

## S19-7 Development of a new sample introduction interface of plasma spectrometry for omics researches

○Kazumi INAGAKI<sup>1</sup>, Shin ichiro FUJII<sup>1</sup>, Akiko TAKATSU<sup>1</sup>, Yanbei ZHU<sup>1</sup>, Koichi CHIBA<sup>1</sup>

<sup>1</sup>AIST/NMIJ

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Inductively coupled plasma mass spectrometry (ICP-MS) is one of the most powerful measurement techniques not only for quantitative analysis but also for speciation analysis of trace elements. Recently, hyphenated systems of micro- or nano-flow separation techniques with ICP-MS such as capillary electrophoresis (CE) and capillary liquid chromatography (LC) with ICP-MS have been frequently applied to speciation analysis of a small amount of sample. In addition, the hyphenated systems are also applied to the high sensitive and precise determination of protein and nucleic acid samples by measuring molecular specific elements such as phosphorous and sulfur and thus are growing as powerful complementary tools in “omics” research field including Toxicology-metallomics. For the hyphenation systems, a special interface that provides high sample introduction efficiency to the plasma without deterioration of separation efficiency is inevitably required. Several researchers have developed the interfaces, but their interfaces have several technical problems to overcome. Hence, we have developed a new interface for coupling CE and capillary LC with ICP-MS, and the interface has been applied to the speciation of arsenic compounds and to the precise determination of nucleic acid samples by measuring of phosphorus in the structure. We will present a state of the art of the developing of a high efficiency sample introduction interface and their applications.