

## INDO-USSR SEMINAR ON INDUSTRIAL APPLICATIONS OF ELECTRON ACCELERATORS

Over the last decades, radiation sources for industrial applications have been increasingly used, typical applications being sterilization of material products, food preservation, curing of paints and coatings, cross-linking of polymers, treatment of sewage and industrial waste etc. Radiation processing with electron accelerators offers many advantages over conventional sources, advantage being high speed, no radioactivity, ease of manipulation of source, no environmental hazard etc.

A one-day seminar to discuss various aspects of this important area of radiation technology was organised at CAT on 29th October, 1988. Seven experts from USSR (from Inst. of Nuclear Physics, Novosibirsk and Plastic Polymer factory, Cable Institute, Moscow), and three scientists from CAT reviewed. These talks covered specific applications such as irradiation of electric cables to improve their properties, irradiation of polymers to obtain special characteristics such as heat shrinking, fire

resistance etc, irradiation of textiles to make it crease resistant, irradiation of food grains and medical appliances to make them disinfected and sterilized etc..

The important feature of the seminar was the participation of about 30 representatives from industries and institutions in and around Indore. A video film highlighting the industrial applications of electron accelerators was also shown. Shri M.G. Karmarkar was the convener of this seminar.



*Dr. V.L. Auslender from Institute of Nuclear Physics, Moscow delivering the key-note address at the seminar.*

*A view of the audience.*

## C O N S T R U C T I O N   G R O U P   A T   C A T

The construction Group is responsible for construction of various laboratories, for providing infrastructural facilities including electrical power, for providing housing and for overall development of CAT site. The infrastructural facilities, so far completed, include the construction of multipurpose sheds, workshop build-

ings, hostel-cum-efficiency apartments, central stores building, cement godown and various ancillary structures. Housing facility consists of 162 nos. of various categories of quarters and services including an oxidation pond, water tower, water supply and sewerage systems etc. Presently, the group has taken up the construction

of Laser fusion laboratory, Accelerator complex building, Chemical cleaning and glass blowing building, Laser instrumentation laboratory, 132 KV substation, school building, welfare centre, shopping centre, and 38 numbers of quarters of various categories.

## INDO-USSR SEMINAR ON LASERS AND THEIR APPLICATIONS

A two day Indo-USSR Seminar on Lasers and their Applications, sponsored by M.P. Council for Science and Technology was organised by CAT on 26th and 27th December, 1988 at CAT, Indore. Thirteen Soviet scientists from Lebedev Physical Institute, Kuibyshev; Baikov Instt. of Metallurgy, Moscow; Research Centre for Technological Lasers, Shatura; General Physics Instt., Moscow; Dept. of General Physics and Astronomy, Moscow; Vishevski Instt. of Surgery, Moscow, etc. and more than 50 research scientists, engineers, industrialists and doctors from various Universities and Institutions of India

attended the seminar. The emphasis in this seminar was on industrial and medical applications of lasers.

Dr. D.D. Bhawalkar, Director, CAT inaugurated the seminar and Dr. V.A. Katulin, Director, Lebedev Physical Institute, Kuibyshev branch and Leader of the Soviet delegation delivered the key-note address, appreciating the Indo-USSR joint efforts in the field of laser and their applications in different areas.

Recent developments in colour centre lasers, XeCl excimer lasers, Plasma-recombination lasers, applications of lasers in material processing like surface hardening, alloying, welding, cut-

ting etc. and laser medical applications in cardiovascular surgery, otolaryngology, ophthalmology and gynecology were discussed in the two day deliberations. Various applications of lasers in surgery were illustrated with a video film and discussed in detail by Dr. Sargin, Senior Surgeon, Vishevski Institute of Surgery, Moscow. Various laser activities of CAT were also discussed. The seminar concluded with the visit of all participants to various laboratories of CAT.

Dr. A.K. Nath was the Convener of this Seminar.

### Lectures by CAT Scientists.

1. Dr. D. D. Bhawalkar, on 'Synchrotron Radiation source at CAT' in Symposium on Solid state Physics, organised by Board of Research in Nuclear Sciences, DAE at Bhopal University, Bhopal on 22nd Dec. 88.
2. Shri A.S. Raja Rao, on 'Fabrication techniques in Vacuum Technology' at Workshop on 'Vacuum Technology in Plasma and Fusion application', organised by Institute of Plasma Research. (IPR) Ahmedabad and Indian Vacuum Society, on 27th July, 1988.
3. Dr. M. Thirumaleshwar, on 'Cryogenics' at Devi Ahilya Vishwavidyalaya, Indore on 28th August 88.
4. Shri A.K. Gupta on 'Computers towards development of society', in the two day symposium on 'Science and Technology - tool for development', sponsored by Devi Ahilya Vishwavidyalaya and CAT on 28th Aug. and a series of lectures on computer graphics at DAVV, Indore from Aug. '88 to Dec' 88.
5. Dr. K.C. Rustagi gave 3 lectures on 'Non linear optics with emphasis on free-electron non-linearities and composite materials', at International College on condensed matter Physics held at IIT, Bombay during Dec. 88.
6. Shri S.C. Bapna, on 'DC Accelerators and their Applications', at INDO-USSR Seminar on 'Industrial applications of electron



*A view of the participants of the INDO-USSR seminar on Lasers and their Applications organised at CAT.*