

CONFERENCES / WORKSHOPS / SEMINARS

SRS Users Meeting

A meeting of SRS users was held at CAT on April 15-16, 1991 to assess the design status of various beamlines to be constructed for Indus-I. The meeting was attended by scientists from BARC, CAT and Universities associated with this activity and a few invitees with expertise in optics, electronics and mechanical engineering. The meeting was inaugurated by Dr D D Bhawalkar who also delivered the welcome-address. In the meeting design features, engineering, vacuum and data acquisition aspects of beamlines were discussed in detail. An important outcome of this meeting was the realization that many components were common between beamlines of Inter University Consortium (IUC) for utilization of DAE facilities and beamlines of DAE. It was therefore decided to evolve a common policy for procurement of these components so that the overall expenditure on beamlines can be reduced. A central coordination committee was constituted to monitor the progress of all the beamlines.

Summer School for Manpower Development in Laser Technology

A summer school for Manpower Development in Laser Technology was held at CAT from April 15-27, 1991. It was organised by Shri GS Institute of Technology and Science (SGSITS), Indore in collaboration with CAT. The course aimed to provide basic understanding of lasers and laser systems, new developments in laser technology and also to familiarise the participants with the important applications of lasers. The school was attended by 44 teachers from Engineering and Science Colleges and Universities. The course comprised of 40 lectures delivered by laser experts from CAT and a few other invited speakers. The participants also performed 12 experiments (at CAT & SGSITS) dealing with different laser systems and their applications.

The course was sponsored by Ministry of Human Resource Development, Govt of India. Dr D D Bhawalkar, Director, CAT was the course adviser, and Dr P D Gupta (CAT), Dr B L Sharda & Dr K W Phadke (SGSITS) were the co-ordinators of this course.

National Symposium on Vacuum Science and Technology

A national symposium on "Vacuum Science and Technology" was organised at CAT from November 13-15, 1991 by the Indian vacuum society in collaboration with CAT. The symposium was attended by nearly 100 scientists and engineers working in this field from all over the country.

The topics covered in the symposium included vacuum systems, vacuum applications in cryogenics, space metallurgy, electronics and thin films. An exhibition of vacuum products in which many industries participated was also organised. The symposium was inaugurated by Prof M S Sodha, Vice Chancellor, Devi Ahilya Vishwavidyalaya (DAVV), Indore and Dr D D Bhawalkar, Director, CAT presided over the function. Dr D N Misra, Director General, M P Council of Science and Technology released a souvenir on the occasion and also declared open the exhibition.

In his welcome address Dr R P Agarwala, President Indian Vacuum Society (IVS) stressed the need to include vacuum science & technology as a specialised discipline in the universities. Prof Sodha in his key note address described some of the prerequisites for introduction of such courses and outlined tentative syllabi for graduate and post graduate level needed by the universities for introduction of courses on vacuum science and technology. Dr Bhawalkar in his presidential address highlighted the contribution of vacuum science and technology for the advancement in the field of electronics and other important fields like Accelerators and Lasers in which CAT is working at present.

On the occasion two eminent contributors in the field of vacuum science and technology, Dr A S Divatia formerly Director, Variable Energy Cyclotron Centre, Calcutta and Shri S V Narasiah, Chairman, Hind High Vacuum Co.(P) Ltd., Bangalore were facilitated by Dr Bhawalkar on behalf of IVS. Shri S S Ramamurthi, Project Manager, Accelerator, CAT was the chairman of the organising committee of the symposium.



The Inaugural function of National Symposium on Vacuum Science and Technology. Seated on dias are (left to right) Shri S S Ramamurthi, Chairman, organising committee, Dr R P Agarwala, President, IVS, Dr D D Bhawalkar, Director, CAT, Prof M S Sodha, Vice chancellor, Devi Ahilya Vishwavidyalaya, Dr D N Misra, Director General, M P Council of Science and Technology and Shri P B Desai, Convener.

National Symposium on Science & Technology of Plasmas

Sixth National Symposium on Science and Technology of Plasmas was held at CAT during December 17-21, 1990. The symposium was organised by School of Physics, Devi Ahilya Vishwavidyalaya, Indore. About 200 delegates from all over the country participated in the symposium. Over 25 invited lectures were delivered by experts in different branches of this field and about 200 contributed papers were presented in the poster sessions. The topics covered

included magnetic confinement of Tokamak plasmas, laser plasma interaction, chaos in plasmas, free electron lasers, space plasmas and plasma processing of materials. The symposium was inaugurated by Prof M S Sodha Vice-Chancellor of DAVV, who also delivered the key note address. In the concluding session, Dr D D Bhawalkar, Director CAT, also briefed the participants about the various research and developmental activities of CAT. Prof K P Maheshwari of DAVV was the convener of this symposium.

PUBLICATIONS

In Journals

1. "Anomalous changes in lattice parameters, specific heat, and loss factor in potassium titanyl phosphate at 324 K", M S Somayazulu, P U M Sastry and V K Wadhawan, *Solid State Comm.* 78, 499-501 (1991).
2. "Analysis of a noncavity laser with magnifying optics in front of the high reflectivity mirror", S K Dixit, S V Nakhe, B Singh, J K Mittal and R Bhatnagar, *IEEE J Quantum Elect.*, 27, 1143-1145 (1991).
3. "Enhanced X-ray line emission in laser produced plasmas expanding in a background gas", P A Naik, P D Gupta and S R Kumbhare, *Phys. Rev.*, A 43, 4540-4315, (1991).
4. "A copper vapor laser with a positive branch self filtering unstable resonator", R Bhatnagar, S K Dixit, J K Mittal, B Singh, S V Nakhe and K K Sharangpani, *Opt. Commun.*, 82, 557 (1991).
5. "Effect of intracavity spatial filtering on the beam characteristics of a copper vapor laser", B Singh, S K Dixit, J K Mittal, S V Nakhe, R Bhatnagar, *J Appl. Phys.*, 69, 537 (1991).
6. "Amplification of short (4ns) copper vapor laser pulses", B Singh, S V Nakhe, S K Dixit, J K Mittal, R Bhatnagar, *Opt. Commun.*, 81, 17 (1991).
7. "On the frequency-dependent optical length of a laser resonator with an internal Fabry-Perot etalon", S C Mehendale, *IEEE J Quantum Elect.*, 27, 1141 (1991).
8. "Electrical discharge and laser gain characteristics of a coaxial discharge CO₂ laser stabilized by transverse rotating magnetic field", A K Nath, R S Choubey, U V Sree Ramkumar, P Chowdhary, M Kumar and L Abhinandan, *IEEE J Quantum Elect.*, 27, 476-479 (1991).
9. "The role of basal-plane oxygen atoms in determining the ferroelastic and microstructural properties of Y-Ba-Cu-O", V K Wadhawan, *Bul. Mat. Sci.*, 14, 561-565 (1991).
10. "Ferroelasticity : Introductory survey and present status", V K Wadhawan, *Phase Transitions*, 34, 3-18 (1991).
11. "Shape-memory effect in Y-Ba-Cu-O ceramic", R Tiwari and V K Wadhawan, *Phase Transitions*, 35, 47-59 (1991).
12. "CH₃OH Laser line assignments and frequency predictions", G Moruzzi, F Strumia, R M Lees and I Mukhopadhyay, *Infrared Phys.*, 32, 333-347 (1991).
13. "A fast cavity dumper for a picosecond glass laser", S M Oak, K S Bindra, B S Narayan and R K Khardekar, *Rev. Sci. Inst.*, 62, 308-312 (1991).
14. "Anomalous mode in the Raman and IR spectra of mercury telluride", M L Bansal, A Ingale and A P Roy, *Phys. Rev.*, B43, 7020-26 (1991).
15. "Strongly dispersive low frequency Raman modes in germanium", M L Bansal, A K Sood and M Cardona, *Solid State Comm.* 78, 579-82 (1991).
16. "A vector wave analysis of a Bessel beam", S R Mishra, *Opt. Commun.* 85, 159-61 (1991).

Internal Reports

1. "Control system for Indus - I: architecture, methodology and technology", B J Vaidya, CAT/I/91-1, 1991.
2. "Injection into Indus-I", B Singh, G Singh and S S Ramamurthi, CAT/I/91-2, 1991.
3. "An S-band waveguide system for the 20 MeV Injector Microtron", R Bhaskaran, S K Jain and S S Ramamurthi, CAT/I/91-3, 1991.
4. "Ion trapping studies for Indus-I", Deepa Angal, G Singh and S S Ramamurthi, CAT/I/91/4, 1991.