

# Matrix-assisted Laser Desorption/Ionization Time-of-Flight (MALDI-TOF) at the EPSRC National Mass Spectrometry Service Centre at Swansea

## Standard analyses available

- *Biomolecules*: peptides, proteins, and oligonucleotides. Samples should be purified properly prior to submission (see sample clean up procedures).
- *Polar organic compounds*: modified carbohydrates, calixarenes, and dendrimers.
- *Non-polar organic compounds*: porphyrins, phthalocyanines, and calixarenes.
- *Metal compounds*: coordination complexes and organometallics.
- *Negative ion mode*: fullerenes and acidic compounds.
- *Insoluble samples*: Includes samples that are only soluble in high-boiling point solvents, which are unsuited to standard MALDI sample preparation methods.

## Analyses available by request

The following analyses are only available after an initial consultation to discuss the details of a sample or series of samples, in order to determine if MALDI-TOF is appropriate, or because the analysis may take up an unusual amount of analyst time. Please contact us before submitting any samples:

- *Polymers*: Successful analysis depends heavily upon the average molecular weight and polydispersity of the sample. These properties can be measured by gel permeation chromatography (GPC)/size exclusion chromatography (SEC), and whenever possible GPC data must accompany any polymer sample submitted to the NMSSC. If your institution does not have GPC instrumentation, then arrangements should be made with an institution that does or contact [RAPRA](#). If the properties of the polymer mean that GPC analysis is impossible, then please contact us to discuss the specifics. Polymer microstructure is less important, but may also affect the analysis.
- *Copolymers*: These samples are exponentially more complex than homopolymers, hence there is a lower tolerance with respect to average molecular weight and polydispersity values.
- *Accurate mass measurement*: This service is usually reserved for compounds that cannot be ionised by another technique and between 400 to 1000 Da.
- *Post-source decay (PSD) and Collision-induced dissociation (CID)*: peptide sequencing and direct measurement of polymer endgroups.

## Consultancy service

The scientific community is welcome to contact us to discuss any MALDI-TOF issue.