N.1: RRCAT gets a new Director

Dr. P. D. Gupta, Distinguished Scientist took over as the new Director of RRCAT from Dr. V. C. Sahni, the former director who retired on superannuation on July 31, 2009 after completion of an illustrious scientific career of 44 years in the Department of Atomic Energy. Dr. Sahni held the highest position of this Centre for over five and half years during which he was also the Director of the Physics Group, BARC, Mumbai.

N.2: One day seminar in the honour of Dr. V. C. Sahni

A one day seminar on "Accelerators, Lasers & Synchrotron Radiation Sources: Recent Technologies Advances & Applications" was organized on July 29, 2009 in honor of Dr. V. C. Sahni, the former Director of RRCAT. The seminar was convened by Dr. P. D. Gupta, the present Director of RRCAT.

Dr. P.D. Gupta and Shri C. K. Pithawa presenting a souvenir to Dr. V. C. Sahni and Mrs. Sahni

The seminar was inaugurated with the welcome speech by Dr. P. D. Gupta. He read the brief biodata and major achievements of Dr. Sahni. The seminar had four sessions.

The first session was chaired by Dr. Shekhar Mishra, Fermi National Accelerator Laboratory (FNAL), USA. In this session, there were presentations by Dr. R K Bhandari, Director, VECC Kolkata, Dr. Amit Roy, Director IUAC New Delhi and Dr. P Chaddah, Director UGC-DAE CSR Indore. The presentation of Dr. Bhandari was focused on the Cyclotrons at VECC. He gave a brief introduction of the machines developed at VECC and shared his experiences during the development work. Dr. Amit Roy talked about Superconducting Accelerators. He started his talk with the basics of superconducting accelerators and presented the state of the art technology at various laboratories abroad. He also discussed the work in the field of Superconducting accelerator at IUAC. The presentation of Dr. Chaddah was on Superconducting magnets in storage rings. He started his talk with the difference between curiosity and requirement driven research and stressed on research in basic science. He also explained how the practical problems are simplified in the text books, citing the example of theory related to dipole magnets.

The second session was chaired by Dr. R K Bhandari, Director VECC Kolkata. The session had three presentations, one by Dr. Shekhar Mishra of FNAL, USA and other two by Dr. L. M. Gantayat and Shri S. Kailas respectively of BARC, Mumbai. The title of Dr. Mishra's presentations was "The road we travel together", where he discussed the collaboration between RRCAT and FNAL and shared his experiences and memories. Dr. Gantayat talked about the various power beam technologies developed at BARC and their applications. The presentation of Shri Kailas was on Ion accelerators and medical cyclotrons.

The third and fourth session had total six presentations, all from RRCAT. These presentations were by Dr. P. D. Gupta, Shri C. K. Pithawa, Dr. P. K. Gupta, Dr. S. M. Oak, Dr. S. B. Roy and Dr. G. S. Lodha. Dr. P. D. Gupta stressed on new frontiers in high field physics in his presentation. He discussed briefly the advances in laser technology and chirped pulse amplification. Shri C. K. Pithawa presented a talk "Indus Synchrotron Radiation Source (ISRC) – status report" and discussed the status of Indus I and Indus II with the recent results. Dr. P. K. Gupta gave a brief overview of the different research activities being actively pursued in the Centre in the field of the biomedical applications of lasers. His talk covered applications of optical spectroscopy and imaging for cancer diagnosis as well as the use of light for different therapeutic applications. He also mentioned various applications of optical tweezers. Dr. S.M. Oak presented a talk on material processing applications of solid state lasers. He discussed the various laser cutting and laser welding works carried out by lasers and manipulators, developed by solid state laser division, at nuclear plants. The presentation of Dr. S. B. Roy was on Superconducting material and he discussed the present status of the global research and compared that with the efforts at RRCAT. Dr. G.S. Lodha presented the results of recent studies using beamlines of Indus-I & Indus-II.

The seminar was attended by invitees from DAVV, SGSITS and a large number of RRCAT scientists.

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N.3: DAE-BRNS Indian Particle Accelerator Conference (InPAC) 2009

The Indian Particle Accelerator Conference (InPAC) is held once in two years. InPAC-2009, fourth in series was held at Raja Ramanna Centre for Advanced Technology (RRCAT), Indore during February 10-13, 2009. The main objective of InPAC series is to provide a forum for interaction and exchange of ideas amongst the scientists and engineers working in the rapidly growing field of particle accelerators.

Dr Anil Kakodkar, Chairman, AEC & Secretary, DAE presided over the inaugural function. In his presidential address he pointed out that the Indian particle accelerator community has arrived on the world stage in this area, with successful contributions to the mega international accelerator projects. He alluded to the role accelerators can play in the

utilization of thorium based reactors through the route of Accelerator Driven Subcritical (ADS) Systems, and mentioned that DAE has embarked on a programme to develop an injector for state of art Accelerator Driven Sub-critical System which is a promising future energy source. Dr. Piermaria J. Oddone, Director, Fermi National Accelerator Laboratory (FNAL), USA delivered the keynote address on "High Energy Physics in Next Decade and Beyond". FNAL operates the Tevatron, the world's highest energy particle collider near Chicago, Illinois, USA. Dr. V C Sahni, Director, RRCAT gave a brief overview of accelerator activities being pursued at RRCAT. He also spoke about the motivation to hold the conference at major accelerator centres of our country. Shri C.K. Pithawa, Incharge, Indus Accelerator Complex and Chairman, InPAC-2009 Organising Committee welcomed the guests and gave details of the conference. He highlighted the role particle accelerators are playing in basic research, medical & industrial applications besides agriculture radiation processing. The inaugural programme ended with a vote of thanks by Dr. S.K. Deb, Convener, InPAC-2009.

Inaugural function of InPAC-2009 at RRCAT

During the conference spanning over four days, major topics in particle accelerators were covered, these included, DC accelerators, linear accelerators, cyclotrons, microtrons, synchrotrons, synchrotron radiation sources, free electron lasers, electron and ion sources, medical and industrial accelerators, beam dynamics, magnet design and technology, super-conducting technology, RF systems, vacuum technology, applications of accelerators etc.

The scientific programme of InPAC-2009 consisted of parallel sessions on two afternoons and poster sessions on three afternoons. There were 15 invited papers; 35 contributed oral presentations and 166 poster papers. About 400 scientists, engineers and students from major national laboratories namely BARC, VECC, TIFR, IPR, IOP, IUAC, SAMEER, CEERI, IGCAR, RRCAT, universities, leading accelerator laboratories abroad FNAL (USA), KEK (Japan), CERN (Switzerland), SOLEIL (France) and BINP (Russia) and many accelerator related industries participated in this conference.

An MOU paving the way for collaboration on developing cutting edge science and technology for future accelerators was signed by Directors of FNAL, US, Director, RRCAT, Director VECC and Director, IUAC. The MOU establishes collaboration in the frontier areas of superconducting (SC) accelerator science and technology and in research and development of superconducting materials. The MOU will help in the development of high gradient superconducting radio-frequency cavities, required to accelerate charged particles in an accelerator to very high energies.

After the last scientific session on 13th Feb 09, a concluding session was organized where prizes were awarded for best posters followed by feedback by participants. It was concluded that the conference was very satisfying and productive in its scientific content.

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N.4: One Week Exposure Program

RRCAT organized, for the first time, a One Week Exposure Program (OWEP-2009) from 20th – 24th July 2009. This program was initiated by Dr. V.C. Sahni, the then Director, RRCAT to give an exposure to the students on different activities of science and technology being carried out at RRCAT. The aim of this program was to stimulate the young and bright students of B.Sc/BE (Ist year) towards fascinating and rewarding career in science and technology. For this program, invitations were sent to all the science and engineering colleges of Indore. On special request some students from Miranda House, Delhi were also invited. In all, 30 students participated in OWEP-2009. All the students were provided free boarding and lodging at RRCAT guest house.

The programme was inaugurated by Dr. P. D. Gupta, the then Officiating Director, RRCAT on 20th July morning. As a part of his inauguration address, Dr. P. D. Gupta gave an extensive and lucid description of the various activities of research and development that were being carried out at RRCAT. Dr. L. M. Kukreja co-chairman of the OWEP organizing committee welcomed all the guests and students to the programme.

Following the inauguration, the lecture series commenced. The lectures delivered at the programme, covered nearly all the aspects of lasers, accelerators and some other interesting contemporary research topics that are pursued at RRCAT. A total of 16 lectures were delivered by various senior scientists and engineers from RRCAT. Special efforts had been made to make the lectures simple so that B.Sc/BE Ist year students could follow and appreciate the contents. Beside these lectures, interactive lab visits were also a part of the daily schedule. During some of the lab visits, students were also allowed to work on some of the laboratory systems. A special visit was also organized in the Indus complex on the morning of the last day of the programme.

The programme ended with a concluding and feedback session, chaired by Dr. G. S. Lodha. The feedback from the students was very positive and most of the students found this exposure very stimulating and useful. After the program,