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Christ Church College Kanpur

The Department of Physics, Christ Church College Kanpur

cordially invites you to the

Inaugural Session

of

SCIENCE ACADEMIES REFRESHER COURSE

in

EXPERIMENTAL PHYSICS

Sponsored by

Indian Academy of Sciences, Bangalore

Indian National Science Academy, New Delhi

The National Academy of Sciences, India, Allahabad

&

Christ Church College, Kanpur

August 10, 2017 at 10:00 a.m. in the College Auditorium

Chief Guest

Professor J. V. Vaishampayan

Hon'ble Vice Chancellor, C. S. J. M. University, Kanpur

Guest of Honour

Dr. C. S. Sundar, Course Director

FASc, JC Bose National Fellow, IGCAR, Kalpakkam

The session is being presided over by

Dr. P. E. Deen

Hon'ble Secretary, College Governing Body

Dr. R. K. Dwivedi

HOD, Physics & Course Coordinator

Dr. R. K. Gupta

Principal

Science Academies Refresher Course in Experimental Physics

10–25 August 2017

Department of Physics, Christ Church College, Kanpur (UP)

Sponsored by Indian Academy of Sciences, Bengaluru

Indian National Science Academy, New Delhi

The National Academy of Sciences, India, Allahabad

A Refresher Course in Experimental Physics will be held in Christ Church College, Kanpur, from 10th to 25th August 2017 for the benefit of faculty involved in teaching undergraduate and postgraduate courses. Participants in this course will gain hands on experience with about twenty five experiments, with a low cost kit developed for the Indian Academy of Sciences, and manufactured by Ajay Sensors and Instruments in Bangalore. These experiments are in (a) mechanics, (b) heat, (c) electricity both DC and AC, (d) magnetism, (e) relaxation, (f) phase sensitive detection technique, and (g) non-linear dynamics. This course is sponsored by Indian Academy of Sciences, Bangalore; Indian National Science Academy, New Delhi; National Academy of Sciences, India, Allahabad and Christ Church College, Kanpur.

Refresher courses in Experimental Physics held so far have been highly successful and the experiments have been included in 125 institutions including universities, autonomous colleges, and advanced scientific institutions involved in education. The course will be directed by Dr. C S Sundar F.A.Sc. UGC has approved two-week Refresher Courses of good standing for promotion, vide notification. F3-1/2009 dated 30 June 2010.

Applications are invited from teachers with experience in teaching undergraduate and postgraduate courses in Physics. Motivated students of BSc and MSc Physics courses with keen interest in Experimental Physics may also apply. The maximum number of seats will be 34.

Selected participants will be paid actual fare by bus/train to and fro from their place of work not exceeding three tier AC railway fares. Out station participants will be provided boarding and lodging during the Course. Applications should be submitted ONLINE by clicking the following link.

<http://web-japps.ias.ac.in:8080/Refreshcourse/RCMCMC.jsp>

A copy of the application form signed by the applicant should also be sent by post to the Course Coordinator. In case of teachers, the form must also be signed and stamped by the Head of the applicants Institution stating that leave will be sanctioned if the applicant is selected for the Course. A recommendation letter from a teacher is essential for student applicants. Scanned copies of the duly signed documents sent by Email will also be accepted. Applications may be sent to:

Course Co-ordinator: Dr. R K Dwivedi, Associate Professor & Head, Department of Physics, Christ Church P G College, Kanpur 208 001 (UP). Contact Phone: 09936966543; Email: rkdwivedi@hotmail.com

Selected participants will be intimated by 08 July 2017.

Last Date for Receipt of Applications: 01 July 2017.

SCIENCE ACADEMIES' EDUCATION PROGRAMME

127 RC/AUGUST/2017

23 December 2016

EDUCATION
PANEL

Indian Academy of
Sciences

astian, K. L.
airman)
an, E.
hhawat, A. K.
krishnan, V.
ttopadhyay, Nitin
r, Deepak
unda, N.
thy, M.R.N.
hekrishnan, T. P.
garajan, Govindan
lapur, S.K.
karan, P.
eesh, S.K.
gupta, Pulak
ramaniam,
apurni

Indian National
Science Academy

ltaraj, P. K.
lloo, B.B.
udhuri, Probal
wami, J.N.

National
Academy of
Sciences, India
i, V.P.
ana, Paramjit
a, Gadadhar
I, J.P.

Contact Address
abaleswara, T.D.
Director
Refresher Courses &
Workshops
Indian Academy of
Sciences
No. 8005
Raman Avenue
Shivanagar P.O.
Bengaluru 560 080

Phone:
02266 1210
02266 1222
02361 6094

il:
ias.ernet.in

Christ Church College
Kanpur - 208 001

Sub: Refresher Course on "Experimental Physics" at Christ Church College,
Kanpur during 10-25 August 2017.

Dear Dr Dwivedi,

This has reference to your letter forwarding a proposal and budget for organizing a Refresher Course in Christ Church College, Kanpur. The Joint Science Education Panel of the three Academies will be happy to sponsor and support the Refresher Course. We note that Prof. C.S. Sundar (IGCAR, Kalpakkam) will be the Course Director and you will be the Course Coordinator.

- (a) Your budget of Rs 7,35,800/- for 34 participants (inclusive of **travel expenses/ boarding and lodging** for Resource Persons has been approved by the Science Education Panel. The approved amount is exclusive of host institution contribution Rs. 50,000/-. As per guidelines, boarding and lodging of resource persons including breakfast and dinner is Rs.1250/- per day and local transport is Rs.10000/- . Accordingly we have deducted the excess amount projected towards these heads in your budget. **Please note that extra expenditure from the sanctioned budget heads to be met by the host institution.**
- (b) Please note that only the names of Convener and Coordinator of the Workshop should be included in brochure/invitation etc. Names of members of the management, organizing committees, patrons etc should be strictly avoided.
- (c) As the Refresher Course is an all India one, it has to be advertised in our journals **RESONANCE** and **CURRENT SCIENCE** (copy of a typical announcement is attached). Please send us a draft of your announcement.
- (d) Applications should be submitted online through a link which will be available in our website. The Course Director and Coordinator will be provided a user-id/password to enable them to view the applications and make the selections.
- (e) Refresher Courses are sponsored and supported by the three National Science Academies - IASc, INSA and NASI. The names of INDIAN ACADEMY OF SCIENCES (BANGALORE), INDIAN NATIONAL SCIENCE ACADEMY (NEW DELHI) and THE NATIONAL ACADEMY OF SCIENCES, INDIA (ALLAHABAD) should therefore be mentioned in all publicity material such as programme sheet, invitation cards, etc.



Indian Academy
of Sciences,
Bangalore



Indian National
Science Academy,
New Delhi



The National Academy
of Sciences, India
Allahabad

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(f) The Course should be called "Science Academics' Refresher Course in "Experimental Physics".

(g) Please send 4-5 copies of the printed programme when ready.

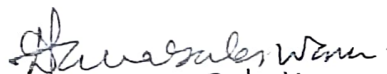
(o) Funds for organizing the Course can be sent as an advance by electronic transfer. This can be sent after a bank account is opened and the following details are provided to us:

1. Name of the Bank:
2. Name of the Branch:
3. Account No.:
4. Name of the Account Holder
(in the name of Refresher Course);
5. IFSC - code (for Non-SBI accounts)

If necessary, an authorization letter from the Academy to the bank to open the Savings Bank account can be sent to you after we hear from you.

Please go ahead with organizing the Course in consultation with Professor C.S. Sundar and keep in touch with the Academy about the progress.

Best wishes,


Yours sincerely, 23/12/16

T. D. Mahabaleswara
Coordinator (LW/RC), Science Education Panel

Science Academies Refresher course in Experimental Physics

Christ Church College, Kanpur (UP)

August 10-25, 2017

Registration August 10, 2017 @ 9-10 am

S. N.	Name	Affiliation	Signature
1.	Mudasir Malik	Central University of Kashmir	Mudasir Malik
2.	Nitin Kumar	NIT Mizoram	Nitin Kumar
3.	Dr. Satish Kumar	DEI, Agra	Dr. Satish Kumar
4.	Dr. Neeraj Sharma	DAV College, Lucknow	Dr. Neeraj Sharma
5.	Dr. Indu Verma	Islamia College, Lucknow	Dr. Indu Verma
6.	Dr. Nidhi Verma	DBPG College, Bachhravan	Dr. Nidhi Verma
7.	Dr. Vikram Singh	Agra College, Agra	Dr. Vikram Singh
8.	Dr. B. K. Sharma	Agra College, Agra	Dr. B. K. Sharma
9.	Dr. Jai Shankar	GDC Hempur, Pilibhit	Dr. Jai Shankar
10.	Dr. S. P. Singh	GDC, Mainpuri	Dr. S. P. Singh
11.	Dr. Yogendra Kumar	DBAGDC, Badaun	Dr. Yogendra Kumar
12.	Dr. Praveen Kumar	GGDC, Bareilly	Dr. Praveen Kumar
13.	Dr. Padam Singh	GDC, Unnao	Dr. Padam Singh
14.	Dr. Sangam Pasayat	Sonepur College, Orissa	Dr. Sangam Pasayat
15.	Dr. Devki Nandan Gupta	University of Delhi	Dr. Devki Nandan Gupta
16.	Dr. D. S. Gupta	Gorakhpur (S.K. NAGAR)	Dr. D. S. Gupta
17.	Mr. Kushagra Singh	KPM Degree College, Sitapur	Mr. Kushagra Singh
18.	Dr. Amit Kumar	KPMGGDC, Aurai, Bhadohi	Dr. Amit Kumar
19.	Dr. Prabal Pratap Singh	UIET, CSJMU, Kanpur	Dr. Prabal Pratap Singh
20.	Dr. Manoj Bhushan Pandey	VSSD College, Kanpur	Dr. Manoj Bhushan Pandey
21.	Ms. Priyanka Das	VSSD College, Kanpur	Ms. Priyanka Das
22.	Dr. Satish Chandra	PPN College, Kanpur	Dr. Satish Chandra
23.	Dr. Dharmendra Pandey	PPN College, Kanpur	Dr. Dharmendra Pandey
24.	Mr. Bhupendra Singh	Janta Degree College, Ghatampur	Mr. Bhupendra Singh
25.	Mr. Anupam Sachan	BNU Degree College, Jahanabad	Mr. Anupam Sachan
26.	Ms. Anuradha Tiwari	BND College, Kanpur	Ms. Anuradha Tiwari
27.	Mani Shankar Tiwari	IISER, Bhopal	Mani Shankar Tiwari
28.	Rishabh Porwal	Delhi University	Rishabh Porwal
29.	Mitesh Shukla	Christ Church College, Kanpur	Mitesh Shukla
30.	Mohd. Mubashir	Christ Church College, Kanpur	Mohd. Mubashir
31.	Ankit P. Anderson	Christ Church College, Kanpur	Ankit P. Anderson
32.	Harsh Kumar	Christ Church College, Kanpur	Harsh Kumar
33.	Vijay Bharti Rajput	K.K.D.C. College Etawah	Vijay Bharti Rajput
34.	Mohd. Yasir	Ch. Ch. Coll., Kanpur	Mohd. Yasir

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Science Academics Refresher course in Experimental Physics
Christ Church College, Kanpur (UP)
 August 10-25, 2017

List of Participants		Attendance		
S. N.	Name	11-08-17	12-08-17	13-08-17
1.	Mudasir Malik	Mudasir Malik	Mudasir Malik	Mudasir Malik
2.	Nitin Kumar	Nitin Kumar	Nitin Kumar	Nitin Kumar
3.	Dr. Satish Kumar	Dr. Satish Kumar	Dr. Satish Kumar	Dr. Satish Kumar
4.	Dr. Neeraj Sharma	Dr. Neeraj Sharma	Dr. Neeraj Sharma	Dr. Neeraj Sharma
5.	Dr. Indu Verma	Dr. Indu Verma	Dr. Indu Verma	Dr. Indu Verma
6.	Dr. Nidhi Verma	Dr. Nidhi Verma	Dr. Nidhi Verma	Dr. Nidhi Verma
7.	Dr. Vikram Singh	Dr. Vikram Singh	Dr. Vikram Singh	Dr. Vikram Singh
8.	Dr. B. K. Sharma	Dr. B. K. Sharma	Dr. B. K. Sharma	Dr. B. K. Sharma
9.	Dr. Jai Shankar	Dr. Jai Shankar	Dr. Jai Shankar	Dr. Jai Shankar
10.	Dr. S. P. Singh	Dr. S. P. Singh	Dr. S. P. Singh	Dr. S. P. Singh
11.	Dr. Yogendra Kumar	Dr. Yogendra Kumar	Dr. Yogendra Kumar	Dr. Yogendra Kumar
12.	Dr. Praveen Kumar	Dr. Praveen Kumar	Dr. Praveen Kumar	Dr. Praveen Kumar
13.	Dr. Padam Singh	Dr. Padam Singh	Dr. Padam Singh	Dr. Padam Singh
14.	Dr. Sangam Pasayat	Dr. Sangam Pasayat	Dr. Sangam Pasayat	Dr. Sangam Pasayat
15.	Dr. Devki Nandan Gupta	Dr. Devki Nandan Gupta	Dr. Devki Nandan Gupta	Dr. Devki Nandan Gupta
16.	Dr. D. S. Gupta	Dr. D. S. Gupta	Dr. D. S. Gupta	Dr. D. S. Gupta
17.	Ms. Vijay Bharti Rajpoot	Ms. Vijay Bharti Rajpoot	Ms. Vijay Bharti Rajpoot	Ms. Vijay Bharti Rajpoot
18.	Ms. Anuradha Tiwari	Ms. Anuradha Tiwari	Ms. Anuradha Tiwari	Ms. Anuradha Tiwari
19.	Mr. Kushagra Singh	Mr. Kushagra Singh	Mr. Kushagra Singh	Mr. Kushagra Singh
20.	Dr. Amit Kumar	Dr. Amit Kumar	Dr. Amit Kumar	Dr. Amit Kumar
21.	Dr. Prabal Pratap Singh	Dr. Prabal Pratap Singh	Dr. Prabal Pratap Singh	Dr. Prabal Pratap Singh
22.	Dr. Manoj Bhushan Pandey	Dr. Manoj Bhushan Pandey	Dr. Manoj Bhushan Pandey	Dr. Manoj Bhushan Pandey
23.	Ms. Priyanka Das	Ms. Priyanka Das	Ms. Priyanka Das	Ms. Priyanka Das
24.	Dr. Satish Chandra	Dr. Satish Chandra	Dr. Satish Chandra	Dr. Satish Chandra
25.	Dr. Dharmendra Pandey	Dr. Dharmendra Pandey	Dr. Dharmendra Pandey	Dr. Dharmendra Pandey
26.	Mr. Bhupendra Singh	Mr. Bhupendra Singh	Mr. Bhupendra Singh	Mr. Bhupendra Singh
27.	Mr. Anupam Sachan	Mr. Anupam Sachan	Mr. Anupam Sachan	Mr. Anupam Sachan
28.	Mani Mohan Tiwari	Mani Mohan Tiwari	Mani Mohan Tiwari	Mani Mohan Tiwari
29.	Rishabh Porwal	Rishabh Porwal	Rishabh Porwal	Rishabh Porwal
30.	Mitesh Shaky	Mitesh Shaky	Mitesh Shaky	Mitesh Shaky
31.	Mohd. Mubashir	Mohd. Mubashir	Mohd. Mubashir	Mohd. Mubashir
32.	Ankit P. Anderson	Ankit P. Anderson	Ankit P. Anderson	Ankit P. Anderson
33.	Harsh Kumar	Harsh Kumar	Harsh Kumar	Harsh Kumar
34.	Mohd. Yasir	Mohd. Yasir	Mohd. Yasir	Mohd. Yasir

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Science Academies Refresher course in Experimental Physics

Christ Church College, Kanpur (UP)

August 10-25, 2017

List of Participants

Attendance

S. N.	Name	14-08-17	16-08-17	17-08-17	18-08-17
11	1. Mudasir Malik	Mudasir Malik	Mudasir Malik	Mudasir Malik	Mudasir Malik
13	2. Nitin Kumar	Nitin Kumar	Nitin Kumar	Nitin Kumar	Nitin Kumar
3	3. Dr. Satish Kumar	Dr. Satish Kumar	Dr. Satish Kumar	Dr. Satish Kumar	Dr. Satish Kumar
8	4. Dr. Neeraj Sharma	Dr. Neeraj Sharma	Dr. Neeraj Sharma	Dr. Neeraj Sharma	Dr. Neeraj Sharma
3	5. Dr. Indu Verma	Dr. Indu Verma	Dr. Indu Verma	Dr. Indu Verma	Dr. Indu Verma
4	6. Dr. Nidhi Verma	Dr. Nidhi Verma	Dr. Nidhi Verma	Dr. Nidhi Verma	Dr. Nidhi Verma
6	7. Dr. Vikram Singh	Dr. Vikram Singh	Dr. Vikram Singh	Dr. Vikram Singh	Dr. Vikram Singh
8	8. Dr. B. K. Sharma	Dr. B. K. Sharma	Dr. B. K. Sharma	Dr. B. K. Sharma	Dr. B. K. Sharma
5	9. Dr. Jai Shankar	Dr. Jai Shankar	Dr. Jai Shankar	Dr. Jai Shankar	Dr. Jai Shankar
5	10. Dr. S. P. Singh	Dr. S. P. Singh	Dr. S. P. Singh	Dr. S. P. Singh	Dr. S. P. Singh
2	11. Dr. Yogendra Kumar	Dr. Yogendra Kumar	Dr. Yogendra Kumar	Dr. Yogendra Kumar	Dr. Yogendra Kumar
7	12. Dr. Praveen Kumar	Dr. Praveen Kumar	Dr. Praveen Kumar	Dr. Praveen Kumar	Dr. Praveen Kumar
8	13. Dr. Padam Singh	Dr. Padam Singh	Dr. Padam Singh	Dr. Padam Singh	Dr. Padam Singh
9	14. Dr. Sangam Pasayat	Dr. Sangam Pasayat	Dr. Sangam Pasayat	Dr. Sangam Pasayat	Dr. Sangam Pasayat
10	15. Dr. Devki Nandan Gupta	Dr. Devki Nandan Gupta	Dr. Devki Nandan Gupta	Dr. Devki Nandan Gupta	Dr. Devki Nandan Gupta
2	16. Dr. D. S. Gupta	Dr. D. S. Gupta	Dr. D. S. Gupta	Dr. D. S. Gupta	Dr. D. S. Gupta
10	17. Ms. Vijay Bharti Rajpoot	Ms. Vijay Bharti Rajpoot	Ms. Vijay Bharti Rajpoot	Ms. Vijay Bharti Rajpoot	Ms. Vijay Bharti Rajpoot
3	18. Ms. Anuradha Tiwari	Ms. Anuradha Tiwari	Ms. Anuradha Tiwari	Ms. Anuradha Tiwari	Ms. Anuradha Tiwari
12	19. Mr. Kushagra Singh	Mr. Kushagra Singh	Mr. Kushagra Singh	Mr. Kushagra Singh	Mr. Kushagra Singh
11	20. Dr. Amit Kumar	Dr. Amit Kumar	Dr. Amit Kumar	Dr. Amit Kumar	Dr. Amit Kumar
12	21. Dr. Prabal Pratap Singh	Dr. Prabal Pratap Singh	Dr. Prabal Pratap Singh	Dr. Prabal Pratap Singh	Dr. Prabal Pratap Singh
13	22. Dr. Manoj Bhushan Pandey	Dr. Manoj Bhushan Pandey	Dr. Manoj Bhushan Pandey	Dr. Manoj Bhushan Pandey	Dr. Manoj Bhushan Pandey
4	23. Ms. Priyanka Das	Ms. Priyanka Das	Ms. Priyanka Das	Ms. Priyanka Das	Ms. Priyanka Das
4	24. Dr. Satish Chandra	Dr. Satish Chandra	Dr. Satish Chandra	Dr. Satish Chandra	Dr. Satish Chandra
5	25. Dr. Dharmendra Pandey	Dr. Dharmendra Pandey	Dr. Dharmendra Pandey	Dr. Dharmendra Pandey	Dr. Dharmendra Pandey
15	26. Mr. Bhupendra Singh	Mr. Bhupendra Singh	Mr. Bhupendra Singh	Mr. Bhupendra Singh	Mr. Bhupendra Singh
17	27. Mr. Anupam Sachan	Mr. Anupam Sachan	Mr. Anupam Sachan	Mr. Anupam Sachan	Mr. Anupam Sachan
15	28. Mani Mohan Tiwari	Mani Mohan Tiwari	Mani Mohan Tiwari	Mani Mohan Tiwari	Mani Mohan Tiwari
16	29. Rishabh Porwal	Rishabh Porwal	Rishabh Porwal	Rishabh Porwal	Rishabh Porwal
9	30. Mitesh Shakya	Mitesh Shakya	Mitesh Shakya	Mitesh Shakya	Mitesh Shakya
17	31. Mohd. Mubashir	Mohd. Mubashir	Mohd. Mubashir	Mohd. Mubashir	Mohd. Mubashir
1	32. Ankit P. Anderson	Ankit P. Anderson	Ankit P. Anderson	Ankit P. Anderson	Ankit P. Anderson
7	33. Harsh Kumar	Harsh Kumar	Harsh Kumar	Harsh Kumar	Harsh Kumar
14	34. Mohd. Yasir	Mohd. Yasir	Mohd. Yasir	Mohd. Yasir	Mohd. Yasir

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Science Academies Refresher course in Experimental Physics

Christ Church College, Kanpur (UP)

August 10-25, 2017

List of Participants

Attendance

S. N.	Name	19-08-17	21-08-17	22-08-17	23-08-17
1.	Mudasir Malik	Mudasir Malik	Mudasir Malik	Mudasir Malik	Mudasir Malik
2.	Nitin Kumar	Nitin Kumar	Nitin Kumar	Nitin Kumar	Nitin Kumar
3.	Dr. Satish Kumar	Dr. Satish Kumar	Dr. Satish Kumar	Dr. Satish Kumar	Dr. Satish Kumar
4.	Dr. Neeraj Sharma	Dr. Neeraj Sharma	Dr. Neeraj Sharma	Dr. Neeraj Sharma	Dr. Neeraj Sharma
5.	Dr. Indu Verma	Dr. Indu Verma	Dr. Indu Verma	Dr. Indu Verma	Dr. Indu Verma
6.	Dr. Nidhi Verma	Dr. Nidhi Verma	Dr. Nidhi Verma	Dr. Nidhi Verma	Dr. Nidhi Verma
7.	Dr. Vikram Singh	Dr. Vikram Singh	Dr. Vikram Singh	Dr. Vikram Singh	Dr. Vikram Singh
8.	Dr. B. K. Sharma	Dr. B. K. Sharma	Dr. B. K. Sharma	Dr. B. K. Sharma	Dr. B. K. Sharma
9.	Dr. Jai Shankar	Dr. Jai Shankar	Dr. Jai Shankar	Dr. Jai Shankar	Dr. Jai Shankar
10.	Dr. S. P. Singh	Dr. S. P. Singh	Dr. S. P. Singh	Dr. S. P. Singh	Dr. S. P. Singh
11.	Dr. Yogendra Kumar	Dr. Yogendra Kumar	Dr. Yogendra Kumar	Dr. Yogendra Kumar	Dr. Yogendra Kumar
12.	Dr. Praveen Kumar	Dr. Praveen Kumar	Dr. Praveen Kumar	Dr. Praveen Kumar	Dr. Praveen Kumar
13.	Dr. Padam Singh	Dr. Padam Singh	Dr. Padam Singh	Dr. Padam Singh	Dr. Padam Singh
14.	Dr. Sangam Pasayat	Dr. Sangam Pasayat	Dr. Sangam Pasayat	Dr. Sangam Pasayat	Dr. Sangam Pasayat
15.	Dr. Devki Nandan Gupta	Dr. Devki Nandan Gupta	Dr. Devki Nandan Gupta	Dr. Devki Nandan Gupta	Dr. Devki Nandan Gupta
16.	Dr. D. S. Gupta	Dr. D. S. Gupta	Dr. D. S. Gupta	Dr. D. S. Gupta	Dr. D. S. Gupta
17.	Ms. Vijay Bharti Rajpoot	Ms. Vijay Bharti Rajpoot	Ms. Vijay Bharti Rajpoot	Ms. Vijay Bharti Rajpoot	Ms. Vijay Bharti Rajpoot
18.	Ms. Anuradha Tiwari	Ms. Anuradha Tiwari	Ms. Anuradha Tiwari	Ms. Anuradha Tiwari	Ms. Anuradha Tiwari
19.	Mr. Kushagra Singh	Mr. Kushagra Singh	Mr. Kushagra Singh	Mr. Kushagra Singh	Mr. Kushagra Singh
20.	Dr. Amit Kumar	Dr. Amit Kumar	Dr. Amit Kumar	Dr. Amit Kumar	Dr. Amit Kumar
21.	Dr. Prabal Pratap Singh	Dr. Prabal Pratap Singh	Dr. Prabal Pratap Singh	Dr. Prabal Pratap Singh	Dr. Prabal Pratap Singh
22.	Dr. Manoj Bhushan Pandey	Dr. Manoj Bhushan Pandey	Dr. Manoj Bhushan Pandey	Dr. Manoj Bhushan Pandey	Dr. Manoj Bhushan Pandey
23.	Ms. Priyanka Das	Ms. Priyanka Das	Ms. Priyanka Das	Ms. Priyanka Das	Ms. Priyanka Das
24.	Dr. Satish Chandra	Dr. Satish Chandra	Dr. Satish Chandra	Dr. Satish Chandra	Dr. Satish Chandra
25.	Dr. Dharmendra Pandey	Dr. Dharmendra Pandey	Dr. Dharmendra Pandey	Dr. Dharmendra Pandey	Dr. Dharmendra Pandey
26.	Mr. Bhupendra Singh	Mr. Bhupendra Singh	Mr. Bhupendra Singh	Mr. Bhupendra Singh	Mr. Bhupendra Singh
27.	Mr. Anupam Sachan	Mr. Anupam Sachan	Mr. Anupam Sachan	Mr. Anupam Sachan	Mr. Anupam Sachan
28.	Mani Mohan Tiwari	Mani Mohan Tiwari	Mani Mohan Tiwari	Mani Mohan Tiwari	Mani Mohan Tiwari
29.	Rishabh Porwal	Rishabh Porwal	Rishabh Porwal	Rishabh Porwal	Rishabh Porwal
30.	Mitesh Shakya	Mitesh Shakya	Mitesh Shakya	Mitesh Shakya	Mitesh Shakya
31.	Mohd. Mubashir	Mohd. Mubashir	Mohd. Mubashir	Mohd. Mubashir	Mohd. Mubashir
32.	Ankit P. Anderson	Ankit P. Anderson	Ankit P. Anderson	Ankit P. Anderson	Ankit P. Anderson
33.	Harsh Kumar	Harsh Kumar	Harsh Kumar	Harsh Kumar	Harsh Kumar
34.	Mohd. Yasir	Mohd. Yasir	Mohd. Yasir	Mohd. Yasir	Mohd. Yasir

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Science Academies Refresher course in Experimental Physics

Christ Church College, Kanpur (UP)

August 10-25, 2017

List of Participants

Attendance

S. N.	Name	24-08-17	25-08-17	
1.	Mudasir Malik	Mudasir Malik	✓	
2.	Nitin Kumar	Nitin Kumar	✓	
3.	Dr. Satish Kumar	Dr. Satish Kumar	✓	
4.	Dr. Neeraj Sharma	Dr. Neeraj Sharma	✓	
5.	Dr. Indu Verma	Dr. Indu Verma	✓	
6.	Dr. Nidhi Verma	Dr. Nidhi Verma	✓	
7.	Dr. Vikram Singh	Dr. Vikram Singh	✓	
8.	Dr. B. K. Sharma	Dr. B. K. Sharma	✓	
9.	Dr. Jai Shankar	Dr. Jai Shankar	✓	
10.	Dr. S. P. Singh	Dr. S. P. Singh	✓	
11.	Dr. Yogendra Kumar	Dr. Yogendra Kumar	✓	
12.	Dr. Praveen Kumar	Dr. Praveen Kumar	✓	
13.	Dr. Padam Singh	Dr. Padam Singh	✓	
14.	Dr. Sangam Pasayat	Dr. Sangam Pasayat	✓	
15.	Dr. Devki Nandan Gupta	Dr. Devki Nandan Gupta	✓	
16.	Dr. D. S. Gupta	Dr. D. S. Gupta	✓	
17.	Ms. Vijay Bharti Rajpoot	Ms. Vijay Bharti Rajpoot	✓	
18.	Ms. Anuradha Tiwari	Ms. Anuradha Tiwari	✓	
19.	Mr. Kushagra Singh	Mr. Kushagra Singh	✓	
20.	Dr. Amit Kumar	Dr. Amit Kumar	✓	
21.	Dr. Prabal Pratap Singh	Dr. Prabal Pratap Singh	✓	
22.	Dr. Manoj Bhushan Pandey	Dr. Manoj Bhushan Pandey	✓	
23.	Ms. Priyanka Das	Ms. Priyanka Das	✓	
24.	Dr. Satish Chandra	Dr. Satish Chandra	✓	
25.	Dr. Dharmendra Pandey	Dr. Dharmendra Pandey	✓	
26.	Mr. Bhupendra Singh	Mr. Bhupendra Singh	✓	
27.	Mr. Anupam Sachan	Mr. Anupam Sachan	✓	
28.	Mani Mohan Tiwari	Mani Mohan Tiwari	✓	
29.	Rishabh Porwal	Rishabh Porwal	✓	
30.	Mitesh Shakya	Mitesh Shakya	✓	
31.	Mohd. Mubashir	Mohd. Mubashir	✓	
32.	Ankit P. Anderson	Ankit P. Anderson	✓	
33.	Harsh Kumar	Harsh Kumar	✓	
34.	Mohd. Yasir	Mohd. Yasir	✓	

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SCIENCE ACADEMIES' 89th REFRESHER COURSE IN EXPERIMENTAL PHYSICS DEPARTMENT OF PHYSICS, CHRIST CHURCH COLLEGE, KANPUR

Report

89th Refresher Course in Experimental Physics sponsored by three Science Academies of our country Indian Academy of Sciences, Bangalore; Indian National Science Academy, Delhi and National Academy of Sciences, India, Allahabad was organized by Department of Physics, Christ Church College, Kanpur from August 10-25, 2017. These national level courses are aimed at bringing physics faculty from all over the country together and provide them an opportunity to have hands on experience in doing innovative experiments from all branches of physics. These refresher courses in experimental physics have been organised at several places all over India by Professor R. Srinivasan, however, it is for the second time in the state of Uttar Pradesh the course is organised at our college.

The course was inaugurated by the **Chief Guest Professor J. V. Vaishampayan, Hon'ble Vice-Chancellor, C. S. J. M. University, Kanpur** on August 10, 2017 at 10 am. It started with lighting of lamp by him and other guests. **Dr. R. K. Gupta, Principal**, welcomed all guests and participants. **Dr. R. K. Dwivedi, HOD Physics & Course Coordinator** introduced the audience about the college, physics department and refresher course. **The Guest of Honour and Course Director Dr. C. S. Sundar** explained the objective of the refresher course and the history behind it. The vice chancellor congratulated the college department of Physics for organizing such a unique course in Kanpur. The inaugural function was presided over by **Dr. P. E. Deen, Secretary, College Governing Body**. He emphasized the role of experiments for better understanding of the subject. The inaugural function was followed by a High Tea.

34 participants from different states comprising of teachers, research scholars and graduate students have taken part in this course with great interest and enthusiasm. These participants were selected out of more than 100 applications received by us from all over the country. The course started after the high tea with four lectures based on experiments by the resource persons. All the participants of the course were provided a detailed manual about all the experiments so that they come prepared with the theory of all the experiments and participate actively in the discussion. The first four days were allotted to the lectures by the resource persons on experiments to all the participants. At the end of fourth day the participants were grouped in 17 pairs. After that, each day of the course consisted of a lecture based on new experiments by Dr. C. S. Sundar or a special lecture or a discussion session or presentation by the participants followed by performing of two sets of experiments and computer based analysis of the experimental data by each pair of participants in rotation. All the participants of the course performed 22 experiments in the area of thermal physics, mechanics, electricity and magnetism, semiconductor physics and electronics using the low cost kit developed by the academy with great interest. The student participants were very much excited to get this rare chance of performing new experiments.

Three special lectures were also delivered during the course by eminent academicians from Indian Institute of Technology, Kanpur. **Professor Asima Pradhan** in her lecture entitled "**Label Free Fluorescence Based Diagnostics of Early Cancer**" enumerated laser induced fluorescence (LIF) spectroscopy as a technique for the early detection of cancer. She explained how LIF is used to distinguish premalignant, malignant from normal tissues in a variety of organ systems such as breast, colon, cervix, esophagus etc. **Professor Anjan K. Gupta** in his lecture entitled "**Probing Electronic Inhomogeneities in Graphene using STM**" discussed about the basic principles of

scanning tunneling microscopy. He explained how the electronic, magnetic, optical and various other properties of surfaces can be investigated using the techniques of scanning probe microscopy. In the third lecture entitled "*Metamaterials: A New Paradigm for Electromagnetism*", Professor S. Anantha Ramakrishna introduced the audience about the new type of artificially designed negative refractive index materials called Metamaterials and its future applications. All the three lectures were very interactive and well appreciated by the participants of the refresher course.

An excursion trip was organized on Sunday, August 20, 2017. We all visited JK temple, Kanpur University campus, Sai Dham, ISCON temple and historical places Nana Rao Smarak Park, Maharishi Valmiki Ashram, Lav Kush Ashram, Bramhavarta Ghat, Bhramha Khuntee at Bithoor. All the resource persons and participants enjoyed the whole day trip.

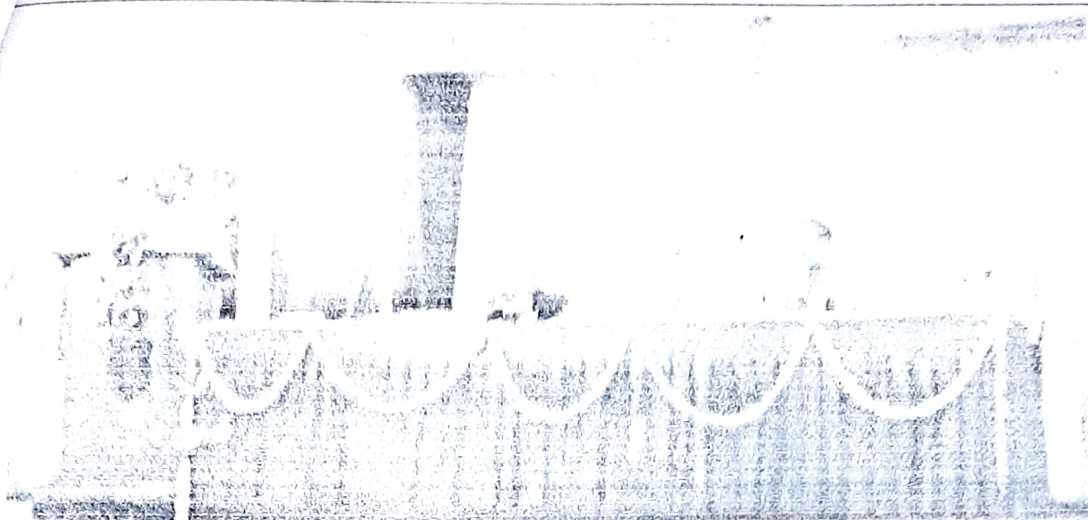
The valedictory function was presided over by Professor Vinay Kumar Pathak, Hon'ble Vice Chancellor, Dr. A. P. J. Abdul Kalam Technical University, Lucknow and Barecourt Butler Technical University, Kanpur. He congratulated all the academics for taking up such an important task of training teachers and students using a low cost kit developed by the academy. He stressed on the need of organizing experimental physics workshops for engineering college teachers also so as to help them to understand their engineering stream in better way. In this session the teachers/students in their feedback opined that they were largely benefited by this refresher course as they got a unique opportunity to have hands-on experience on several new experiments. The participants felt that all these experiments should be inducted in the university curriculum. Dr. C. S. Sundar gave his valuable comments and remarks about the course and handed over an Experimental Physics Kit as a gift to the Principal of our college. At the end all the participants were distributed a **Certificate of successful participation in the course**, a memento and Two books (Nanoscience and Nanotechnology: Fundamentals to Frontiers by MSR Rao and Quantum Mechanics by HC Verma) by Hon'ble Vice Chancellor, Course Director, Principal and Course Coordinator. This workshop provided the experience of performing high precision, low cost experiments including some of the equipments that can be used at the research level in only two weeks. Such workshops provide a great opportunity for teachers and students to interact with each other and develop a platform for sharing of ideas.

A team of teachers from Christ Church College, Kanpur namely Dr. R. K. Dwivedi, Mr. R. P. Mahalwala, Dr. S. P. Singh and Dr. Manish Kapoor worked for the success of the course. Dr. R. K. Gupta, Officiating Principal of our college was very actively involved in all stages of organizing of this course. Dr. Pervez E. Deen, Secretary, College Governing Body encouraged us throughout and provided all the infrastructural support with all enthusiasm for the better conduct of the course at our college.

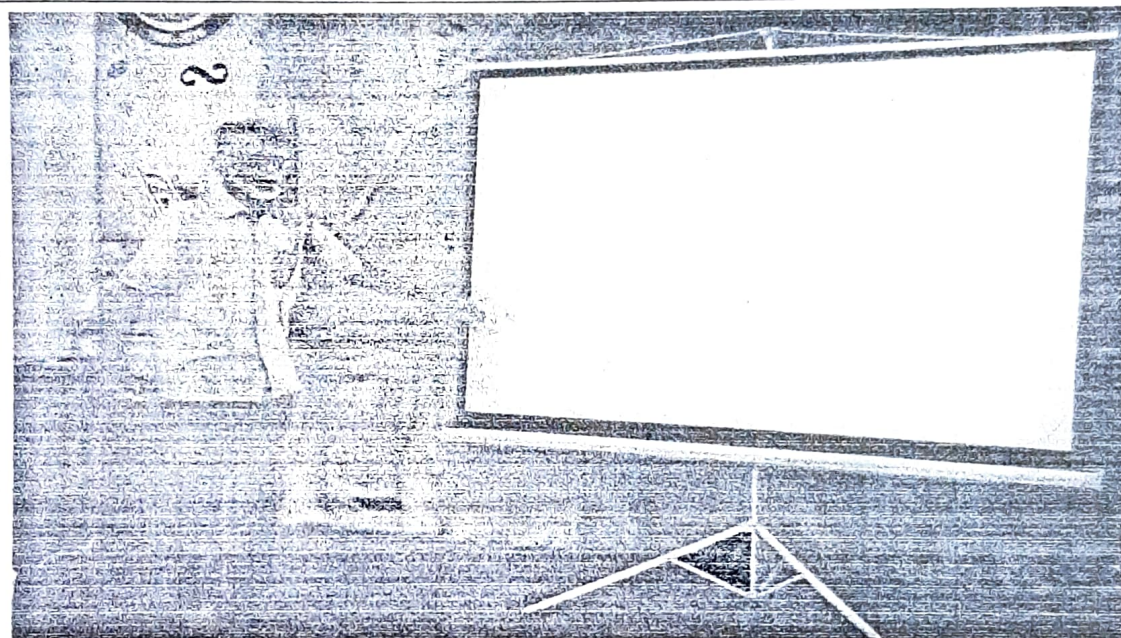
I wish to express my gratitude and sincere regards and respects to Professor R. Srinivasan Sir for giving us a opportunity to successfully conduct another course at our college. I acknowledge with thanks the help and support of Dr. T. D. Mahabaleshwara and his team at IASc time to time. I thank all the three academies and my college for providing necessary financial support for the course.



Dr. R. K. Dwivedi
Course Coordinator &
Head, Department of Physics
Christ Church College, Kanpur



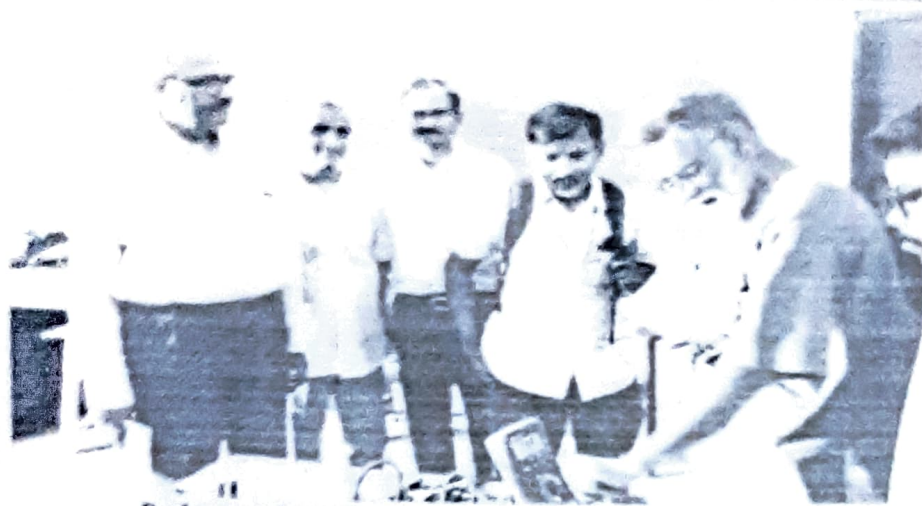
Inaugural Function on 10-08-17: Chief Guest Professor J. V. Vaishampayan, Hon'ble Vice Chancellor, CSJM University, Kanpur; Guest of Honour Dr. CS Sundar, Dr. PE Deen, Secretary College Governing Body and Principal Dr. RK Gupta



Dr. C. S. Sundar delivering lecture to the participants of the course



Prof. Asima Pradhan visiting the lab after delivering special lecture



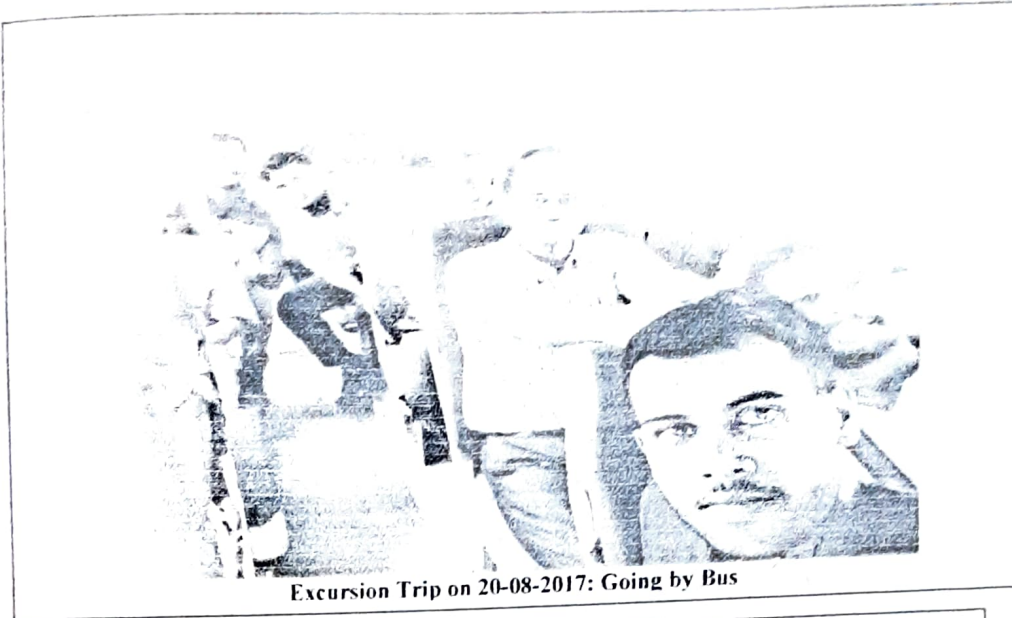
Professor Anjan K. Gupta visiting the lab after delivering special lecture



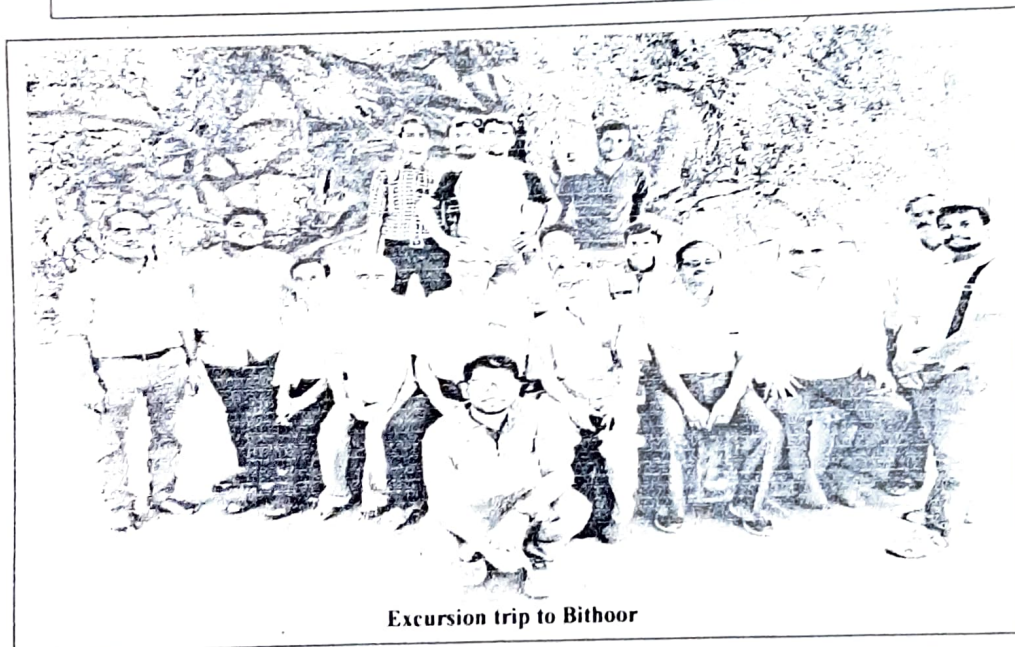
Dr. RK Dwivedi and Dr. CS Sundar presenting a memento to Professor S. A. Ramakrishna after the special lecture



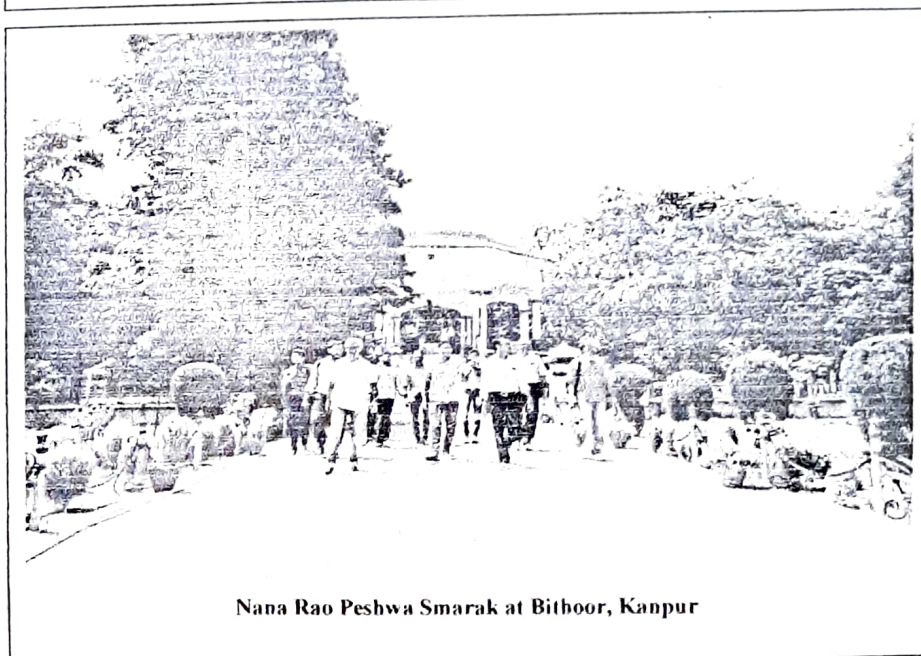
Group Photograph of the Participants



Excursion Trip on 20-08-2017: Going by Bus



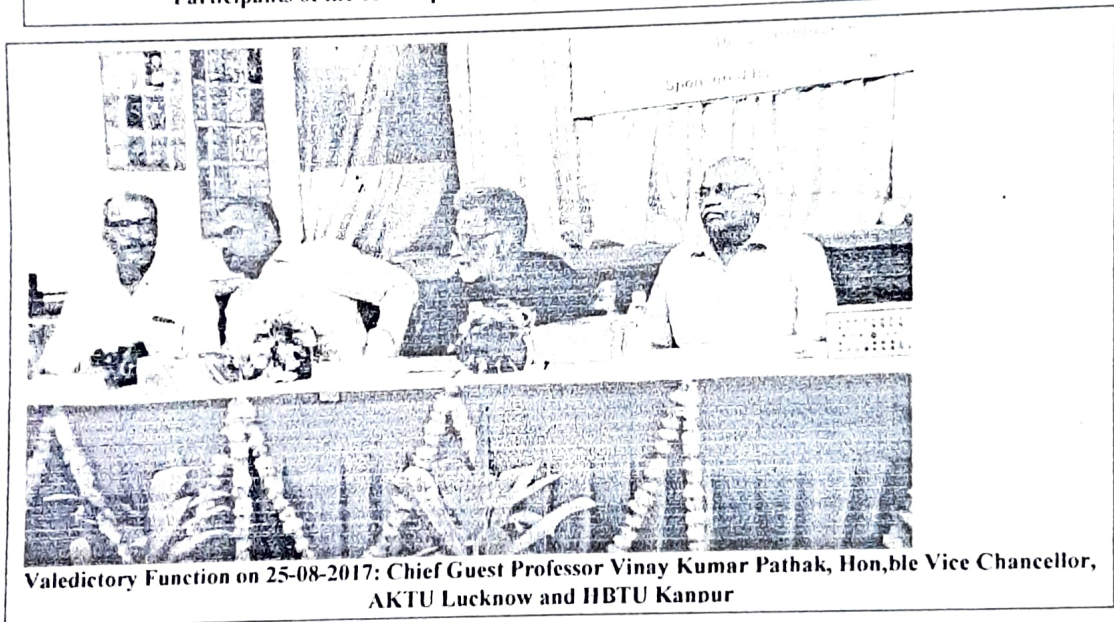
Excursion trip to Bithoor



Nana Rao Peshwa Smarak at Bithoor, Kanpur



Participants of the course performing experiments in the lab



Valedictory Function on 25-08-2017: Chief Guest Professor Vinay Kumar Pathak, Hon,ble Vice Chancellor, AKTU Lucknow and IIBTU Kanpur



Distribution of Certificate of participation, Memento and Books to all the participants

SCIENCE ACADEMIES' REFRESHER COURSE IN EXPERIMENTAL PHYSICS
(August 10 to 25, 2017)

at
DEPARTMENT OF PHYSICS, CHRIST CHURCH COLLEGE, KANPUR

Sponsored by
INDIAN ACADEMY OF SCIENCES, BANGALORE
INDIAN NATIONAL SCIENCE ACADEMY, DELHI
NATIONAL ACADEMY OF SCIENCES, INDIA, ALLAHABAD

&
CHRIST CHURCH COLLEGE, KANPUR

TIME TABLE

REGISTRATION: 10 August 2017: 9-30 to 10-00 am

Day and date	9-30 to 10-00 Hrs	10-00 to 11-30 Hrs	11-45 to 12-45	14-00 to 15-00 Hrs	15-15 to 16-15 Hrs	16-15 to 17-15 Hrs
Thursday 10 August 2017	Registration	Inauguration	MK-1	SPS-1	RKD-1	RPM-1
	9-30 to 10-30 Hrs	10-45 to 11-45 Hrs	11-45 to 12-45 Hrs	14-00 to 15-00 Hrs	15-15 to 16-15 Hrs	16-15 to 17-15 Hrs
Friday 11 August 2017	RKD-2	SPS-2	RPM-2	MK-2	RKD-3	SPS-3
Saturday 12 August 2017	CSS-1	RKD-4	MK-3	RKD-5	SPS-4	RPM-3
Sunday 13 August 2017	CSS-2	MK-4	RPM-4	MK-5	CSS-3	SPS-5
Monday 14 August 2017	CSS-4	LABORATORY		LABORATORY		
Tuesday 15 August 2017	HOLIDAY (Independence Day)					
Wednesday 16 August 2017	CSS-5	LABORATORY		LABORATORY		
Thursday 17 August 2017	CSS-6	LABORATORY		LABORATORY		

Day & Date	9-30 to 10-30 Hrs	10-45 to 13-00 Hrs	14 to 17-15 Hrs
Friday 18 August 2017	SPL-1	LABORATORY	LABORATORY
Saturday 19 August 2017	SPL-2	LABORATORY	LABORATORY
Sunday 20 August 2017	Excursion Trip to CSJM University, IIT Kanpur and Bithoor		
Monday 21 August 2017	SPL-3	LABORATORY	LABORATORY
Tuesday 22 August 2017	Presentation by participants	LABORATORY	LABORATORY
Wednesday 23 August 2017	Presentation by participants	LABORATORY	LABORATORY
Thursday 24 August 2017	Presentation by participants	LABORATORY	LABORATORY (Repeat Session)
Friday 25 August 2017	Discussion	VALEDICTORY	

LUNCH 13-14 HRS

COFFEE/TEA BREAK

10-30 TO 10-45 HRS
(Except on 10 August)
15-00 TO 15-15 HRS

Lectures by Resource Persons

Resource Person	S. N.	Lecture Title	Lectures
Dr. M. Kapoor [MK]	1.	Signal generator and Power amplifier	MK-1
	2.	Young's Modulus of a bar by Flexural Vibrations	MK-2
	3.	Rigidity Modulus of a brass wire	MK-3
	4.	Calibration of Silicon diode and Copper constantan thermocouple as a temperature sensor	MK-4
	5.	Stefan's constant of radiation	MK-5
Dr. S. P. Singh [SPS]	6.	Capacitance meter – Principle of operation and verification of law of addition of capacitances.	SPS-1
	7.	Dielectric constant of Cyclohexane and dipole moment of acetone	SPS-2
	8.	Inversion temperature of Fe-Cu thermocouple	SPS-3
	9.	Thermal relaxation of a serial light bulb	SPS-4
	10.	Verification of Curie Weiss law for a ceramic capacitor	SPS-5
Mr. R. P. Mahalwala [RPM]	11.	AC Experiments	RPM-1
	12.	AC Bridges	RPM-2
	13.	Passive Filters	RPM-3
	14.	High Resistance by leakage & k/e of a transistor	RPM-4
Dr. R. K. Dwivedi [RKD]	15.	Constant current source and DC differential amplifier	RKD-1
	16.	Thermal and electrical conductivity of copper and Thermal conductivity of a poor conductor	RKD-2
	17.	TCR of copper and Energy bandgap of silicon	RKD-3
	18.	Thermal diffusivity of brass	RKD-4
	19.	B-H curve using an integrator	RKD-5
Dr. C. S. Sundar [CSS]	20.	Phase sensitive detection and calibration of a lock in amplifier	CSS-1
	21.	Measurement of mutual inductance and low resistance with a lock in amplifier	CSS-2
	22.	Phase transitions	CSS-3
	23.	Martensite to Austenite phase transformation in a shape memory alloy	CSS-4
	24.	Non-linear dynamics – Feigenbaum circuit	CSS-5
	25.	Non-linear dynamics – Chua circuit	CSS-6

Special lectures will be delivered by Prof. Asima Pradhan, Prof. Anjan K. Gupta and Prof. S. Anantha Ramakrishna from IIT Kanpur.

LIST OF EXPERIMENTS

1. Young's Modulus and Rigidity Modulus of brass.
2. Stefan's Constant of Radiation and High resistance by Leakage
3. Thermal Conductivity and Electrical Conductivity of Copper, Thermal Conductivity of a Poor Conductor and k/e using a Transistor.
4. Thermal Diffusivity of Brass
5. Calibration of a Silicon Diode and Cu-Constantan Thermocouple against Pt Resistance Thermometer.
6. TCR of Copper and Energy band gap of Silicon using a Diode.
7. AC Experiments
8. Passive Filters
9. AC Bridges
10. Dielectric Constant of Cyclohexane and Dipole Moment of Acetone.
11. Verification of Curie-Weiss law using a Ceramic Capacitor
12. Thermal Relaxation of a Serial light bulb
13. B-H curve using an Integrator
14. Lock in amplifier: Calibration, Measurement of Mutual Inductance and Low Resistance
15. Inversion Temperature of Fe-Cu Thermocouple
16. Phase Transition in Shape Memory Alloy
17. Non-linear Dynamics : Feigenbaum and Chua circuits

List of Participants

S. N.	Name	Affiliation
1.	Dr. Indu Verma	Islamia Degree College Lalbagh, Lucknow
2.	Dr. Nidhi Verma	Dayanand Bachhrawan P. G. College, Bachhrawan, Raibarelli
3.	Dr. Vikram Singh	Agra College, Agra
4.	Dr. B. K. Sharma	Agra College, Agra
5.	Dr. Jai Shanker	Department of Physics, Government Degree College Hemptur, Bisalpur, Pilibhit

6.	Dr. Surendra Pratap Singh	Dr. B. R. Ambedkar Govt. Degree College, Mainpuri (UP)
7.	Dr. Devki Nandan Gupta	Department of Physics and Astrophysics, University of Delhi, Delhi- 100 007
8.	Dr. Yogendra Kumar	D. R. A. Government Degree College, Bisauli, Badaun (UP)
9.	Dr. Padam Singh	Government Degree College, Unnao
10	Dr. Daya Shankar Gupta	Shivam College and Computer Institute Nathnagar, S. K. Nagar (UP)
11	Mr. Satish Kumar	Dayalbagh Educational Institute, Dayalbagh, Agra
12	Mr. Neeraj Sharma	D. A. V. P. G. College, Lucknow
13	Mr. Praveen Kumar	V. R. A. L. Govt. Girls Degree College, Bareilly
14	Mr. Sangam Pasayat	Sonepur College, Sonepur (Orissa)
15	Ms. Vijay Bharti Rajput	Lucknow University, Lucknow
16	Ms. Anuradha Tiwari	B. N. D. College, Kanpur
17	Mr. Kushagra Singh	K. P. M. Degree College, Sitapur
18	Mr. Amit Kumar	K. P. M. Govt, Girls P. G. College, Aurai, Bhadohi
19	Ms. Priyanka Das	V. S. S. D. College, Kanpur
20	Mr. Bhoopendra Singh	Capt. S. S. S. J. M. V. Ghatampur, Kanpur
21	Mr. Anupam Sachan	B. N. U. Mahavidyalaya, Jahanabad, Fatehpur
22	Dr. Prabal Pratap Singh	U. I. E. T. , C. S. J. M. University, Kanpur
23	Dr. Satish Chandra	P. P. N. P. G. College, Kanpur
24	Dr. Dharmendra Pandey	P. P. N. P. G. College, Kanpur
25	Dr. Manoj Bhushan Pandey	V. S. S. D. College, Kanpur
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