BEATS – Microtomography Beamline for Science, Engineering and Industry

Fareeha Hameed

BEATS Beamline Scientist, SESAME, Jordan

BEATS is the microtomography beamline at the SESAME synchrotron in Jordan. This is a newly developed beamline that started its user operation in 2024. BEATS has been developed under the EU Horizon 2020 project in collaboration with several European scientific facilities. We benefit from the advice and support of several international organizations, including UNESCO. Two-, three- and four-dimensional imaging can be performed at the BEATS beamline using both the monochromatic and polychromatic modes. An X-ray beam with high intensity and flux, along with good spatial coherence, makes phase contrast imaging possible based on the principle of free space propagation. A state-of-the-art computing infrastructure provides the opportunity to acquire, reconstruct, and analyze huge datasets, which is essential for tomography measurements. Hence, BEATS can be utilized for a wide range of applications which include several fields of science, engineering, and industry.

Keywords: Microtomography, Phase-contrast imaging, Non-destructive techniques, Three-dimensional imaging, Synchrotron X-ray radiation