

## **New Type of Targets for Projection X-Ray Microscopy of Samples consisting of light Elements**

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In the case of projection X-ray microscopy, it is necessary to use suitable target to give long wavelength X-rays for good image contrast to the minute biological samples which consist of light elements. We reported that Ti k-line : 0.27 nm and Ge L-line : 1.04 nm are good choice in such a case. It is rather difficult, however, to select suitable metal elements as the target to give much longer wavelength soft X-ray for sufficient image contrast utilizing absorption edge effect because desired elements from viewpoint of wavelength are not always stable ones having high melting point and electric conductivity like F, S, Cl. If we consider their chemical compounds, freedom of the choice will be increased. From this point of view, we consider targets of chemical compounds for imaging of biological samples such as hair, chromosome and so on. As possible combinations of the compound targets, MoS<sub>2</sub> for DNA, AgS for Al, Si, P, MgF<sub>2</sub>, CrF<sub>3</sub> for O (water droplet) are taken into consideration. These compound targets are formed by vacuum evaporation or sputtering on thin Be substrate which works as the vacuum seal window and finally electric conductivity is given to them by evaporation of carbon or Be thin layer to prevent charging up. X-ray images of human chromosome were obtained with the compound target. Some other experimental results will be reported.