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X-ray elemental imaging with scanning and projection modes in the laboratory

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A nondestructive elemental imaging is important for environmental, forensic, and material sciences. In this seminar, a few approaches for x-ray elemental imaging in the laboratory at OCU will be introduced.

1) Scanning type micro-XRF method including confocal 3D-XRF

A confocal micro XRF instrument was developed using two polycapillary focusing lenses in the laboratory. This instrument showed a spatial (depth) resolution of 14 micro-meters for Au Lb. Several applications of confocal micro-XRF to forensic samples, industrial samples, and painting samples, will be shown.

2) Projection type XRF imaging (WD-XRF imaging)

The drawback of the confocal micro-XRF will be a long acquisition time. Thus, a projection type XRF imaging has been studied. In my laboratory, we have studied the combination of WD-XRF, straight polycapillary optics, and x-ray CCD camera. The preliminary elemental images will be shown.

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