

# Our chemical measurements

## Detailed capabilities



### Sample prep / Separation

- Assorted Nano LC, HPLC, uPLC (4) and multidimensional GC chromatography equipment
- ESI Laser 266 nm (2018) for bio-imaging and Laser 213 nm (routine imaging)

### Elemental analysis and speciation

#### ICP-MS

- **Agilent 8900 ICP-MS with dynamic reaction cell and fast detection capability (2017)**
- Agilent 7700 ICP-MS system with collision reaction cell
- Two Agilent 8800 ICP-QQQ-MS with dynamic reaction cell
- Thermo Scientific sector field double focusing ICP-MS (Element 2)
- **Tofwerk AG ICP-TOF 2R (2018)**
- Malvern particle tracking analysis system (NS500 NTA) for nanoparticle characterisation
- Postnova Analytics multi-angle light scattering detector to be coupled with FFF and other fractionation techniques for nanoparticle characterisation

#### ICP-OES

- Agilent ICP-OES (5100)

#### Isotope Ratio

- Thermo multi-collector ICP-MS (Neptune)
- Thermo gas source IRMS (Delta V) with capability for hydrogen, oxygen, carbon and nitrogen isotope ratio measurements and when combined with GC and HPLC, it delivers compound-specific isotope ratio measurements

#### Hyphenated MS system (speciation)

- Agilent high capacity 6330 HPLC- ion trap MS with ESI and APCI sources, which is used in combination with HPLC and ICP-MS for speciation analysis

### Organic Analysis

#### MS systems

- ABSciex 4000 Q-trap LC-MS/MS
- Waters Quattro Premier LC-MS/MS
- Thermo Trace DSQ GC-MS
- Agilent 6530 QTOF
- Agilent 5975C GC-MS
- Agilent 6490 LC-MS/MS
- **Waters Synapt G2-Si QTOF (2017)**
- Waters Acquity Qda
- Thermo Vantage LC-MS/MS
- Waters LCT TOF
- **Waters Xevo G2-S QTOF (2017)**
- Bruker Ultraflex II MALDI TOF/TOF
- **Water Xevo Tq xs (2017)**
- **Thermo Fisher Scientific Exactive (plus) – orbitrap (2018)**
- **Agilent 7010 GC-MS (2018)**

#### Others (NMR, Thermal analysis and sample purification)

- **Bruker 600 MHz NMR (2016)**
- TA Q5000 TGA coupled to Pfeiffer Thermostar MS
- Mettler Toledo 823e differential Scanning Calorimeter
- Semi-preparative LC and Fraction collector
- Metrohm oven coulometric Karl Fischer titrator
- Mettler toledo DL50 autotitrator (alcohol measurement)