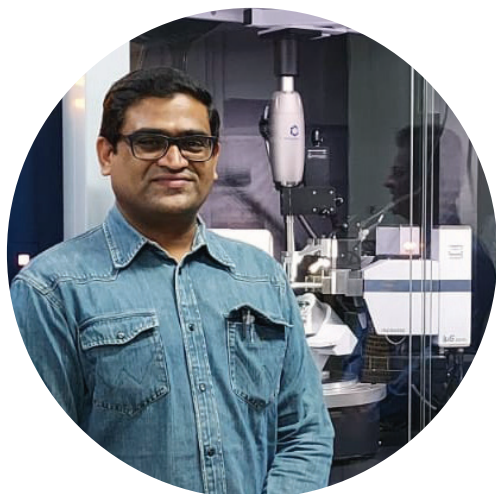


SINGLE CRYSTAL X-RAY DIFFRACTION

D8 VENTURE - An easy-to-use system in a cutting-edge environment



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“The D8 VENTURE has replaced our outdated CCD-based diffraction system. Today, we no longer reject any samples.”

A cutting edge academic eco-system

The Indian Institute of Technology Hyderabad (IITH) was founded within the second IIT founding cycle initiated by the Indian Government. We offer more than 40 programs in academic education. Our vibrant research culture is evident in numerous patents and publications.

It is our mission to offer a cutting-edge academic ecosystem for interactive learning and first-class research, allowing our students and faculty to translate their dreams into realities. Strong national and international collaborations are an important building block within this concept. The chemistry department is committed to high-quality research and education, with investments in modern laboratories to meet current scientific and technological demands.

Our new D8 VENTURE is one of the latest assets within this program. Our new single-crystal

X-ray diffractometer is equipped with two high-intensity μS 3.0 microfocus sources for Cu- and Mo-radiation and a PHOTON detector. The D8 VENTURE has replaced our outdated CCD-based diffraction system. The outstanding performance of the D8 VENTURE system enables us not only to serve the ever-growing demand from our own site but also to provide service to a handful of external collaboration partners.

High quality data sets from day one

As of day one, we achieved high-quality data sets from our organometallic samples using the D8 VENTURE. Changing the wavelength only takes a few minutes. We can measure our highly absorbing Bi- or Pb-complexes using Mo-radiation and in the next minute run a pure organic sample with Cu-radiation. We routinely determine the absolute configuration of these structures. With all measurements, but with Cu-radiation in particular, we take advantage of the large 140cm^2 active area of



Prof. Ganesan Prabusankar and members of the Bruker team in front of the D8 VENTURE at IIT Hyderabad.

the PHOTON detector. The μS 3.0 sources impress us with high reliability and even more with the high intensity they provide. This is extremely helpful when it comes to weakly diffracting: today, we no longer reject any samples. We are still impressed by the short time it takes to collect data from even weakly diffracting samples.

The best software supports outstanding hardware

What would be the best hardware without a well-functioning, nice software package that comes with it? The Bruker system is really outstanding here. In contrast to packages, we have used before, Bruker's APEX4 software is extremely user-friendly. I receive consistent feedback from my students on how easy the software is to understand and how much more transparent it is in all steps of the structure determination. The black box approach which often prevented us in the past from successfully working on challenging samples is gone. We are using Bruker's new STRUCTURE NOW routine for the efficient evaluation of routine structures. As much as the flexibility offered by the APEX4 software, my students appreciate the overall flexibility of the D8 VENTURE.

D8 VENTURE adds to the success of IIT Hyderabad

Before we made the decision to buy the D8 VENTURE, I contacted some of my previous supervisors. Unisono they recommended Bruker and pointed out the excellent service and application support they have received. Fortunately, with the D8 VENTURE, my group also became a member of Bruker's large single-crystal diffraction family.

In summary, the D8 VENTURE has made a small but nonetheless important contribution to IITH's overall goal to excel in academics, research, and technology development and to achieve with perseverance higher benchmarks year after year.