

about various programs being conducted under umbrella of the department and stressed the need pioneering research in advanced technologies.

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N.6: Theme meeting on Structure determination using X-Ray diffraction

An interaction meeting on Synchrotron Utilization with the theme: “Structure determination using X-Ray diffraction” was held in RRCAT from 23rd to 25th day of July 2012. This was the fourth in the series of the meetings held in the calendar year 2012, where the principal emphasis was to bring researchers from different universities and other research organizations to RRCAT and make them aware of the facilities at the Indus synchrotrons - a national research facility. The present meeting was primarily focused on the utilization of X-Ray diffraction beamlines at Indus-2 namely the Angle dispersive and Energy dispersive X-Ray diffraction beamlines for measurements at ambient and high pressures. The function was inaugurated by Dr. P D Gupta, Director RRCAT. The first talk was delivered Prof. Dhananjai Pandey, Director IIT BHU. He explained the various issues related to X-Ray diffraction and the role of symmetry in determining the diffraction selection rules and the pattern. He also explained the methods used for structure determination from X-Ray diffraction. The other talks presented in this meeting were by Dr. V S Shastri, (UGC DAE CSR, Kalpakkam), Dr. A K Sinha (RRCAT), Shri H Poswal (BARC) and Dr. N Chandrashekhar (IGCAR). Dr. V S Shastri talked on Pair distribution function approach for crystal structure determination, Dr. A K Sinha talked on the available facilities at the ADXRD beamline on Indus-2, Shri H Poswal talked on the facilities available at the EDXRD beamline on Indus-2 and some of the high pressure experiments that have been performed at this beamline. Dr. N Chandrashekhar explained the basics of high pressure physics and the instrumentation relate to high pressure measurements that have been developed at IGCAR. The meeting was attended by about 20 students from different institutes outside RRCAT. Two practical sessions on the basics of Rietveld refinement were also conducted on the afternoons of the first and the second day of the meeting. These were coordinated by Dr. C Upadhyay from IITBHU and RRCAT scientists. These training sessions and all the talks were very useful for young researchers who plan to make a career in materials

synthesis and structure determination using X-Ray diffraction.

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N.7: Theme meeting on Synchrotron based EXAFS: Techniques and Applications

A much awaited theme meeting on “Synchrotron based EXAFS: Techniques and Applications” was held at RRCAT during Sept 27-28, 2012 with an objective to bring together users as well as experts in the field of EXAFS, to present an overview of results, activities and to provide a platform for discussing emerging new applications and future trends. Meeting had a overwhelming response amply justifying the interest in this emerging field. More than 115 participants, from various universities (12), national institutes (6) and other Synchrotron facilities (Elettra, Italy & Soleil, France) attended the meeting. The two-day theme meeting was organized into four sessions, including practical sessions for experimental demonstration at Dispersive EXAFS beamline (BL-8) and hands-on-training on EXAFS data analysis.



The participants of Theme meeting on Synchrotron based EXAFS posing for a group photograph

Dr. P D Gupta, Director, RRCAT, presided over the inaugural function held on 27th Sept. 2012. Dr. Gupta, in his inaugural address, informed the participants that a series of focused theme meeting are being organized to promote the utilization of Indus Synchrotron Facility by increasing the user base in the country. Dr. N K Sahoo, Head, Applied Spectroscopy Division, BARC welcomed the delegates, invited speakers and students and invitees attending the function and also gave an overview of EXAFS facilities at Indus-2 synchrotron radiation source.

Dr. S K Deb, Head ISUD, gave an overview of various beamlines on Indus synchrotron radiation sources. Dr. S N Jha, Convener, EXAFS-TM, 2012, delivered the vote of thanks.

First lecture after the inaugural function was delivered by the Dr. Giuliana Aquilanti (ELETTRA, Italy) on basics of EXAFS technique and its application to material science. In the subsequent technical sessions, there were presentations by scientists on catalytic applications of EXAFS technique including an extensive overview of application of EXAFS in catalysis by Dr. Carmelo Prestipino (CNRS, Rennes, France).

Second day of the meet was focused on EXAFS applications in material science, in which first speaker was from SOLEIL, France who discussed the research carried out at ODE beamline, SOLEIL for high pressure EXAFS and XMCD applications. Other presentations included EXAFS application on magnetic and nano materials and other technologically important materials. Last session had two parallel sessions consisting of experimental demonstrations and data analysis training as well as presentations from various user groups to discuss new proposals suitable for dispersive EXAFS(BL-8) beamline at Indus-2.

The concluding session, held on 28th Sept was presided over by Dr. S Kailas, Director Physics Group, BARC. The prime objective of this interactive session was designated for receiving remarks, viewpoints and feedback from the highly enthusiastic participants. As observed, the participants were very satisfied with the overall arrangements of the meeting, both scientifically as well as interaction point of view. There are also discussions and suggestions catering to the need of emerging requirements for the experimental station of EXAFS beamline like high temperature cell for in-situ EXAFS studies. Dr. Kailas, Director Physics Group, in his concluding remarks emphasized the need for similar theme meeting to enhance the user-base for synchrotron based EXAFS researches in India. Dr. D Bhattacharyya, Secretary, EXAFS-TM, 2012, summarized the proceedings of the theme meeting and thanked all the participants for their overwhelming support.

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N.8: DAE (Excellence in Science, Engineering & Technology) Awards 2011

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 2011 were given on the eve of Founder's Day on October 30, 2012 in BARC. These were presented to the winners by the Chief Guest, Dr. M R Srinivasan, Former Chairman, Atomic Energy Commission. The following scientists/engineers from RRCAT bagged the DAE awards for the year 2011:

HomiBhabha Science & Technology Award



Dr. T K Sharma, SO/G Solid State Laser Division has been conferred with the Homi Bhabha Science and Technology Award for "Basic research on semiconductor quantum wells and development of Semiconductor Lasers". Under his leadership, significant progress on the development of laser diodes has been made where lasing action at many

different wavelengths varying from 670 nm to 1000nm have been achieved at RRCAT. Furthermore, Dr. Sharma made significant contributions in enhancing the understanding of some novel fundamental physical phenomena related to semiconductor quantum structures e.g. Discovery of the compositional dependence of bowing parameter for highly strained InGaAs/GaAs quantum wells which was otherwise thought to be a constant and explanation of high polarization switching behavior of nitride deep ultraviolet light emitters. He made invaluable contributions on the spectroscopic characterization of quantum structures and also on the characterization of mid infrared semiconductor laser structures by inventing the FTIR-SPS technique. Homi Bhabha Science & Technology Award carries a Cash award of Rs. 5 Lakh, a Citation and a Medal.

Scientific & Technical Excellence Award



Shri Tushar A Puntambekar, SO/H & Head Beam Diagnostics Section, Accelerator Control and Beam Diagnostics Division has been conferred with the Scientific & Technical Excellence Award for the year 2011 for his contribution in the field of beam