SHIMADZU
Excellence in Science

C143-E014

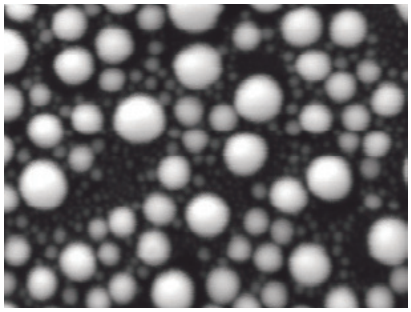
Electron Probe Microanalyzer

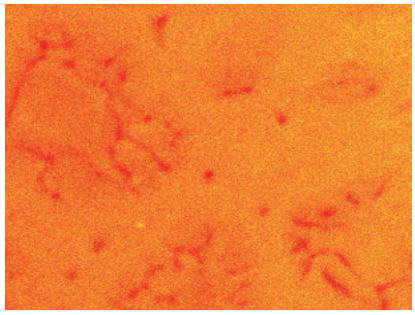
EPMA-8050G

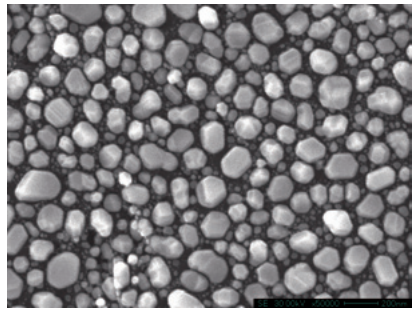
Debut of the Grand EPMA

With a Cutting-Edge FE Electron Optical System, the Ultimate in Advanced Shimadzu EPMA Analysis Performance

- The high brightness schottky emitter deployment
- Realize a high irradiation electric current and high-resolution coexistence
- Maintain X-rays takeoff an angle of 52.5 degrees
- It can carry a high sensitive (4 inches) spectroscope to up to 5ch
- Incorporate a high illumination optical system

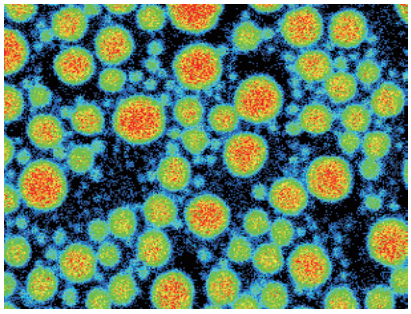






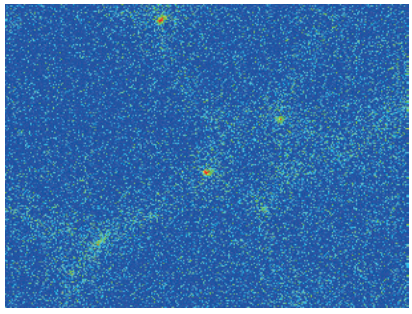
Highest Secondary-Electron Image Resolution of 3 nm

This is a sample observation of gold particle deposition on carbon. A maximum resolution of 3 nm (at 30 kV) is achieved. The beam is focused even at a comparatively large beam current, so a smooth, high-resolution SEM image is easily obtained.



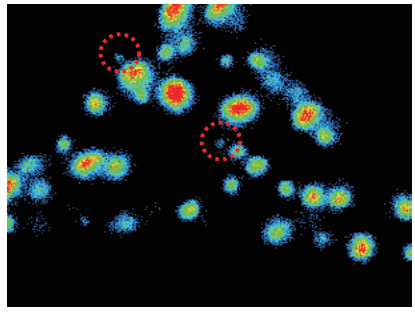
Ultra High Resolution Mapping

A mapping analysis of Sn balls on carbon was performed at a magnification of 30,000×. Even Sn particles a mere 50 nm in diameter, visible in the SE image (Upper fig.), can be confirmed precisely in the X-ray image (Lower fig.).



Ultra High Sensitivity Mapping

A mapping analysis of stainless steel was performed with a beam current of 1 μA at a magnification of 5,000×. (Upper fig.) The distribution of phases with slightly different Cr concentrations is precisely captured. (Lower fig.) The system succeeds in visualizing a distribution of Mn content under 0.1 %.



Applications : Distribution of Ag in Lead-Free Sold

This data is from a mapping analysis of areas in lead-free solder containing a large amount of Ag. (Accelerating voltage: 10 kV; beam current: 20 nA) It is evident that the particles with a diameter of about 0.1μm, indicated by the red dashed lines, are also Ag particles.

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