

explained various issues related to EXAFS for extraction of accurate local structure starting from simple to complex structures. Prof. J. R. Mohanty covered a new technique of magnetic imaging using synchrotron. He also covered coherent magnetic scattering to study ultra-fast magnetism on small time and length scales. Prof. D. K. Satapathy covered basic principles behind determination of magnetization profile in layered structures using soft x-ray resonant magnetic reflectivity. He explained the various issues related to magnetization using this technique through representative results on promising oxide magnetic multilayers. Dr. D. Shukla presented the results of magnetic x-ray diffraction and Dr. M. Nayak presented some recent studies on spatially and chemically resolved atomic profile of low contrast interfaces using non-magnetic resonant x-ray scattering. The overview of results and current activity of different existing beamline related to the topic were presented by respective beamline scientists: Dr A. K. Sinha, Dr. S. N. Jha, Dr. D. M. Phase, Dr. M. H. Modi, and Dr. M. K. Tiwari for beamline of ADXRD, EXAFS, PES, Soft x-ray reflectometry and XRF-microprobe respectively.

More than 40 outside participants from various universities and national institutes from different universities and institutions in the country attended the school. A major aspect of the school was the extensive interaction that the students had with the faculty members specifically with Prof. A. K. Majumdar. A feedback session was also held at the end of the school. All the participants were thoroughly satisfied with the school.

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### **N.5: Young Scientist Research Program (YSRP) at RRCAT**

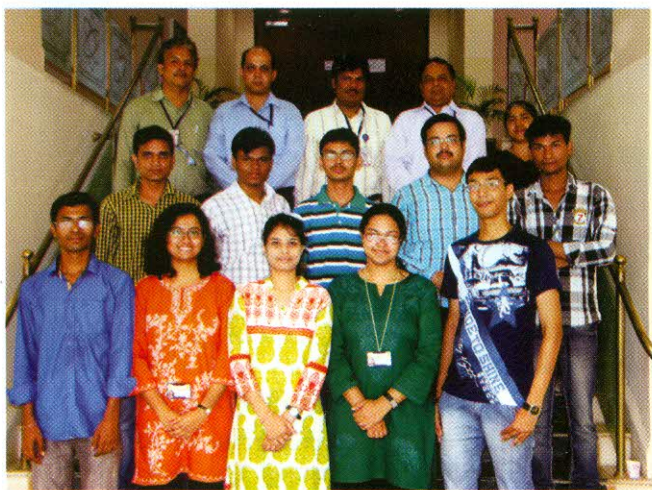
The Young Scientist Research Program (YSRP) for the year 2014 was organized at RRCAT during May 12, 2014 to July 04, 2014. This research program is organized in the summer vacations to expose young students to various R & D activities in front line areas of science and technology. Ten meritorious students, who were selected from all over the country, were provided free accommodation at RRCAT Guest House and paid round-trip train fare by II class (sleeper) and a stipend of Rupees 2,500 per month. The students got an excellent opportunity to work on projects under the guidance of leading experts of the country. The research projects, which were allotted to the students during their 8 weeks stay at the Centre are listed below along with the names of the guides:

<b>Student</b>	<b>Title of the project</b>	<b>Guide</b>
Akshay Joshi, SPSU, Udaipur	Investigation of impact of multicore processors on performance of high performance computing cluster	Mrs. A. Rajan, CD
Ashish Awasthi, ISM, Dhanbad	PXI based data acquisition and control system for beamlines	Mr. S. R. Kane, ISUD
Apoorva Pachori, JEC, Jabalpur	Development of an OTP - based user authentication system	Mr. A. Jain, CD
Pranauti Deshmukh, GHRCE, Nagpur	Participation in design, development and testing of a 100W, L-band RF amplifier	Mr. P. Mohania, PHPMS
Ravi Ranjan Bhardwaj, NIT, Patna	Design and thermal analysis of photon beam dump for insertion devices (undulators) based beamline front ends and safety analysis of dipole chamber	Mr. V. Prasad, ISUD
Rajshree Khare, IET-DAVV, Indore	Study and implementation of internet traffic diversion technique based on white list	Mrs. S. Chaudhari & Mr. H. Chouhan, CD
Rishabh Gupta, IT, GGU, Bilaspur	Study and implementation of network access control	Mr. A. Bansal, ACBDD
Siddharth Varshney, IIT-BHU, Varanasi	Reliability analysis of power electronics building blocks	Dr. M. Borage, PSIAD
Subodh Rana, NIT, Jamshedpur	To study the effect of annealing on hardness and impurity distribution of high purity niobium	Mr. A. Bose, PLSCD
Yennapureddy Manoj Kumar, RGUKT, Kadapa	Study and characterization of femtosecond laser pulses using autocorrelation technique	Dr. A. K. Sharma, LPD

Under this research program, six interaction sessions cum seminars were delivered by senior scientists/engineers of RRCAT. These seminars, which were open to Ph. D. students and other trainees also, are listed below:

- "Accelerator, laser programs and related technologies at RRCAT" by Shri Purushottam Shrivastava, PHPMS
- "An introduction to synchrotron and synchrotron radiation sources" by Shri Amalendu Sharma, IOAPDD
- "Synchrotron radiation: A powerful electromagnetic source" by Dr. G.S. Lodha, ISUD

- "Computing and Communication in Research & Development" by Dr. Anil Rawat, CD
- "Optical Spectroscopy- A Promising Tool for the Diagnosis of Cancer" by Dr. Shovan Majumder, LBAID
- "Concluding talk: Beyond academics, ancient Indian science heritage" by Purushottam Shrivastava, PHPMS



*The batch of students of YSRP-2014 with team of YSRP-coordinators at RRCAT*

Lab visits were arranged for the research students to the Indus Accelerator Complex Indus-1, Indus-2, Beam lines; Solid State Laser Division; Computer Centre; Superconducting Cavity Labs and SCRF Infrastructure; Laser Biomedical Applications Division/Optical Spectroscopy Lab. At the end of the program, each student gave a seminar on the assigned project and submitted the project report as per YSRP guidelines.

The program was successfully organised and completed with the support from various volunteers from various divisions/sections/labs, administration, accounts and security of RRCAT.

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## **N.6: Women's Day Celebration of at RRCAT:**

Women's day was celebrated at RRCAT on April 9th 2014. The program was conducted in two sessions, pre and post lunch session. In first session two eminent personalities from the field of health and self defense were invited for lecture cum demonstration. Ms. Arti welcomed the gathering

and introduced both the guest speakers. Dr. Alka, chairperson, women cell noted that this was the tenth year of women's day celebration in RRCAT. She said that to strengthen ourselves as a professional and a home maker, it is imperative to be in good health. Presently, news of women under attack is also a cause of worry. The theme of the day was therefore decided to be "Health and self defense". This was followed by a lecture cum demonstration from Ms. Rashmi Gupta, director of two wellness centers in Indore. She gave health tips and showed simple exercise routine, which can be followed by women to maintain good health. This routine was performed and enjoyed by all the audience. After the tea break, all participants reassembled for the second lecture by Ms Anupa, who is a social worker. She is actively working in the field of training self defense to women as a part of women empowerment program. She brought out the confusions regarding self defense using very apt examples. Through out her lecture, she emphasized one very important point that self defense involves avoiding the conflict and is not about teaching a lesson. She further said that this can be achieved by being alert and showing courage to take necessary steps. She also mentioned that courage should not be misplaced to endanger oneself. The lecture was appreciated by all and many felt one day workshop on the same should be arranged. Morning session was concluded by vote of thanks from Ms. Prabjot and by offering mementos to the guest speakers.

The post lunch session was devoted to literature based activity by RRCAT participants and was compeered by Ms. Prabjot. The program started with a song welcoming a new born girl child by Ms. Beena. This was followed by two group songs in Bengali and Marathi sung by Aparna, Suparna, Sujata, Archana and Beena. Marathi song described the conflict between empowerment of women on one hand and



*Group photo of participants with the invited speaker, Ms. Anupa (standing, R5, in first row)*