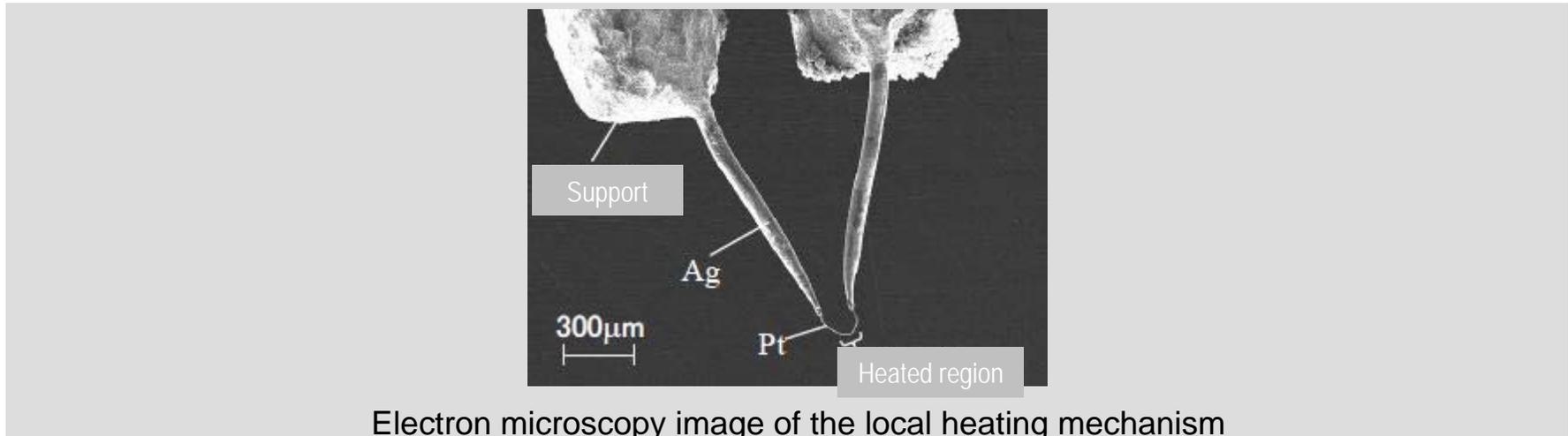


2009/3/27 Release

Mass spectrometry technique for measurement of an organic particle of about 3 micrometers, 15 picograms
Applied to environmental measurements and fine organic particle detection in manufacturing processes



Electron microscopy image of the local heating mechanism

Hitachi, Ltd. has developed Mass spectrometry*¹ with a sensitivity of 3 micrometers or 15 picograms that can measure a fine organic particle (1picogram is an trillionth of a gram). This technology can achieve high sensitivity with low noise components by using an original local heating mechanism to heat and evaporate only a measurement sample. It can be used to determine the chemical structure of a fine organic particle, which has always been difficult to measure. Therefore it is expected to be used to measure suspended particulate matter and inspect fine organic particles in device manufacturing processes.

*¹ Mass spectrometry : Ionizes a sample particle and splits it in according with the mass/charge ratio by using an electric and magnetic mechanism for the mass number. Mass spectrometry can be used to estimate a chemical structure and determine the quantity of a component.