



being carried out at X-ray lithography beam-line of Indus-2. Development of high quality product using LIGA process was the topic of presentation by Prof. Suhas Joshi, IIT Bombay. Prof P Gandhi, IIT Bombay presented the work on Streolithography pertaining to micro-fabrication. Prof. Sudhir Chandra, IIT Delhi discussed about the bulk and surface micromachining of silicon. Dr. R Balusuramaniam, PED BARC discussed about the various products developed at BARC using micro and nano-finishing techniques.

There was a special session dedicated to discuss various avenues of micro-fabrication and to identify new and innovative device which can be fabricated using X-ray lithography facility at Indus-2. In this session, some of the products identified for further developments were: micro motors, micro actuators, 3D high aspect ratio structures for application in optical and environmental area, etc. During the meeting, need of involvement of R&D institutes and industries was also discussed. It was emphasized that frequent meetings for fixing future direction in the area of Semiconductor, MEMS and Nanotechnology should be undertaken at regular intervals.

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N7: Director HBNI visited RRCAT

Prof. R. B. Grover, Director, Homi Bhabha National Institute visited RRCAT, which is a constituent institute of HBNI on 19th January, 2012. During his visit he addressed the faculty members and PhD scholars of HBNI in the auditorium of BARC Training School at RRCAT. In his address, Prof. Grover gave a presentation encompassing various aspects of HBNI, including a detail statistics on the enrolments in various academic programmes. Prof. Grover emphasized the role of 'doctoral committees' in ensuring the quality of the Ph.D. programme in HBNI. He also highlighted that the large number of competent faculty members and well equipped laboratories are strengths of HBNI, but the facilities for the students including hostel need some improvement. He noted that the next phase of expansion of HBNI would begin with opening of a fully fledged campus at Vizag. After his presentation Prof. Grover answered various questions asked by the faculties and scholars ranging from purely academic to welfare issues.

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N.8: Women's Day celebrated at RRCAT

Women's Day was celebrated at RRCAT on 13th April 2012 highlighting the theme "Health and Fitness". The programme was organised in two sessions: pre and post lunch session. In the first session, athletic events were organized after dividing the participants into two groups. Group "A" had participants below 40 years of age and Group "B" consisted of

the participants above 40 years of age. The first event was a 100 meters race. 15 women in Group "A" and 16 in Group "B" participated in this event. Ms. Anju Bhati won in Group "A" and Ms. Preetha Jaikumar won in Group "B". The second event was 2x100 meters relay race. 7 teams in Group "A" and 10 teams in Group "B" participated in this event. Winner team of Group "A" consisted of Ms. Rejina Mathews and Ms. Neha Modi. In Group "B" Ms. Kirti Labhshetwar and Ms. Preetha Jaikumar were the winners. After a short tea break, a cycle race was organised. There were 13 participants in Group "A" and 6 participants in Group "B". Ms. Ranjana Rathore won the race in Group "A" and Ms. Kamla Aasiwal was the winner in Group "B". Ms. Krishna Gupta flagged the cycle race. The last event of the pre lunch session was fast walk competition. It was a mass gathering without any age bar. More than 50 participants took part in 1 km fast walk from Palace Gate to Guest House.



Participants preparing for an athletic event during Women's Day Celebration at RRCAT

Ms. Urmila Singh and Ms. Ranjana Rathore jointly won the race. Ms. Ritu Rajan Chavan, DCSO flagged the race. The session received overwhelming response from all the participants. Mr. Sanjeev Sharma, Sports Teacher, AECS and Ms. Aasha Narang, Ex Sports Teacher, AECS, helped in organising the events along with five national level players of AECS and judged the track events.

The post lunch session was devoted to Yoga and Naturopathy. Mr. Sharad Sanghavi, President of Yoga and Naturopathy Kendra and Dr. Saroj Dosi of Naturopathy were the guests for the session. Ms. Gitika Khare and Ms. Bhavna Merh welcomed the guests with bouquet. The session began with welcome address by Dr. Alka Ingale, Chairperson, Women Cell RRCAT. She pointed out the need of health awareness among women explaining the theme of the programme. Ms. Prabjot Singh declared the prizes of various athletic events held in the pre-lunch session. Mr. Sharad Sanghavi gave a lecture cum demo of Yoga explaining the importance of Yoga in daily life. He discussed how various diseases can be treated by Yog kriyas. He also gave demo of simple Yogasans and Om chanting. Dr. Saroj gave a lecture on Naturopathy and explained the importance of naturopathy in treating different diseases. She emphasized on the use of natural food products in daily life. After the lecture, there was



an interactive session answering the various queries about different health problems and healthy diet. Dr. Alka Ingale and Ms. Prabhjot Singh presented the memento to the guests. Ms. Arti Shelke proposed vote of thanks. Ms. Kirti Barpande convened the session. The session was ended with evening tea and enigmatic discussions about the program, future programs and health issues.

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N.9: Best Thesis Awards

Out of the eight Ph.D. theses presentations during the twentieth DAE BRNS National Laser Symposium (NLS-20), the thesis presentation entitled "High order harmonic generation from preformed plasma plumes" by H. Singhal, Laser Plasma Division was selected for the ILA "Best Thesis Award" along with other two theses. Awardees received Rs 5,000 in cash and a certificate. The awards were given by Dr. P.K.Gupta, President Indian Laser Association, on 12th January 2012 during the concluding session of NLS-20.

N.10: Best Poster awards during DAE-BRNS National Laser Symposium

In the twentieth DAE BRNS National Laser Symposium (NLS-20), out of 268 contributed papers presented as posters, the following papers were selected for the ILA best poster award by a committee of judges:

- "Development of a Shack Hartmann wave-front sensor for wave-front analysis of large size high peak power laser beam", by S.A. Pai, B. Pant, S. Raja, M.P. Kamath, S. Jain, A.P. Kulkarni, A.S. Joshi, P.A. Naik, P.K. Gupta and P.D. Gupta.
- "Study of strain propagation in laser irradiated silicon crystal by time resolved diffraction of Kalpha X-ray probe of different photon energies", by V. Arora, S. Bagchi, M. Gupta, J.A. Chakera, A. Gupta, P.A. Naik, P. Chaddah and P.D. Gupta.

N.11: Best Poster Award during DAE- Solid State Physics Symposium

A paper entitled "Commissioning of Soft and Deep X-ray Lithography Beamline on Indus-2", V P Dhamgaye, B Gowri Sankar, C K Garg and G S Lodha was presented in DAE Solid State Physics Symposium (DAESSPS 2011) at SRM University, Chennai. The poster was awarded with the best poster award in the symposium. Shri Vishal Dhamgaye received the award from Vice-chancellor of SRM University.



Sh. Vishal Dhamgaye receiving the Best poster award during DAE- Solid State Physics Symposium

N.12: RRCAT family wishes happy and healthy life on superannuation



Shri Gurnam Singh, Head, Indus Operation Accelerator Physics Design Division, retired on superannuation on 31st March, 2012. Shri Singh born on 25th March 1952 and completed Master of Science in Physics from the University of Rajasthan in 1973. He joined BARC in the year 1974 after graduating from the 17th batch of BARC training School. He was deputed to UK as a Commonwealth Scholar during 1982-84. He was awarded the prestigious MRSI Medal-2000 by the Materials Research Society of India for his important and leading role in the commissioning of Indus-1 Synchrotron Radiation Source. During May to Nov 2001, He visited PSI, Switzerland as a Guest Scientist at Swiss Light Source In 2001. His research interests included Beam Dynamics of synchrotron radiation Sources, and Crystal Growth. At present he is working as a Raja Ramanna Fellow at RRCAT, Indore.

Shri M Praveen Kumar, Regional Director IRPS&U RRCAT retired on superannuation on 31st May, 2012. Shri Kumar was born on 25th May 1952 in Kerela. He got his M.Sc degree in Nuclear Physics in the year of 1974 from the University of Calicut, Kerala and was a first rank holder. He joined the 18th Batch of the BARC Training School in the same year and started



his service in the field of cryogenics at Technical Physics Division. There, he was involved in the design of Cryostat and Space Simulation Chamber for ISRO. On 14th May 1986, he came to RRCAT on transfer and joined the Accelerator Program. He established the LCW Plant for cooling and testing of accelerator machine components. Shri Kumar has very good clarity about the requirement of Accelerator cooling system and he has implemented them systematically. He is having good