conferenceseries.com

4th World Congress on

MASS SPECTROMETRY June 19-21, 2017 London, UK

The key parameters impacted surface-assisted laser desorption/ionization-mass spectrometry

Yuliya E Silina

INM-Leibniz Institute for New Materials, Germany

The developments within nanomaterial technology since almost 20 years caused an increased research output in many application fields including surface assisted laser desorption/ionization mass spectrometry (SALDI-MS). The study of the key parameters impacted SALDI-MS is of broad interest in the field of forensics, drug discovery, bio- and environmental analysis. Unfortunately, SALDI-MS still remains in some ways a kind of art due to multiple factors affecting desorption/ionization processes. Here we demonstrate how fundamental physicochemical parameters of materials such as conductivity, restructuring effects, surface acidity/ basicity, morphology and thickness, light absorbance and presence of reagent ions impact the ion formation in atmospheric pressure laser desorption/ionization properties of the analyte that eventually leads to the modified LDI-signal. Our findings were independently supported by means of Raman spectroscopy, Scanning Electron Microscopy, Transmission electron microscope, UV-and X-ray diffraction analysis. The obtained knowledge was applied for the synthesis of nanostructured targets for SALDI-MS allow profiling of regular and skimmed lactose-free milk samples without conducting the complex sample pretreatment and routine separation. The simplicity of this LDI-MS approach holds an excellent potential in applied research as a rapid instrument for efficiency/completeness of technological process control or detection of milk adulteration.

Biography

Yuliya E. Silina has a doctorate in Analytical Chemistry. She is a principal investigator of a research team focusing on developments in microfluidics, test-methods of analysis, drug discovery, bio- and environmental sensing at *Leibniz Institute for New Materials* (Saarbrücken, Germany). She has published more than 30 papers in reputed journals and holds 11 patients for her inventions.

yuliya.silina@leibniz-inm.de

Notes: