

# Illuminating Biomolecular Complexity: X-ray Free Electron Lasers and Vibrational Spectroscopies for Protein, Aggregates, and Cellular Architectures



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## TRISS: A Versatile Tool for Unraveling Molecular Mechanisms

TRISS (TRapped Ion Spectrometer Setup) is a novel experimental station at the MAX IV synchrotron facility, designed to investigate fundamental molecular processes relevant to biomolecular and biochemical physics. TRISS uses an electrospray ionization (ESI) source to create ions, which are then fragmented using photons, electrons, or gas. The TRISS setup combines a segmented linear ion trap (the Omnitrap) with time-of-flight mass spectrometry. The Omnitrap's design enables precise manipulation of ions, including their storage, isolation, and fragmentation. By providing detailed insights into how molecular structures break down, TRISS contributes to a deeper understanding of fundamental molecular interactions, with applications in areas such as radiation-induced damage.

### Scholarship eligibility

yes

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