

ANNUAL REPORT 2014-2015

अन्तर-विश्वविद्यालय त्वरक केन्द्र Inter-University Accelerator Centre

(विश्वविद्यालय अनुदान आयोग का स्वायत्त केन्द्र)

(An Autonomous Inter-University Centre of UGC)

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Cover Photographs

Top: New Accelerator Mass Spectrometer facility

Middle: X-ray diffraction pattern of pristine and 120 MeV Ag irradiated ZnO film

Bottom: Electrostatic deflector (ED) of HYRA, installed in the beam hall II

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DIRECTOR'S REPORT

During the last year there has been excellent progress in several fronts of development and research activities of IUAC. The large 15UD Pelletron Accelerator continued maintaining excellent uptime. The all three modules of the superconducting linear accelerator are now operational. The new innovative piezo-based slow tuner is now fully operational for providing beams for experiments. The National Array of Neutron Detectors (NAND) has been installed successfully and experiments are conducted. The first part of HYbrid Recoil mass Analyzer is used for scheduled experiments.

Presently IUAC has three Tandem Pelletron Accelerators. The 1.7 MV Pelletron has been in regular use for Rutherford Back Scattering / Channelling experiments of the users. The 0.5 MV Tandem Pelletron Accelerator is installed for Accelerator Mass Spectrometry experiments. Two low energy ion beam facilities providing positive and negative ion beams are regularly being used for scheduled experiments sanctioned by Accelerator Users' Committee.

The development of the Free Electron Laser at IUAC is progressing as per schedule in collaboration with KEK Japan.

The High temperature Electron Cyclotron Resonance Ion Source is installed on the High Voltage platform in the new Beam Hall 3. The RFQ is placed on the indigenously developed high voltage platform.

A wide variety of scheduled experiments have been conducted successfully in the areas of nuclear physics, materials science, atomic / molecular physics, radiation biology and accelerator mass spectrometry by researchers from all over India and abroad. The facilities are being upgraded regularly based on the feedback received from the users.

The High Power Computing Facility is upgraded and is being used by a large number of researchers from all over the country. The development of the new ^{14}C accelerator mass spectrometry system funded by the Ministry of Earth Sciences has been completed before the time sanctioned by the funding agency. The Graphitization facility is fully operational now.

The compact Computer Interface for Science Experiments (ExpEYES) has been getting wide response from the academic community. The teachers and researchers from all over the country are being trained regularly on computer interfaced science experiments, Python programming based data analyses, visualization and installation of open source educational softwares.

I would like to congratulate the employees of IUAC and the researchers from the universities, institutes and laboratories for their immense contributions in the development and research activities at the Centre round the clock, seven days in a week. The Annual Report contains these developmental and research activities systematically.

IUAC continues to receive generous support of the University Grants Commission, Ministry of Human Resource Development and of other Government Funding Agencies for upgradation and expansion of the research facilities.

All the support laboratories / facilities have been providing excellent service to the users throughout the year.

Dinakar Kanjilal

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