



## From the Editor's Desk....

Warm greetings to you all! We are happy to bring out the first issue of the RRCAT Newsletter of the year 2013. As always, the Newsletter reports on the various achievements in areas ranging from lasers through accelerators to infrastructure, and features three theme articles, one each from the laser and the accelerator program, and the third from a young scientist. While the news section gives a comprehensive coverage of the various happenings the Centre has witnessed over the later half of the past year, the publication section lists the series of research papers appeared in peer-reviewed journals or presented in national or international symposia during this period.

The reports from the accelerator program form the opening section of the Newsletter. The improvement of the beam lifetime of Indus-2 to over  $\sim 15$  hours at full beam energy (2.5 GeV) operation, design and development of a visible diagnostic beam-line at Indus-2 for measurement of various longitudinal parameters associated with the beam, development of compact 476 MHz, 1 kW solid state pulse power amplifiers, development of prototype dipole magnet for 700 MeV booster synchrotron, observation of first signature of coherence in the CUTE-FEL setup developed at RRCAT are to name a few from the longer list. Following these is an account of various accomplishments in the field of lasers and its applications. These comprise reports ranging from development of 150 W high brightness (M2  $\sim 19$ ) solid state green laser through indigenous development of laser glass to the development of a depth-sensitive, combined Raman spectroscopy and optical coherence spectroscopy system for biomedical applications. This is followed by the three theme articles, which focus on three important areas of research activities. The first one presents indigenous development of solid state RF amplifiers for the Indus synchrotron radiation sources, the second one details the nuances of the ultrafast spectroscopy of various nanostructures, and the third article in the Young Scientists Forum describes systematic studies carried out at RRCAT on the correlation between microstructure-texture and magnetization in ferrite thin films. The infrastructure section highlights reports on the accomplishments by the computer and civil divisions of RRCAT.

It is really heart-warming to see all these contributions. The Editorial Board appreciates the time and effort that have been devoted by the different contributors and would like to thank them all. Last but not the least, we would like to express our deepest gratitude to the Director, RRCAT, for his keen interest and active support at various stages of compilation of the Newsletter.

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RRCAT Newsletter