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DIRECTOR'S REPORT

This report showcases the many ways in which we support research work at country and global level to turn the aims of the IUAC into results for a wide range of researchers working in universities, institutes and colleges to realize their potentials and build resilience. This annual report is for the period of April 2018 – March 2019 and during this period many major initiatives have been initiated in the area of academic as well as in administrative front.

Building a scientific community has been one of IUAC's key aims since its foundation. Excellent scientific practice and value-based care can only be driven forward by the very best and brightest minds. This mission is rooted in the fundamental understanding that interdisciplinary exchange is essential to successful translational research. Event formats such as the Schools/Workshops/ Lectures by visiting national/international scientists and the subject experts furthermore strengthened scientific exchange – both at the discipline-specific and interdisciplinary level. These events were regularly attended by many participants. Additionally, we have pushed on the development of scientific-technological platforms and taken a challenge of having indigenous MRI magnet.

Centre embarked into High Current Injector (HCI) project. This project has been prioritized to ensure timely commissioning. This once commissioned will not only ease pressure from our work horse Pelletron but will also help in reducing the pending beam shifts due to large currents HCI can provide.

IUAC is in the process of establishing a national facility for Geochronology funded by Ministry of Earth Sciences, Govt of India. The facility will comprise of sophisticated equipment such as AMS system for heavy and medium mass radionuclides, High Resolution Secondary Ion Mass Spectrometry (HRSIMS), Optical dating systems, Thermal ionization mass spectrometry (TIMS), Laser Ablation (LA) Multi Collector Inductively Coupled Mass Spectrometry (MC-ICPMS) as well as sample characterization facilities, such as the Scanning Electron Microscope (SEM), Electron Probe Micro Analyzer (EPMA), X-ray diffraction (XRD), X-ray florescence (XRF) etc. The intended research areas include high resolution paleo-climatology on terrestrial and marine settings, erosion rates in Himalaya and their relation to tectonics and climate, dating of seismic events via river incision/fault surfaces, strath terraces, erosion rates of mountain and sediment fluxes in rivers, quantitative earth surface processes studies, glaciations of the past and estimation of Equilibrium line altitude (ELA) depressions/elevation through time, studies on monsoon using deep sea cores, studies on ocean circulation etc.

It was felt in recent past that there is a growing demand of intense and coherent photon beams in India to conduct experimental research in the multidisciplinary fields. So it was decided that an accelerator based photon source will be developed at IUAC to provide an experimental photon facility to the vast research community of India to be used in various multidisciplinary areas. A compact, pre-bunched Free Electron Laser facility, Delhi Light Source (DLS), being developed at IUAC. Once operational, the facility will produce intense THz radiation (0.18 to 3 THz) and low emittance electron beams (<8 MeV). Various subsystems of the facility e.g. electron gun with photocathode, High Power RF device including klystron and modulator, solenoid magnet, Beam Position Monitor, various beam line components, etc. are being commissioned. Other devices like the Fibre laser system, photocathode deposition system, undulator, Faraday cups,

electromagnets, etc. are in the final stage of developments/procurement and will start getting installed from the beginning of 2020.

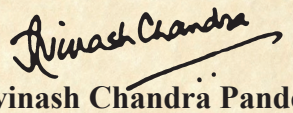
Major thrust was given to streamline and create transparency in the process beam time requests submission process by the accelerator user. The whole process is now online from 67th AUC onwards. Users are required to register through online portal and submit the proposals for obtaining beam time. All the proposals are evaluated online / offline by internal and external reviewers.

A new organizational chart was made based on Group of Functional Activities & Classification with the objective that every staff member will be part of a specific/support group, to avoid person dependency, to create human resource pool, equitable distribution of Manpower to name a few. Each and every device / facility is assigned to a group to ensure accountability and multilayer trained manpower for operation, service & repair.

Process has been initiated to have Annual Performance Appraisal Reports (APAR) fully online. A module is under development and is expected to be installed by February 2010. IUAC has also expedited the efforts to revamp the in-house developed Enterprise Resource Planning (ERP) package to make in CERT compliance so that our email system along with ERP can be migrated to NIC server.

Centre has started preparation of the new audit-compliant CMS based website as per GOI Guidelines. The website will be bilingual (English/Hindi) having role based content workflow. Website and applications will be developed in open source platform/technology with PHP technology & PostgreSQL Database and all the contents from existing website will be migrated to new website. Website/Application will be integrated with email/SMS gateway for notification at required stages.

I trust that you will enjoy reading this account of IUAC's activities in 2018-19 and that it will provide you with new insights into the work of various programs of our Centre.



(Avinash Chandra Pandey)
Director