

## Non-destructive analysis and characterization of cosmic dust samples by X-ray fluorescence analysis

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A great number of cosmic dust samples will be brought back from the Antarctica in the spring of 1999. We have developed an X-ray fluorescence (XRF) spectrometer specially designed for nondestructive characterization of the cosmic dusts. This instrument enables us to carry out sequential and automatic XRF analysis of 36 samples using a computer controlled sample stage. With conventional X-ray source, it was possible to analyze trace elements in ppm level. Utilization of synchrotron radiation as an X-ray source is more effective for detection of various trace elements (e.g. Mn, Rb, Sr, Mo) and allows us to classify the cosmic dusts from their compositional characteristics. Thus this technique will be suitable for deduction of the history of cosmic dusts from the trace element data.