

Ramamurthi, *ibid.*

16. "Optimization of electron optical parameters for high current electron guns", L M Rangarajan, S Mahadevan and S S Ramamurthi, *ibid.*
17. "On-line computerization of a Governmental Purchase Department", A Rawat and A K Gupta, Seminar-cum-workshop on database applications in physical sciences, BARC, Bombay, Oct. 1990.
18. "Space and time resolved observations of enhanced X-ray emission in laser produced plasmas", P A Naik, P D Gupta and S R Kumbhare, Fifth National Symposium on Plasma science, Jadavpur University, Calcutta, Dec. 1990.
19. "A new assesment of the role of Helium in high temperature irradiation embrittlement of austenitic steels", W Kesternich, R V Nandedkar and D Meertens, Proc. Jahrestagung Kerntechnik, 589 (1990).
7. "XUV lasing and soft X-ray generation in laser produced plasmas", P D Gupta, 2 lectures, *ibid.*
8. "FEL Status & Perspective", D D Bhawalkar, 2 lectures, Summer School on Physics of Free Electron Lasers, DAVV, Indore, June 11-12, 1990.
9. "Synchrotron radiation sources Indus-I and Indus-II", G Singh, *ibid.*
10. "Lasers and their principles of operation", A K Nath, *ibid.*
11. "Undulators and their practical considerations", S C Bapna, 2 lectures, *ibid.*
12. "Copper vapour lasers", R Bhatnagar, International Workshop on Lasers and their Applications, Nov 12 - 30, CAT, Indore.
13. "Novel resonators", R Bhatnagar, *ibid.*
14. "Unstable resonators", D D Bhawalkar, *ibid.*
15. "Bessel beams", D D Bhawalkar, *ibid.*
16. "Optically pumped molecular gas lasers", P K Gupta, 2 lectures, *ibid.*
17. "Electrical discharges for population inversion", A K Nath, 2 lectures, *ibid.*
18. "Laser energy and power measurements", U Nundy, *ibid.*
19. "Soft X-ray lasers", P D Gupta, *ibid.*
20. "Mode locked lasers", S M Oak, 2 lectures, *ibid.*
21. "Optical nonlinearities in low dimensional systems", K C Rustagi, *ibid.*
22. "Optically pumped solid state lasers", T P S Nathan, 2 lectures, *ibid.*
23. "Accelerator programme at CAT", S S Ramamurthi, Symposium on Nuclear Physics 1990, Madras, Dec 1-4, 1990.
24. "Lasers and their applications", D D Bhawalkar, DAE-C V Raman Lecture, Dec. 20, 1990.

Invited Lectures

1. "Present status of vacuum technology in India", A S Raja Rao, Workshop on Laser Interferometric Gravitational Wave Detector, CAT, Indore Feb. 1-3, 1990.
2. "Laser technology in India", D D Bhawalkar, *ibid.*
3. "Accelerator programme at CAT Indore", S S Ramamurthi, 2nd National Seminar on Physics & Technology of particle Accelerators & their applications, VECC, Calcutta, Feb. 5-7, 1990.
4. "Ophthalmic Laser: Indian Horizon", D D Bhawalkar, International Symposium on Lasers in Ophthalmology, New Delhi, Mar. 26, 1990.
5. "Indus-I and Indus-II Synchrotron radiation sources", D D Bhawalkar, S S Ramamurthi and G Singh, Symposium on Medium-Scale Synchrotron Radiation Facilities in Asia, Hiroshima, Japan, May 1990. Published in "Medium Scale Synchrotron radiation facilities in Asia", Ed. K Kohra and T Kasuga, World scientific, Hong Kong, (1990).
6. "Laser induced fusion", D D Bhawalkar, Tutorial school on "Modern developments in Optics", Indian Institute

OTHER ACTIVITIES / NEWS

Hindi Day

Official Language Implementation Committee (OLIC), CAT organised an extempore Hindi elocution competition and a Hindi poetry recitation competition on Hindi day at CAT on Sept. 14, 1990. Prof. G D Tripathi, Head, Hindi Department, Govt. Arts & commerce college,

Indore was the chief guest and Shri Narendra Chanchal, Asstt. Producer, AIR, Indore centre was the special guest. The function was presided over by Dr. D D Bhawalkar, Director, CAT.

CAT Staff Club

CAT Staff Club arranged sports activities like Badmin-

ton, Tennis, Volley Ball, Table Tennis and Indoor games. Staff Club also organized several cultural functions during the year.

A Badminton Tournament was organised at CAT from Oct. 30 to Nov. 4, 1990 as a part of 6th Inter DAE Sports Meet 1990. A total of about 100 players from various DAE unit participated in the tournament. The tournament was inaugurated by Hon. Justice Shri A G Qureshi of M P High Court, Shri Suresh Gawade, Secretary, Table Tennis Federation of India, gave away the prizes to the winners.

Nomination

Shri A S Raja Rao, CAT has been nominated a member of expert committee, constituted by National Physical Laboratory, New Delhi to assess BHEL, Bhopal for grant of accreditation in the area of mechanical measurements.

Honours / Awards

Dr. D D Bhawalkar, Director, CAT has been nominated a C V Raman Lecturer for the year 1990 - 91. The lecture series is founded by an endowment provided by DAE in honour of the late Professor C V Raman. The lectures are for popularisation of science and primarily addressed to undergraduate students.

Obituary

Shri Ambasankaran, formerly, Director, Electronics & Instrumentation group, BARC and Chairman Planning & Implementation Committee CAT, passed away on August 20, 1990. He had retired from Department of Atomic Energy in 1983 after a distinguished carrier spanning over three decades. Because of his managerial and scientific skills he was reappointed for a period of two years to help guide the development of CAT with which he was associated right from inception. Indeed, as the first Chairman of the Planning and Implementation Committee he was responsible for much of the early development of infrastructure at CAT. He was widely known for his passion for indigenous development of sophisticated scientific equipments. He pioneered vacuum technology in the country and made valuable contributions towards development of variable energy cyclotron at Calcutta and MHD power generators. His other important contributions include transfer of vacuum technology developed at BARC to IBP CO. Ltd. which has now become a major manufacturer and supplier of vacuum components in the country. He was also instrumental in the transfer of know how for night vision devices developed at BARC to Bharat Electronics Ltd. (BEL) which has set up a new unit at Pune to manufacture these devices. Shri Ambasankaran's death has created a void which will be difficult to fill. We offer our most sincere

condolences to his bereaved family.



Shri Ambasankaran being introduced to Shri Zail Singh, President of India by Dr. Raja Ramanna, Chairman, AEC at a function organised in Feb. 1984 to inaugurate the Center for Advanced Technology.

Dr. M L Bansal expired in a tragic accident near Indore on September 9, 1990. Dr.

Bansal was widely known for his commitment and zeal for indigenous development of lasers and related instrumentation and for his valuable contributions in solid state physics. He had recently shifted from Nuclear Physics Division, BARC to Laser Programme, CAT. His un-



timely demise at the age of 38 is a big loss to the Indian scientific community. Dr. Bansal leaves behind his wife and a young daughter to whom we offer our most sincere condolences.

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