Figure 1 shows measured Ge 3d and Ta 4f XPS spectra fitted using spin orbit splitting and Voigt shapes using CASA XPS programme.

Figure 2 shows Ge 3d measured XPS peaks for Ge substrate and S-treated Ge substrate. The fitting was done using spin orbit splitting and Voigt shapes using CASA XPS programme.

Figure 3 gives XPS data from valence band region for four different samples, allowing for the valence band maximum to be extracted.

Figure 4 is energy loss O 1s XPS core level spectrum derived from measured O 1s spectrum, by assigning the O 1s peak centroid binding energy value to be 0 eV. This allows for band gap to be extracted.