Supplementary information

Depth resolved oxidational studies of Be/Al periodic multilayers investigated by X-ray photoelectron spectroscopy

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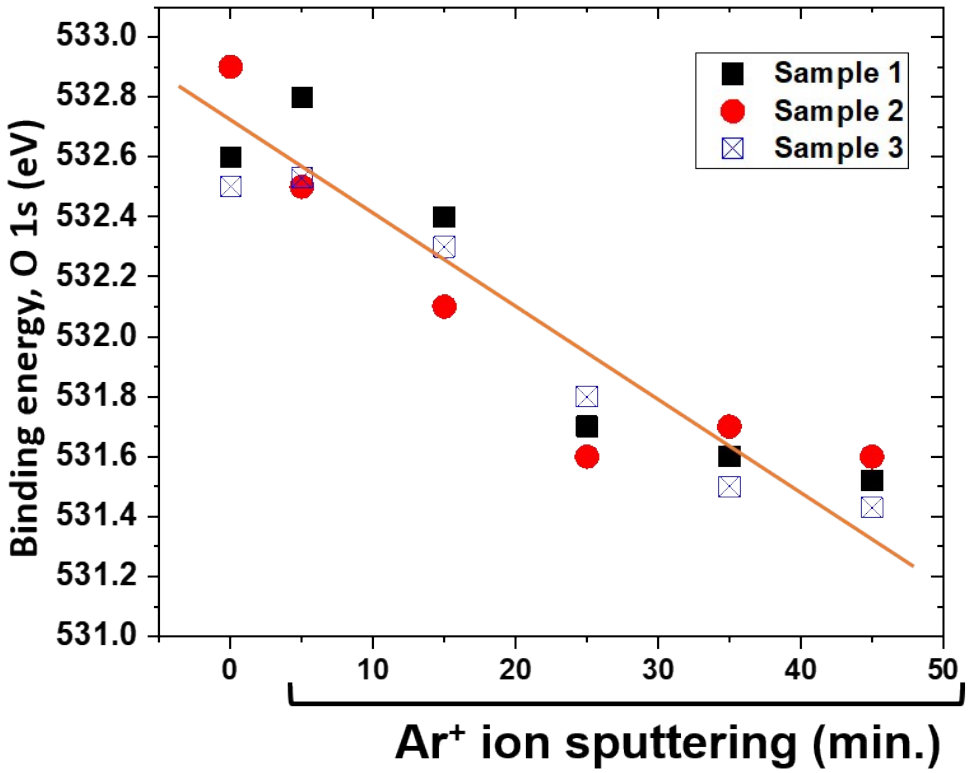
Fig. 1-SI. O 1s peak shift for as – deposited (0), and Ar^+ ion sputtered samples for 5, 15, 25, 35 and 45 minutes.

Fig. 2-SI. Plasmon shift in XPS spectra of $Be_{7.86}/Al_{0.62}$ (sample 1): $\hbar\omega_p$Be and $\hbar\omega_p$Al – first order plasmon of Be and Al, respectively; $2\hbar\omega_p$Be and $2\hbar\omega_p$Al – second order plasmon of Be and Al, respectively; $\hbar\omega_{ps}$Al – surface plasmon of Al.

Fig. 3-SI. Plasmon shift in XPS spectra of $Be_{4.44}/Al_{4.10}$ (sample 2): $\hbar\omega_p$Be and $\hbar\omega_p$Al – first order plasmon of Be and Al, respectively; $2\hbar\omega_p$Be and $2\hbar\omega_p$Al – second order plasmon of Be and Al, respectively; $\hbar\omega_{ps}$Al – surface plasmon of Al.

Fig. 4-SI. Plasmon shift in XPS spectra of $Be_{1.62}/Al_{6.90}$ (sample 3): $\hbar\omega_p$Be and $\hbar\omega_p$Al – first order plasmon of Be and Al, respectively; $2\hbar\omega_p$Be and $2\hbar\omega_p$Al – second order plasmon of Be and Al, respectively; $\hbar\omega_{ps}$Al – surface plasmon of Al.



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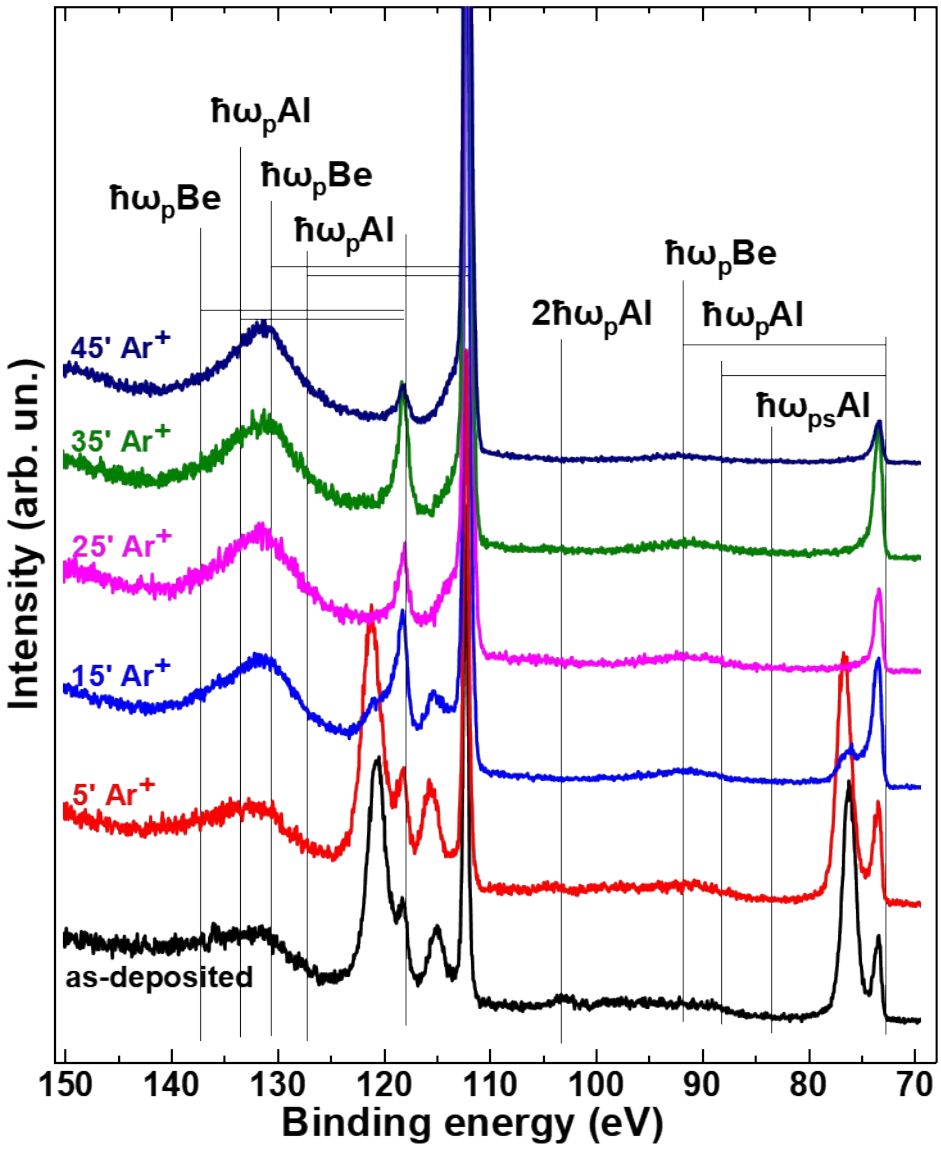

Fig. 2-SI. Plasmon shift in XPS spectra of $Be_{7.86}/Al_{0.62}$ (sample 1): $\hbar\omega_p$Be and $\hbar\omega_p$Al – first order plasmon of Be and Al, respectively; $2\hbar\omega_p$Be and $2\hbar\omega_p$Al – second order plasmon of Be and Al, respectively; $\hbar\omega_{ps}$Al – surface plasmon of Al.

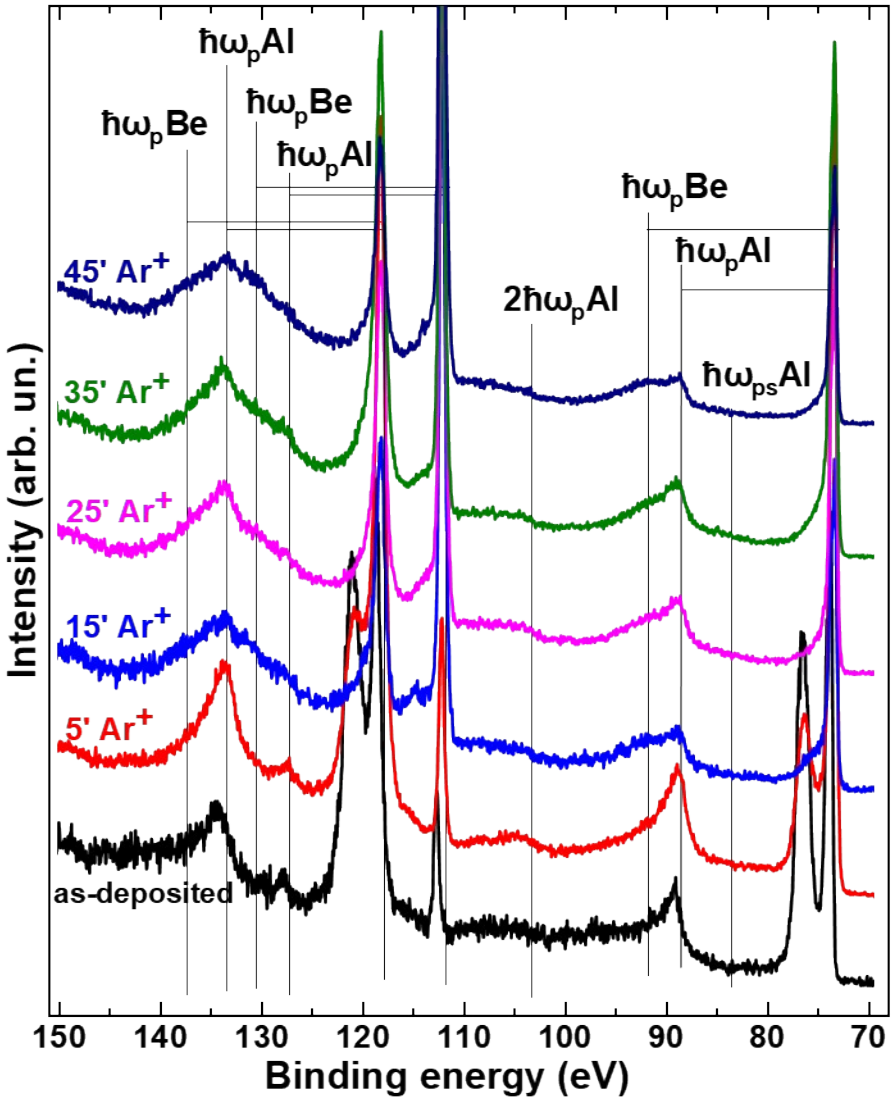

Fig. 3-SI. Plasmon shift in XPS spectra of $Be_{4.44}/Al_{4.10}$ (sample 2): $\hbar\omega_p$Be and $\hbar\omega_p$Al – first order plasmon of Be and Al, respectively; $2\hbar\omega_p$Be and $2\hbar\omega_p$Al – second order plasmon of Be and Al, respectively; $\hbar\omega_{ps}$Al – surface plasmon of Al.

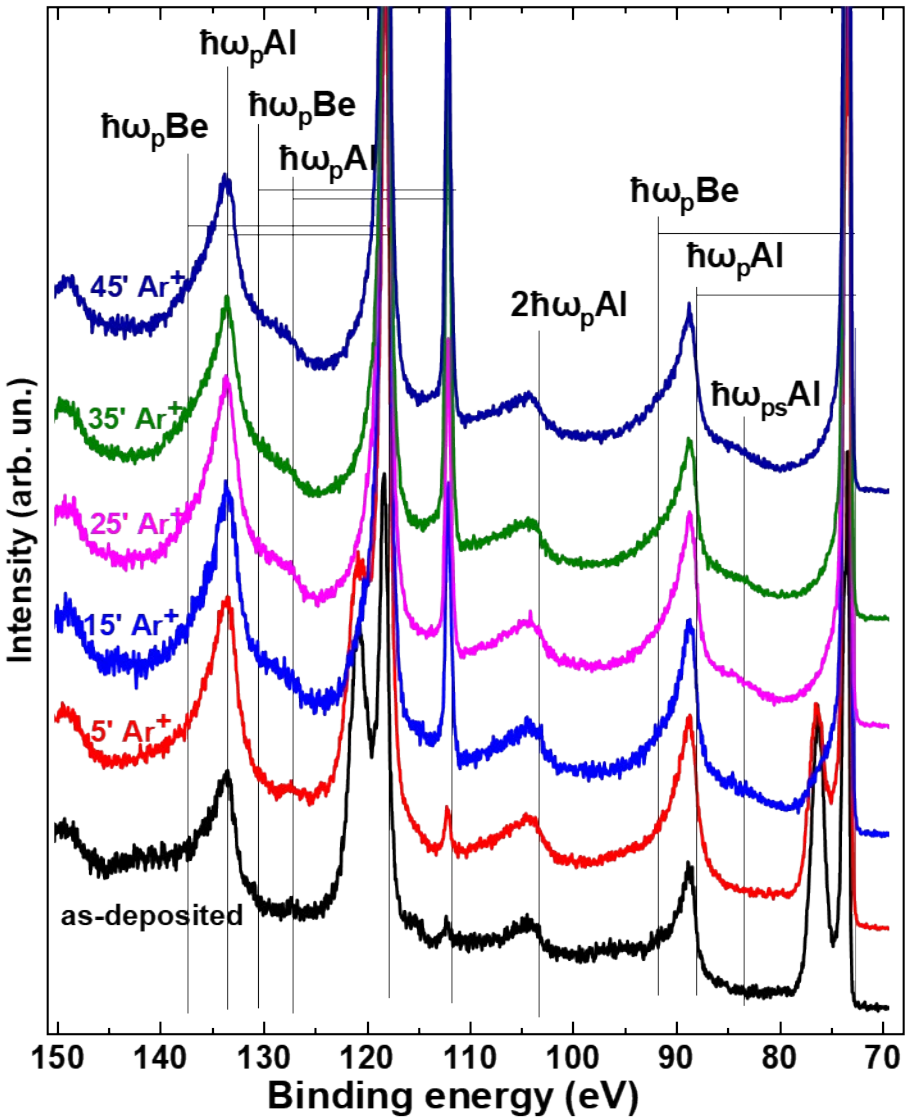

Fig. 4-SI. Plasmon shift in XPS spectra of $Be_{1.62}/Al_{6.90}$ (sample 3): $\hbar\omega_pBe$ and $\hbar\omega_pAl$ – first order plasmon of Be and Al, respectively; $2\hbar\omega_pBe$ and $2\hbar\omega_pAl$ – second order plasmon of Be and Al, respectively; $\hbar\omega_{ps}Al$ – surface plasmon of Al.