan Roy, SINP, Kolkata
7	11.8.06	SRF Technology & Compact Terahertz source development	Dr. Ganapati Rao, Jefferson Lab., USA
8	01.9.06	Hindi Pakhwara	Prof. Ramgopal Sharma, NCERT, Delhi
9	07.9.06	Hindi Pakhwara	Dr. Pratush Mandal, NCERT, Delhi
10	11.9.06	Quaternary Superconducting System Y-Ni-B-C	Dr. L.C. Gupta, TIFR, Mumbai
11	13.9.06	Hindi Pakhwara	Prof. G.K. Mehta, Ex-Director, IUAC, New Delhi
12	18.9.06	Data Acquisition Systems at IUAC : Current Status, trends and challenges ahead	Mr. E.T. Subramaniam, IUAC, New Delhi
13	16.10.06	Cluster & Cluster Assembled Materials	Dr. V.S. Ramamurthy, IUAC, New Delhi
14	23.10.06	Analysis of Induced Radio Activities in various materials in the Accelerator Facility and the neutron dosimetry for mono energetic fast neutrons in CR-39 plastics	Dr. R.G. Sonkawade, IUAC, New Delhi
15	08.11.06	Genes, Proteins & Nano Biology: An Introduction	Dr. Ch. Mohan Rao CCMB, Hyderabad

<i>S. No</i>	<i>Date</i>	<i>Title</i>	<i>Name &amp; Affiliation</i>
16	13.11.06	Proton coagulation & formation $H_3^+$ in low energy ion alcohol collisions	Dr. C.P. Safvan IUAC, New Delhi
17	21.11.06	Novel single phase formation of Co implanted ZnO thin films by swift heavy ion irradiation materials for spin trionics devices	Dr. Ravi Kumar, IUAC, New Delhi
18	06.12.06	Nuclear & RF instrumentation for large detector arrays in	IUAC S. Venkataramanan, IUAC, New Delhi
19	06.12.06	Fusion breakup and scattering of weakly bound nuclei	Prof. R.P.S. Gomes Instt. De Fisica, Brazil
20	07.12.06	Shapes of hot nuclei at extreme angular momenta	Prof. Adam Maj The Henryk Niewodniczanski Instt. of Nuclear Physics, Poland
21	08.12.06	Calculating the nuclear mass at finite angular momenta	Prof. I. Ragnarsson, LIT, Sweden
22	15.12.06	Penning traps techniques and its use for the atomic mass measurements and beta-decay spectroscopy of radioactive ions	Prof. S. Rehaman Univ. of Jyaskyla, Finland
23	22.12.06	Triaxial super deformed bands in $^{163}\text{Tm}$ wobbling Vs particle hole excitations	Prof. Umesh Garg Notre Damn Univ., USA
24	04.1.07	Physics with Dissociating Molecules	Mr. Sanker De IUAC, New Delhi
25	20.1.07	Introduction to Raman Spectroscopy	Prof. K.P. Jain IIT, Delhi
26	25.1.07	Direct nuclear reactions and nuclear structure	Dr. A.K. Jain BARC, Mumbai
27	26.1.07 27.1.07	Beam diagnostics & control instrumentation	Dr. Marc Ross FNAL, USA
28	30.1.07	Raman spectroscopy of the semi conducting nano materials	Dr. K.P. Jain, IIT/Delhi
29	31.1.07	Effect of host spin polarization on the stability of a local moment	Dr. Sanjiv Srivastava TIFR, Mumbai
30	06.2.07	Multilayer carbon films	Dr. Vinder Jaggi



<i>S. No</i>	<i>Date</i>	<i>Title</i>	<i>Name &amp; Affiliation</i>
31	07.2.07	A double sided Si strip detector as an active stopper for the rising project	Mr. Rakesh Kumar IUAC, New Delhi
32	08.2.07	Information & applications of direct nuclear reaction	Dr. A.K. Jain, NPD, BARC
33	08.2.07	Changing the character of a state : from a bound state to a resonance	Prof. Miroslaw Bylicki NCU, Poland
34	08.2.07	Superfluid He and the Bose-Einstein condensation	Dr. Jean Delayen Jefferson Lab, USA
35	09.2.07	Self assembled quantum dots in nano mechanical resonators	Prof. Wlodzimierz Jaskolski, NCU, Poland
36	13.2.07	What are neutron rich nuclei telling us?	Prof. Afsar Abbas IOP, Bhubaneswar
37	19.2.07	AMS & what can be studied?	Prof. Gunther Korschinek Technical Univ, Munich
38	01.3.07	Research facility available at Joint Instt. for nuclear research, Dubna, Russia	Dr. G. Timoshenko JINR, Dubna, Russia
39	19.3.07	New additions to accelerator control system	Mr. B.P. Ajithkumar IUAC, New Delhi

## 6.8 LIST OF PUBLICATIONS (2006-2007)

### A. Nuclear Physics

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## 6.9 LIST OF TECHNICAL REPORTS/TECHNICAL MEMOS (2006-07)

### A. LIST OF TECHNICAL REPORTS

Sl. No.	TITLE	AUTHORS	CATEGORY	REFERENCE No.
1	Maintenance problems in doors and windows	M.K. Gupta	Civil	IUAC/TR/MKG/2006-07/01
2	TIME to analogue converter for neutron array at IUAC	S.Venkataramanan, Arti Gupta, K.S. Golda, R.K. Bhowmik	Instrumentation	IUAC/TR/SV/ 2006-07/ 02
3	An in-situ system for characterization of transistors during irradiation	R.N. Dutt, P.V. Madhu, S.K. Saini, D. Kanjilal	-	IUAC/TR/RND/ 2006-07/ 03
4	Feasibility study of provision of air-conditioning and process water to ECR lab from existing A/c plant	A.J. Malyadri, Bishamber Kumar	MG-2	IUAC/TR/AJM/2006-07/ 04
5	Development of light link interface module	U.K.Rao, Y.Mathur, C.P.Safvan, P.Kumar and D. Kanjilal	Instrumentation	IUAC/TR/UKR/ 2006-07/05
6	Problems in commissioning of microwave generator of PKDELIS	U.K. Rao, Y.Mathur, G.O. Rodrigues, P.Kumar, P.S. Lakshmi, D.Kanjilal	Instrumentation	IUAC/TR/UKR/ 2006-07/06
7	Experiences with traveling wave tube amplifier in LEIBF	U.K. Rao, Y.Mathur, G.O. Rodrigues, P.Kumar, P.S. Lakshmi, D.Kanjilal	Instrumentation	IUAC/TR/UKR/ 2006-07/07
8	Low temperature control system for in-situ bruker D-8 advanced XRD system in materials science Ph-II	R.N. Dutt, R. Ahuja, Amit Kumar, P. Kularia, D.K. Avasthi	Instrumentation	IUAC/TR/RND/ 2006-07/08
9	Micro controller based radiation monitor	R.Ruby Santhi, R.N. Dutt, Birendar, B.PAjith Kumar	Instrumentation	IUAC/TR/RRS/ 2006-07/09

10	A study of microphonics damping in superconducting resonators and its implementation in linac	P. Patra, S.Ghosh, R. Mehta, G.K. Choudhury, B.K.Sahu, A. Pandey, D. Kanjilal, A. Roy	Development	IUAC/TR/PP/2006-07/10
11	Design, fabrication and testing of high vacuum chamber for prototype RFQ	R.Ahuja, A.Kothari, Sugam Kumar, C.P.Safvan	Instrumentation	IUAC/TR/RA/ 2006-07/11
12	Vacuum interlocking system	M. Archunan, Pradip Barua, Ashok Kothari	Electronics	IUAC/TR/MA/ 2006 07/12
13	Metal ion beams using volatile	P. Kumar, G.O. Rodrigues, P.S. Lakshmi, D.Kanjilal	Ion Source	IUAC/TR/PK/ 2006-07/13
14	Hardware interlock design for PKDELIS ECR source and LEBT system	U.K. Rao, Y.Mathur, G.O. Rodrigues, P.Kumar, P.S. Lakshmi,	Instrumentation	IUAC/TR/UKR/ 2006-07/14
15	X-ray diffraction	P.K. Kulariya, F.Singh, A. Kothari, R. Ahuja, R.N.Dutt, A. Tripathi, D.K.Avasthi	Materials Science	IUAC/TR/PKK/ 2006-07/15
16	A 16 channel 3.2-410K FPGA based cryogenic temperature monitor for silicon diode sensors with RS232/USB outputs	Joby Antony, D.S. Mathuria, T.S. Datta	Instrumentation	IUAC/TR/JA/2006-07/16
17	16 channel LINEARIZER for sixteen 0-10V linear analog outputs & RS232 o/p	Joby Antony, D.S. Mathuria, T.S. Datta	Instrumentation	IUAC/TR/JA/ 2006-07/17
18	An eight channel 3.2-410K FPGA based cryogenic temperature monitor for silicon diode sensors with RS232/USB O/P	Joby Antony, D.S. Mathuria, T.S. Datta	Instrumentation	IUAC/TR/JA/2006-07/18

19	A precise eight channel 73-410K FPGA based cryogenic temperature monitor for PT100 sensors with RS232/Ethernet O/P	Joby Antony, D.S. Mathuria, T.S. Datta	Instrumentation	IUAC/TR/JA/ 2006-07/ 19
20	A single channel precise 3.2-410K FPGA based cryogenic temperature monitor for silicon diode sensors with line arised 0-10V/4-20mA and RS232 O/P	Joby Antony, D.S. Mathuria, T.S. Datta	Instrumentation	IUAC/TR/JA/ 2006-07/ 20
21	Electronic gas flow counter with optically isolated RS232	Joby Antony, D.S. Mathuria, T.S. Datta	Instrumentation	IUAC/TR/JA/ 2006-07/ 21
22	A character displays unt to replace 16, 0-100uA non-linear analog gamma meters into digital in Pelletron control room with RS232/Ethernet output	Joby Antony, Bijender Singh	Instrumentation	IUAC/TR/JA/ 2006-07/ 22
23	FPGA based end-window GM counter for low background radiation measurement with RS232 outputs for data acquisition	Joby Antony, D.S. Mathuria, Bijender Singh	Instrumentation	IUAC/TR/JA/2006-07/ 23
24	Data acquisition tester module	V.V.V.Satyannarayana	Instrumentation	IUAC/TR/VVVS/2006- 07/24
25.	Innovative Science Experiments using PHOENIX	Ajith Kumar B.P., V.V. Satyannarayana & Kundan Singh	Instrumentation	IUAC/TR/AKBP/2006- 07/25
26.	Pulse shape discriminator electronics module	S.Venkataramanan, Arti Gupta, K.S. Golda, Hardev Singh, R.K. Bhowmik	Instrumentation	IUAC/TR/SV/2006-07/ 26
27.	400W RF power amplifier for LINAC (revised)	S.Venkataramanan, Yadhuvansh Mathur, P.Singh, S.K. Saini, Z.Zacharias, B.K. Sahu, A. Pandey, Ajith K.B.P.	Instrumentation	IUAC/TR/SV/2006-07/ 27

## B. LIST OF TECHNICAL MEMOS:

Sl. NO	TITLE	AUTHORS	CATE- GORY	REFERENCE No.
1	Low Water flow problem in Ph-I beam hall vault area	A.J. Malyadri, Bishamber Kumar	MG-2	IUAC/TM/AJM/2006-07/01
2	Breakdown of 19XI Chiller of Ph-2 A/c Plant	A.J. Malyadri, Bishamber Kumar	MG-2	IUAC/TM/VVVS/2005-06/02
3	Power Saturation Problem in Klystron Power Generator (PKDELIS)	Y. Mathur, G.O. Rodrigues, P.Kumar & P.S. Lakshmi	Instrumentation	IUAC/TM/YM/ 2006-07/03
4	Drift in the Capacitance measured by Capacitance Meter	U.K.Rao, Y.Mathur, Sugam Kumar, C.P.Safvan & D.Kanjilal	Instrumentation	IUAC/TM/UKR/ 2006-07/04
5	Air-Conditioning problem in HCI lab in Beamhall -II Extn. Store	A.J. Malyadri, Bishamber Kumar	MG-2	IUAC/TM/AJM/ 2006-07/05
6	Failure of pressure transducers in 19XL chiller of Ph-2 A/c Plant	A.J. Malyadri, Bishamber Kumar	MG-2	IUAC/TM/AJM/ 2006-07/06
7	Servicing of gamma radiation monitors	V.V.V.Satyanarayana	Instrumentation	IUAC/TM/VVS/ 2006 07/07
8	Servicing of EG&G Ortech NIM BIN power supplies	V.V.V.Satyanarayana	Instrumentation	IUAC/VVVS/TM/ 2006-07/08
9	Servicing Nuclear Enterprises preamplifier	V.V.V.Satyanarayana	Instrumentation	IUAC/VVVS/TM/ 2006-07/09
10	A flow viewer lab software for flow logging	Joby Antony	Instrumentation	IUAC/TM/JA/ 2006-07/10

## 6.10 TEACHING LAB ACTIVITIES

K. Asokan

As a part of Teaching Lab activities, about 8 one-day workshops on "Physics with Home made Equipment and Innovative Experiments (Phoenix)" were organized at various parts of our country. The objective of the program is to provide the basics of interfacing signals to a computer for carrying out physics lab experiments and some data analysis techniques. This programme was targeted for young faculties working in various colleges and universities, preferably handling M.Sc.

(Physics) labs. Two advanced workshops each of two weeks were also organized. IUAC also helped Indian Institute of Science Education and Research, Calcutta to set up basic experimental lab facilities using Phoenix kits. A modified version of Phoenix interface with microelectronic controller has been developed and made available through vendors at a very low cost. All technical details are available in the web ([www.iuac.res.in](http://www.iuac.res.in)). A spark protection counter along with controller has been developed for Jawaharlal Nehru University, New Delhi.