

# **Centre for Interdisciplinary Research and Innovations (CIRI)**

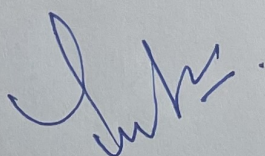
**UNIVERSITY OF KASHMIR**

Hazratbal Srinagar- 190006 (J&K)

NAAC Accredited Grade "A+"

The Centre for Advanced Instrumentation for Research (CAIR) at the University of Kashmir was set up with an aim to establish state-of-the-art and high throughput technologies to foster and uplift the research ecosystem in the region which in-turn would add to the skilled India initiative of the Government of India. Established in the year 2020, the center is already equipped with many high-end instruments boosting the research landscape within and nearby institutes of the University. These facilities are accessible to all the researchers in the region through an online booking portal. The user base extends across various institutions in the UT of J&K such as the National Institute of Technology (NIT), Sher-i-Kashmir Institute of Medical Sciences (SKIMS), Islamic University of Science and Technology (IUST), Central University of Kashmir (CUK), and Government Medical College Srinagar. Through this facility, University of Kashmir is handholding the higher education institutes in the region to uplift their research and education. The Centre continuously offers various outreach programs to college and school children to inspire and imbibe research interest in their minds.

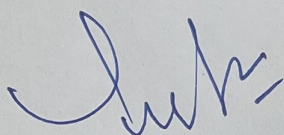
Presently, the Centre has a Mass spectrometer, Confocal Microscope, Thunder Imager, Flow Cytometer and X-ray Diffractometer besides other smaller instruments like UV-Vis spectrophotometer, Glove Box, Rotary Shakers, incubators and several high-speed centrifuges. Moreover, an advanced tissue and cell culture facility with several biosafety cabinets and CO<sub>2</sub> incubators is operational allowing preservation and culturing of human tissues and cell lines for various experimental purposes. The center also has different reactors enabling for CO<sub>2</sub> utilization into value added products. These facilities have been established by the generous funding from DBT-BUILDER, RUSA and DST-PURSE schemes. This facility is helping the students, faculty and other researchers from within and outside University to perform high-quality research. secure funding for research projects that involve advanced cutting-edge research and address local problems in





health, environment, agriculture, and other fields. Through this facility University of Kashmir is playing a pivotal role in transforming the research landscape of the region. By providing state-of-the-art facilities and fostering a collaborative environment, the university has empowered researchers to push the boundaries of scientific knowledge and contribute to scientific innovations and discoveries.

The mass spectrometry facility harbors an advanced Exploris -480 Orbitrap instrument connected to a robotic HDX module and a LC- nano system. This facility is one of the first kind in Indian academia having options for both structural and traditional proteomics under one roof. With this facility the researchers are able to characterize structure-function of proteins and nucleic acids and also explore the whole proteome pathways and networks in biological systems. The imaging facility at CAIR has a Thunder Imager, Confocal Microscope and several other accessory microscopes that provide a full suite to investigate biological systems at high resolution. This facility has the capability to image both in-situ and in-cellular structures. The FACS -sorter facility at CAIR has a BD FACSAria Fusion Flow Cytometer capable to sort and quantify different cell populations using different laser combinations. The XRD instrument from Anton Paar enables the characterization of various materials and is equipped with capabilities for temperature-dependent PXRD as well as small-angle measurements. The glovebox from MBraun facilitates the execution of various air- and moisture-sensitive reactions under anaerobic conditions.



Coordinator