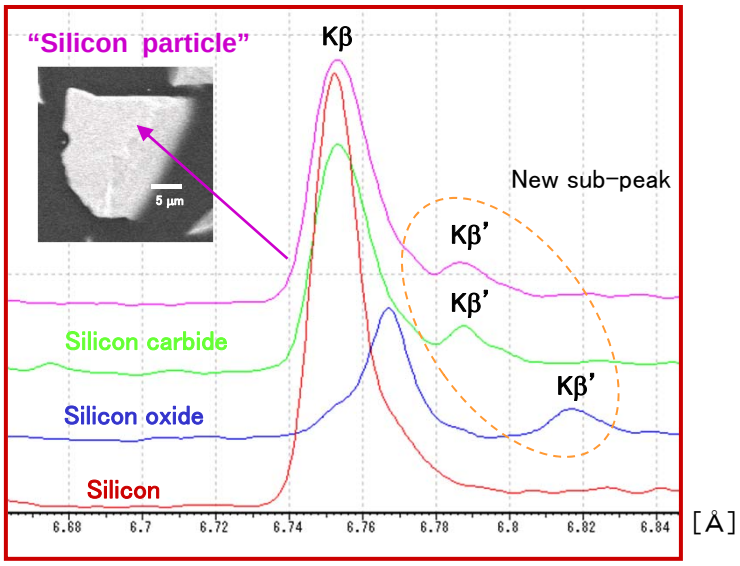
Analysis of Chemical State in Micro Area by EPMA

In general, EPMA is used for the elemental analysis in the micro area, because of the high lateral resolution. In addition, It is possible to analyze the chemical state of detected element by using chemical shifts and changes of spectral shape in the WDX spectra. This shows the examples of the analysis of chemical state by EPMA.

Analysis of chemical state using sub-peaks

【 Advantage 】
- Analysis in the micro area
- High sensitivity of soft X-ray
- Not limited to crystalline state

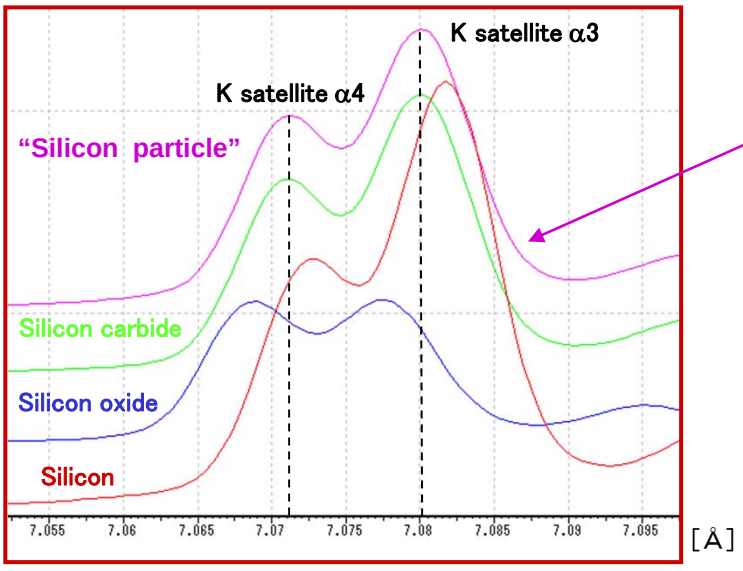
【 Disadvantage 】
- Possibility of chemical changes by irradiation of the electron beam



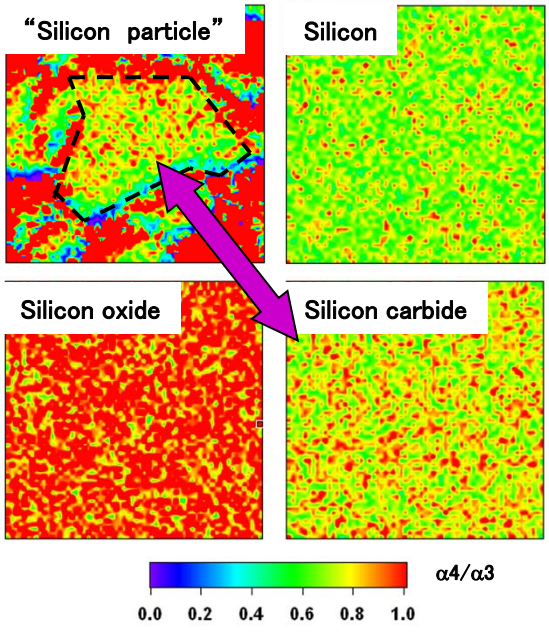
Kβ spectra of the silicon compounds

Possible to characterize Si compounds

Analysis of chemical state using satellite peaks



Satellite α4/α3 ratio of silicon compounds



State map of silicon

Possible to show state map of Si compounds