

Figure 1: Schematic showing the position of an ALD-coated window in an imaging setup.

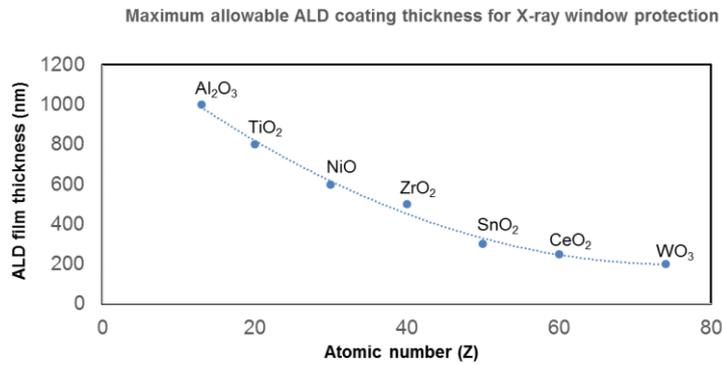


Figure 2: Different materials can be used for protection with maximum allowable thickness decreasing as atomic number of constituent elements increases. The data in this graph shows maximum thicknesses for selected materials.

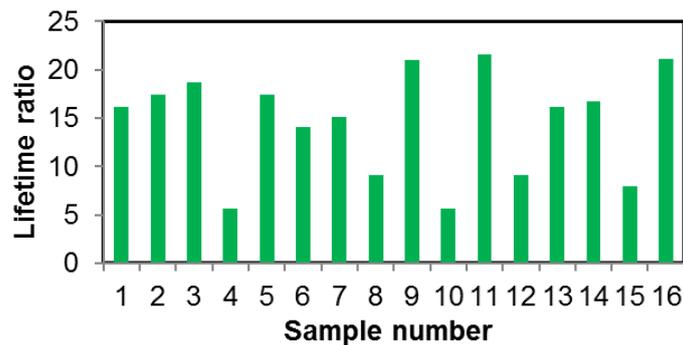


Figure 3: Lifetime test results for sixteen ALD coated Be X-ray windows. The lifetime of the window was measured as the time the Be window could hold a He leak rate of less than 10^{-11} Torr. The lifetime ratio is the ratio of lifetimes of coated to uncoated windows.

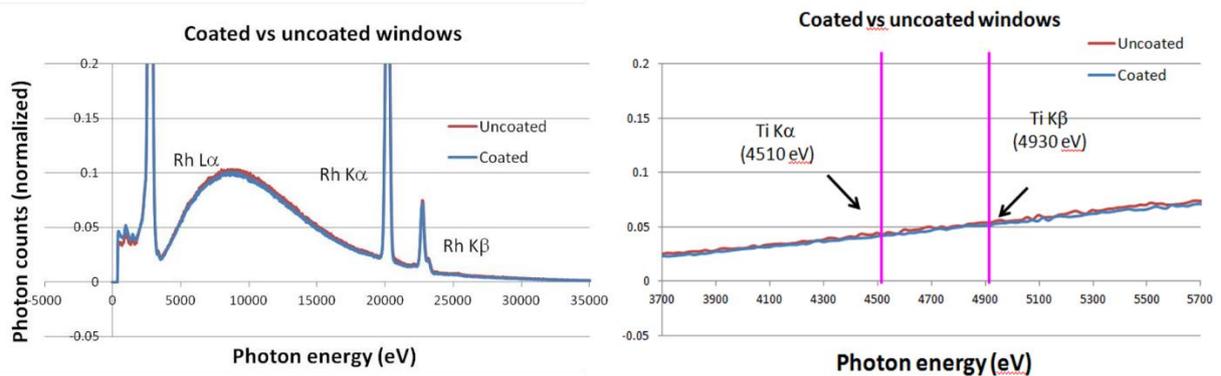


Figure 4: Output X-ray spectra for tubes with uncoated (red) and TiO₂ coated (blue) windows. Comparison shows no Ti fluorescence lines from the coating material in the spectrum as can be seen from the magnified region of Ti K_α XRF peak. Emission peaks at 2.7 keV, 20.21 keV, and 22.72 keV correspond to rhodium L_α, K_α, and K_β lines, respectively.