Satellite Workshop @ DESY/XFEL UM 2022, 25 January 2022 09:00-18:00 CET.

"Lighting up Mass Spectrometry – Structural investigations of biological systems using lasers"

When thinking of Mass Spectrometry, the first picture that comes to mind is analysis of isotopes, small molecules and proteomics. However, Mass Spectrometry has entered the field of structural analysis of proteins and protein complexes already well over thirty years ago when John Fenn discovered electrospray ionization is applicable to large molecules. From then on, the field developed a range of comprehensive methods and instrumentation expanding the field of structural biochemistry. Additionally, lasers and light sources in recent years have improved in intensity allowing to probe low density targets of single molecules such as gas phase ions. In this workshop, current possibilities on merging the two fields are to be discussed, exciting new research and future developments addressed.

To understand a chemical or biological process, insight into structure and movement is crucial. We would like to draw attention to mass spectrometric methods, especially in combination with photons, be it scattering, fragmentation or spectroscopy, as well as the new field of mass photometry. Light can provide additional insights into structure beyond mass and ion mobility, i.e. gross shape, as the interaction depends on subtle changes in structural arrangements. Future applications are manifold and cover all molecules relevant to life, including the four main classes proteins, nucleic acids, glycans and lipids. Therefore, this is of general interest, way beyond analytical aspects, facilitating to understand biochemical processes.

The workshop is organized by the MS SPIDOC consortium (Horizon 2020 grant No 801406) inviting international experts. The workshop will give a comprehensive overview of the field of structural mass spectrometry coupled to different light sources from an experimental and theoretical perspective. Current important research and instrument developments as well as future ideas and applications will be highlighted.

Call for Abstracts:

During our workshop we have one session which is open for applications. We would like to invite you to submit your abstracts for a short presentation (10+5 minutes discussion).

Please send your abstract to **ms_spidoc_info@xfel.eu** by **10 January 2022**.