



Manuel Liebeke, PhD, contact information <http://manuelliebeke.weebly.com>

Title: From structure to function - locating metabolites with high resolution mass spectral imaging approaches

Abstract: Recent advances in mass spectrometry imaging techniques enable us to measure the spatial distribution of compounds in tissue. This opens a view into a complete new world – the improvements in sensitivity and spatial resolution make it now possible to get simultaneous information from hundreds of metabolites present in specific compartments of tissues or even in single cells. But “one size fits all” is not applicable for MS imaging, here different mass spectral imaging techniques will be presented and results will be shown how they extend our knowledge about biological systems.

Results from a combination of established metabolomics tools and mass spectral imaging techniques (MALDI-MS, DESI- MS and TOF-SIMS) on invertebrate tissues will give insights into the explorative journey towards the function of a new class of metabolites.

Biography: Dr. Liebeke is a research associate at Imperial College London in the section of Computational and System Biology, led by Professor Jeremy Nicholson, one of the leaders in human metabolomics research. Dr. Liebeke obtained his PhD in pharmaceutical biology with the thesis “Establishment and application of techniques for microbial metabolomics” at the University of Greifswald. He joined Imperial College in 2010 as a post-doctoral fellow to study soil-invertebrate metabolism using mass spectral and nuclear magnetic resonance based methods. Since 2011 he applied different MS imaging techniques to take on the next step in metabolomics - spatial organization of metabolites in tissues.