The Refresher Course in Theoretical Physics was organized by the Indian Academy of Sciences in association with Bishop Moore College, Mavelikara, Kerala from November 6 – 18, 2000.

**A Brief Report**

1. **Introduction**

   This Refresher Course is the third one arranged by the Academy since this programme was initiated in late 1999. It was held in association with, and organizational assistance from, Bishop Moore College in Kerala.

   Announcements of the Course were made in Resonance (June 2000 issue) and Current Science (May 2000 issue). Interested teachers from all parts of the country were invited to apply before the last date of 31 July 2000. A copy of the announcement giving names of the four principal resource persons and broad choice of topics is given in Annexure A.

2. **Selection procedure etc.**

   The total number of applications received by the last date of 31 July 2000 was 73. Three of the resource persons – S. Chaturvedi, R. Simon, N. Mukunda – met at the Academy on 8.8.2000, scrutinized all the applications, and selected 33 applicants on an all-India basis in the first instance, with a waiting list of 13 applicants. Letters of invitation to the selected applicants were sent on 16.8.2000. After receiving responses and some who declined, an additional 10 letters of invitation were sent on 15.9.2000.

   The final number of participants selected by the Academy was 43. In addition the local hosts, Bishop Moore College, invited several teachers and students to attend the course.

   The number of participants who actually attended the course was 25. In addition many M.Sc. students and several teachers attended the lectures on almost all days.

3. **Programme of course etc.**

   The Annexure B gives the daily schedule of lectures, problem sessions, course titles and speakers. Equal time – 3 hours - was devoted each day to formal lectures in the morning session and to problem solving sessions in the afternoon.

   The limitation to only 4 speakers, each giving 9 hours of lectures on a chosen topic with equal time used for problem sessions, was academically a good success. The seriousness of the entire effort was appreciated by all the participants. The Resource persons worked extremely well together in a coordinated manner.

   Relevant books worth up to Rs.700/- were gifted to each participant.
4. Local arrangements etc.

The venue of the Course – at Pazhakulam about 25 kms away from Mavelikara – was ideal, a rural peaceful self-contained campus encouraging enormous interactions among all those present, participants and Resource persons. The arrangements for stay and boarding were simple, clean and adequate. The College authorities and the local staff looked after all details with enormous attention and friendly hospitality.

An excellent full day boat cruise in the Kerala backwaters was arranged on 12.11.2000 and a special reception was arranged at the College on 16.11.2000.

5. Feedback from participants – some points

The overall impression among participants was that the Academy Refresher Course was very useful and much better than the ones conducted by UGC and Academy Staff Colleges. The lectures were considered excellent and the duration just adequate. The discussion sessions were quite useful so much so that some felt that more time should have been made available for discussions. A few felt that detailed syllabus, lecture notes and problem sets should be made available well in advance to help teachers to study and come prepared with doubts and clarifications. If the Course had been held in an academic institution more reference books would have been available. Some felt that the teacher-participants themselves should be encouraged to teach at these Courses while one felt that the Course should be restricted to two topics rather than four. There was also a suggestion that the lectures should be videoed for archives.

The venue of the Course and the serene ambience were appreciated by all participants as was the catering and lodging facilities. Such Courses should be organized at more regular intervals. There was some complaint that the teachers found it difficult to get permission from College authorities for participation and that the Academy’s direct help would have simplified matters.

6. Estimate of expenses

The approximate cost of running this course is given in Annexure C. The total is quite modest, and compared to the response from the participants, it has been a very worthwhile activity for the Academy.

7. Concluding remarks

The whole hearted co-operation received from Bishop Moore College was an essential factor in the success of this Course. The Science Education Panel of the Academy may like to plan other Courses working with the College, in subject areas of mutual interest.

The degree of motivation of the participants was extremely gratifying. On all working days groups of participants spent many hours upto and even beyond midnight discussing the lecture material and working on problems.

This experience indicates that there is a real need for such Refresher Courses organized and run in a manner that maximises interactions and contacts. The general all-India character of the selected participants should always be maintained.
There were some cases where selected participants faced difficulties in obtaining formal permission from their authorities to attend the Course. Unfortunately it seems there is little that the Academy can do to help in this matter.

All the participants were given formal certificates jointly signed by the Principal of Bishop Moore College and the Director of the Course.
Refresher Course in Theoretical Physics
sponsored by
Indian Academy of Sciences
at
Bishop Moore College, Mavelikara, Kerala

Dates, Courses and Tentative Schedule

<table>
<thead>
<tr>
<th>Courses</th>
<th>First week (6-11 November 2000)</th>
<th>Lecturer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermodynamics and Statistical Physics</td>
<td>Prof. S. Chaturvedi,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Univ. of Hyderabad</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hyderabad</td>
<td></td>
</tr>
<tr>
<td>Mathematical Methods in Physics</td>
<td>Prof. N. Mukunda</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Indian Institute of Science</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bangalore</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12 November 2000</td>
<td>Rest Day</td>
</tr>
</tbody>
</table>

Second week (13-18 November 2000)

<table>
<thead>
<tr>
<th>Courses</th>
<th>Lecturer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantum Mechanics</td>
<td>Prof. R. Simon</td>
</tr>
<tr>
<td></td>
<td>The Institute of Mathematical Sciences</td>
</tr>
<tr>
<td></td>
<td>Chennai</td>
</tr>
<tr>
<td>Physics of Waves</td>
<td>Dr. R. Jagannathan</td>
</tr>
<tr>
<td></td>
<td>The Institute of Mathematical Sciences</td>
</tr>
<tr>
<td></td>
<td>Chennai</td>
</tr>
</tbody>
</table>

Daily Schedule

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures</td>
<td>9 AM. to 10.30 AM</td>
</tr>
<tr>
<td></td>
<td>11 AM. to 12.30 PM</td>
</tr>
<tr>
<td>Tutorial/problem-solving session</td>
<td>2.00 PM. to 3.30 PM</td>
</tr>
<tr>
<td></td>
<td>4.00 PM. to 5.30 PM</td>
</tr>
</tbody>
</table>

In addition, there will be a few evening lectures, seminars and discussion session.
LIST OF SELECTED PARTICIPANTS FOR REFRESHER COURSE IN THEORETICAL PHYSICS, MAVELIKARA - 6 – 18 NOVEMBER 2000

1. Dr P. Samuel Asivratham
   Lecturer (S.G) in Physics
   Madras Christian College
   Tambaram
   Chennai 600 059

2. Dr Rajan K. John
   Lecturer
   Dept. of Physics
   C.M.S. College
   Kottayam 686 001

3. Dr Jhuma Bandyopadhaya
   Dept. of Physics
   Gokhale Memorial Girls College
   1/1, Harish Mukherjee Road
   Calcutta 700 020

4. Dr Subhash C. Kaushik
   Asst. Prof. (Physics)
   Govt. S.G.S. Autonomous (P.G.) College
   Sidhi (M.P.) 486 661

5. Dr A. Elangovan
   Reader in Physics
   Dept. of Physics
   The American College
   Madurai 625 002

6. Dr Y. Narasimha Murthy
   Dept. of Physics
   Sri Saibaba National College
   Anantapur 515 001

7. Mr K. Gnanasekaran
   Research Fellow (FIP Scheme, IX Plan)
   Center for Nonlinear Dynamics
   Dept. of Physics
   Bharathidasan University
   Tiruchirapalli 620 024

8. Ms. K.B. Nalini
   Lecturer in Physics
   V.V.E.T.
   Mysore 570 010

9. Dr K.P. Harikrishnan
   Lecturer
   Dept. of Physics
   Cochin College
   Kochi 682 002

10. Prof. G. Padmanabhan
    Lecturer in Physics
    Dept. of Physics and Electronic Science
    Sri Sankara Arts and Science College
    Kancheepuram

11. Dr C. Yohannan Panicker
    Lecturer – Selection Grade
    Dept. of Physics
    T.K.M.C.A.S.
    Kollam 673 305

12. Dr A. Santhanam
    Dept. of Physics
    Govt. Arts College
    Tiruvannamalai 606 603

13. Dr P. Philominathan
    Lecturer in Physics
    AVVM Sri Pushpam College (Autonomous)
    Poondi, Thanjavur 613 503

14. Dr Mehermosh R. Press
    Lecturer, Dept. of Physics
    University of Mumbai
    Vidyanagari, SantaCruz (E)
    Mumbai 400 098
15. Dr K.K. Singh  
   Physics Group  
   Birla Institute of Technology and Science  
   Pilani 333 031

16. Dr V.N. Purushothaman  
   Dept. of Physics  
   Sree Kerala Varma College, Trichur  
   (P.O.) Kanattukara  
   Dt. Trichur 680 011

17. Dr Swarnamala Sirsi  
   Lecturer, Dept. of Physics  
   Yuvaraja’s College  
   University of Mysore  
   Mysore 570 005

18. Mr C.A. Safeequ  
   Lecturer, Dept. of Physics  
   W.M.O. Arts & Science College  
   Muttill P.O. 673 122  
   Wayanad

19. Mr B.D. Sutar  
   Dept. of Physics  
   Gogate Jogalekar College  
   Ratnagiri 415 612

20. Dr A. R. Usha Devi  
   Lecturer in Physics  
   Dept. of Physics  
   Bangalore University  
   Jnanabharathi Campus  
   Bangalore 560 056

21. Mr A. Varadarajan  
   Lecturer in Physics  
   Sacred Heart College  
   Thevara P.O.  
   Kochi 682 013

22. Dr George Varghese  
   Dept. of Physics  
   St. Berchmans College  
   Changanacherry 686 101

23. Dr Suresh V. Vettoor  
   “Sumanu”, Vettoor house  
   Ettumanoor 686 631  
   Kerala

24. Mr Gopakumar  
   Research Fellow  
   M.G. University  
   P.D. Hills P.O.  
   Kottayam

25. Dr Thomas Kuruvilla  
   Department of Physics  
   Bishop Moore College  
   Mavelikara 690 101

26. Mr George Mathew  
   Department of Physics  
   Bishop Moore College  
   Mavelikara 690 101

27. Mr George Kurien  
   Department of Physics  
   Bishop Moore College  
   Mavelikara 690 101