

Imaging of Individual Nanoparticles by Mass Spectrometry

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Summary

The detection of single microscopic entities has always been a challenging subject. Laser-assisted mass spectrometry methods can offer chemical information as well as imaging capabilities. Here, we demonstrate the mass spectrometry imaging of individual metal nanoparticles using two ionization techniques: laser ablation inductively coupled plasma (LA ICP) [1] and subatmospheric pressure laser desorption/ionization (LDI) [2,3]. The principles allowing the detection of single nanoparticles are revealed, and the detection efficiency is discussed. The potential applications of the methods are demonstrated in detecting nanoparticles on biological tissues and imaging viable cells on 3D aggregates of human colorectal carcinoma cells.

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