The International Conference on Medical Physics (ICMP-2008) and the 29th Annual Conference of the Association of Medical Physicists of India (AMPI) was organized during November 26 - 29, 2008 at the Multipurpose Hall, Training School Hostel & Guest House BARC. The theme of the conference was “Advanced Technology of Radiation Medicine and Medical Physics Practice”. About 650 delegates from India and abroad including 120 radiological / medical physics students from different universities of India, participated in the conference. ICMP-2008 was inaugurated by Dr. Anil Kakodkar, Chairman, Atomic Energy Commission and Secretary to the Government of India, Department of Atomic Energy (DAE). While delivering the inaugural address, Dr. Anil Kakodkar summarized the importance of ionizing radiation in daily life and contributions of DAE / BARC toward the cancer control programme of the country. He stated that there was a need to make available the advanced technology imaging and therapeutic equipment to rural areas, for the benefit of the masses. He also stated that sufficient number of trained technical manpower, for safe medical applications of ionizing radiation, is available in the country. However, there was a need to improve the working conditions at medical institutions in the rural sector and remunerate the specialists adequately, so that, the rural population can also get the services of highly skilled professionals. He also emphasized the need to restructure the training modules so that the trained manpower can efficiently use the advanced technology equipment for its intended applications.

Mr. S. K. Sharma, Chairman, Atomic Energy Regulatory Board (AERB) presided over the inaugural function and released the Souvenir and Book of Abstracts. In the presidential address, Mr. S. K. Sharma highlighted the role of AERB in ensuring the safety and security of radiation sources. He also stated that though the radiation safety record in medical applications of ionizing radiation was very good, we should be cautious while commissioning high-end imaging and therapeutic equipment in clinical service. Prof. Bhudatt Paliwal, Director of Medical Physics, Department of Human Oncology and Medical Physics, University of Wisconsin, USA; Dr. Anil Kakodkar, Chairman AEC; Mr. S. K. Sharma, Chairman, AERB; Prof. S. K. Kaul, President, AMPI; Dr. Y. S. Mayya, Head RPAD
Wisconsin, Madison, USA presented the keynote address where he described in detail, the dosimetry problems associated with organ movements during Intensity Modulated RadioTherapy (IMRT). The keynote address highlighted the feasibility of a real time motion tracking methodology during the delivery of IMRT. Dr. Anil Kakodkar felicitated five Ex-BARC scientists and senior AMPI members (Dr. B. C. Bhatt, Dr. A. S. Pradhan, Dr. O. P. Massand, Mr. U. B. Tripathi and Dr. A. Shanta) for their contribution in the field of medical physics and the AMPI.

One hundred eighty five papers including AMPI Ramaiah Naidu Memorial Oration, 29 invited papers, 35 oral and 120 poster papers were presented during the conference. Mr. P. S. Viswanathan, Former Head, Department of Medical Physics, Tata Memorial Hospital, Mumbai, delivered the Seventeenth AMPI Ramaiah Naidu Memorial Oration (RNMO). The RNMO award is bestowed on an eminent personality who has a long working experience in the field of medical physics with a good track record of academics, research and clinical practice. The title of his deliberation was "Medical Physics in India: History, Development and Activities". During this talk, he described in detail the early days (1943) and current medical physics activities in the country including commercially available technology and indigenous developments. He also listed future directions in dealing with hi-tech equipment and emphasized the need for harmonization in medical physics training modules.

The key feature of ICMP-2008 was joint AMPI-AROI (Association of Radiation Oncologists of India) scientific meeting on November 28, 2008 at Nehru Centre, Worli, Mumbai. The AMPI-AROI joint meeting was held in the backdrop of the unfortunate national tragedy of the 26/11 terrorist attack. The medical physics community lost two precious lives in this gruesome attack.

The joint meeting was the first of its kind, perhaps making it the defining moment in the history of medical applications of ionizing radiation in India. Both the clinical and physical aspects of recent radiation oncology techniques such as IMRT, IGRT, precision radiotherapy by Cyber Knife, adapted Telecobalt machines and Proton accelerators, Image guided brachytherapy and indigenous development of radiotherapy technology were presented during the joint meeting. The joint meeting was useful for radiation oncologists in improving their understanding of medical physics and the technological aspects of recent radiotherapy while it was equally beneficial for medical physicists to understand clinical requirements and associated complexities in implementing the hi-tech radiotherapy. The panel discussion on “Newer Technologies: Promises and Pitfalls” witnessed active participation of a large number of medical physicists and radiation oncologists. It was concluded during the discussion that technology was available for high precision radiotherapy and dose escalation but it should be used discriminately as a majority of cancers require palliative treatment by conventional techniques.

The scientific deliberations of ICMP-2008 covered the whole spectrum of medical radiation physics: Radiation Therapy Physics and Devices; Medical Imaging Physics
and Devices; Radiation Dosimetry and Standards; Radiation Physics; Radiation Biology; Time Dose Models; Commissioning, Quality Assurance and Audits; Clinical Aspects of Radiation Oncology; Clinical Aspects of Medical Imaging; Computational Tools in Medical Physics; Education and Training in Medical Physics; Radiation Protection and Safety. Presentations on recent developments in the technology of radiation medicine and methodology of imaging and radiation therapy were a special attraction. The oral and poster presentations were evaluated for the Best Oral and Poster papers. At the end of the conference “Improvement of ImatixXX in terms of spatial resolution and large field acquisition for patient specific IMRT verification” by Arun Singh Oinam et al, Radiotherapy Department, Postgraduate Institute of Medical Education and Research, Chandigarh and “Dosimetry of in-house designed circular cone for stereotactic treatment using MVCBCT” by Kamlesh Kumar Gupta et al, Department of Radiation Oncology, Ruby Hall Clinic, Pune were selected for the AMPI Best oral and poster papers, respectively.

The overwhelming participation of manufacturers dealing with medical radiation equipment, dosimetry systems, phantoms, computerized treatment planning systems and treatment accessories, was the other attraction at ICMP-2008. A number of recent technology equipment (Cyber Knife, 4-D medical linear accelerator, Gamma Knife Perfexion, Image Guided HDR Brachytherapy Systems) and dosimetry systems (2-D array with high resolution), phantoms (Dynamic phantoms to simulate organ movements), patient immobilization devices (SBRT immobilization systems) and other related products were demonstrated in 32 stalls arranged near the conference venue.

In summation, the conference deliberations were useful for radiation scientists, medical physicists, radiation oncologists, radiologists, radiobiologists, dosimetrist, radiation technologists and radiological protection experts.

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New Publication

Uncertainty Modeling and Analysis

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This book is a compilation of material which addresses issues on handling uncertainties, while designing and analyzing complex systems in the nuclear industry. Safety of a nuclear power plant is of crucial importance and structural reliability assessment need to be incorporated during the designing stage of a plant. For this purpose, assessing the performance of different variables becomes necessary. These uncertainties can be resolved to a great extent by computer modeling and simulation. Various methodologies for handling these uncertainties have been outlined in this compilation.