1. Supplementary information

Interface mediated semiconducting to metallic like transition in ultrathin Bi$_2$Se$_3$ films on (100) SrTiO$_3$ grown by molecular beam epitaxy

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![XPS spectra](image)

**Figure S1:** XPS spectra for pristine and vacuum annealed SrTiO$_3$ single crystal substrate.

High resolution XPS spectra of (a) Sr 3d (b)Ti 2p and (c)O 1s.