

N.4: DAE (Excellence in Science, Engineering & Technology) Awards 2010

The DAE awards scheme was instituted in the year 2006 to recognize outstanding accomplishments and exceptional achievements of the DAE staff, who are engaged in scientific research, technology development, engineering/project implementation, teaching, healthcare and support services. These awards are given annually. The awards for the year 2010 were given on the eve of Founder's Day (October 30) which was celebrated this year on October 28, 2011 in BARC. These were presented to the winners by the Chief Guest, Dr. R. Chidambaram, Principal Scientific Advisor to the Government of India. The following scientists/engineers from RRCAT bagged the DAE awards for the year 2010:

Scientific & Technical Excellence Award

Dr. B N Upadhyay, SO/F Solid State Laser Division, was awarded with Scientific and Technical Excellence Award for the year 2010 in recognition of his outstanding contribution for the development of high power and highly efficient fiber coupled industrial Nd:YAG laser & fiber laser and on-site implementation of laser cutting and welding technique at several DAE units. The contribution includes: optimization for process parameters for various material processing related to nuclear field and implementation of various features in laser system, beam delivery and specific tooling and fixtures required for execution of various time-bound turnkey projects related to DAE. The award carries a cash prize of ` 1 Lakh, a citation and a medal.



Young Applied Scientist/Technologist Award

Shri Yogesh Verma, SO/E Laser Biomedical Applications & Instrumentation Division was awarded with Young Applied Scientist/ Technologist Award for the year 2010 in recognition of his outstanding contribution to the development of optical coherence tomography setups and their utilization for several important biomedical imaging applications. The biomedical imaging applications includes noninvasive monitoring of the healing of wounds, discrimination between normal and abnormal breast tissue sites and imaging of the internal organs of Zebra fish. The award carries a cash prize of ` 50,000/-, a citation and a medal.



Young Scientist Award



Shri Vishnu Kumar Sharma, SO/E Materials & Advanced Accelerator Sciences Division was awarded with Young Scientist Award for the year 2010 in recognition of his outstanding contribution to the field of superconducting and magnetic materials. His research outputs in particular on the multifunctional properties of Huesler alloy system NiMnIn is getting considerable attentions from Scientific Community. The award carries a cash prize of ` 50,000/-, a citation and a medal.

Meritorious Service Award

Shri Uttam Kumar Ghosh, Foreman/B Solid State Laser Division, was awarded with Meritorious Service Award for the year 2010 in recognition of his outstanding contribution to the operation and maintenance of clean room laboratory, high purity gas manifolds of the metal organic vapor phase epitaxy (MOVPE) machine and upgradation/upkeeping of other semiconductor process and characterization facilities at Semiconductor Laser Section. This contribution was an important factor in the successful development of laser diodes operating in the wavelength range of 0.67 to 1.0 micron in pulsed (5 W) and CW (0.5 W) modes as well as development of different types of detectors. The award carries a cash prize of ` 20,000/-, a citation and a medal.



Group Achievement Award

In this award, the winner receives a cash award, a medal and a Citation. The following four teams were awarded with Group achievement awards:

1. Design, development, integration and commissioning of 11 kV, 20A Solid State Bouncer Modular prototype for 352.2 MHz 1 MW Klystrons for Linac 4 project of CERN: A team of eight members was awarded with "Group achievement award for the year 2010" in recognition of outstanding contributions in coherent manner as per CERN standard. Shri P. Shrivastava, Head Pulsed High Power Microwave Section, received the award on behalf of the team. This successful design, development, testing and commissioning of the solid state high voltage modulator will give a strong boost to the DAE-CERN

Collaboration in Novel Accelerator Technology by contributing to LINAC 4 projects. It is a very crucial technology for achieving self reliance in DAE's program of development of pulsed proton LINAC for Spallation Neutron Source.

2. **Laser Plasma Interaction Studies at Ultrahigh Intensities:** A team of nineteen members of the Laser Plasma Division was awarded with "Group Achievement Award for the year 2010" in recognition of outstanding work on laser matter interaction studies in the ultra-short pulse, ultra-high intensity regime using a 10 TW, Ti:sapphire laser system. Dr. P. A. Naik, Head Laser Plasma Division, received the award on behalf of the team. The group has performed a number of front-ranking investigations which include : high-order harmonic generation from plasma plumes, electron acceleration to tens of MeV energy by laser wake-field acceleration technique, time resolved x-ray diffraction using femtosecond bursts of x-rays, 2.45 MeV fusion neutron generation from CD₂ target, MeV x-ray generation with fast electrons etc., in addition to development of several x-ray and particle (electron, proton, and neutron) diagnostics with high spatial and temporal resolutions.
3. **Indus-I Reflectivity Beamline Utilization:** A team of twenty five members, from Indus Synchrotron Utilization Division and Laser Electronics Support Division, was awarded with "Group Achievement Award for the year 2010" in recognition of their outstanding contribution in constantly upgradation of beamline to fulfill the challenging requirements of the users. Dr. G. S. Lodha, Head X-ray Optics Section, received the award on behalf of the team. The team has fostered a vibrant VUV/soft X-ray research community in India. The beamline is operated as a national facility for materials, atomic and molecular science research. The beamline is used for interface studies in thin films, optical response of materials in VUV/soft X-ray region, calibration of optics and detectors and gas phase photo ionization processes. This is a significant contribution towards effective utilization of Indus-I Synchrotron Radiation Source.
4. **Indigenous development of Helium Liquefier:** A team of twenty four members was awarded with "Group Achievement Award for the year 2010" in recognition

of their outstanding contribution in successful liquefaction of helium using indigenous helium liquefier. Shri P. K. Kush, Head Cryo-engineering and Cryo-module Development Section, received the award on behalf of the team. The liquefaction of helium was achieved with the indigenous design and development of cryogenic expansion devices, suitable heat-exchangers and other auxiliary components. The work demonstrated the engineering capabilities of highly complex and advanced technology and it is particularly of great importance as very less technical details are available in open literature because of its strategic and commercial interests.

N.5: Best Poster Award during 26th National Symposium on Plasma Science & Technology (Plasma-2011)

The poster entitled "Hole Size Effect in Hard X-ray Emission from Intense Laser Irradiated Nanoholes" by U. Chakravarty, V Arora, J. A. Chakera, P. A. Naik, H. Srivastava, P. Tiwari, A. Srivastava, and P. D. Gupta, presented at the 26th National Symposium on Plasma Science & Technology (Plasma-2011) held in Birla Institute of Technology, Mesra, Patna Campus during December 20 - 23, 2011 won the "Best Poster Prize". The award carried a cash prize of Rs. 5000 and a certificate given by the Plasma Science Society of India.

N.6: RRCAT family wishes happy and healthy life on superannuation

Dr. Shrikant C. Mehendale, Outstanding Scientist and Head, Laser Physics Applications Division, retired on superannuation on July 31, 2011. Dr. Mehendale joined BARC in the year 1973 after graduating from the 16th batch of BARC training school. He received his Ph.D. degree in Physics from the University of Mumbai in 1984 for his research work in the field of nonlinear optics. He was a postdoctoral visitor at Herriot Watt University, Edinburgh, UK from 1984 to 1986 and shifted to RRCAT in 1988. His research interests included laser physics, nonlinear optics and laser atom cooling.

