Fig. 1. UV reflectance trace of 7 ALE runs: while the EPC at the start (GaN cap layer and first few nm of AlGaN) vary, the subsequent etching is highly consistent and end-pointing reflectance level can be assigned by real-time optical thin-film analysis.

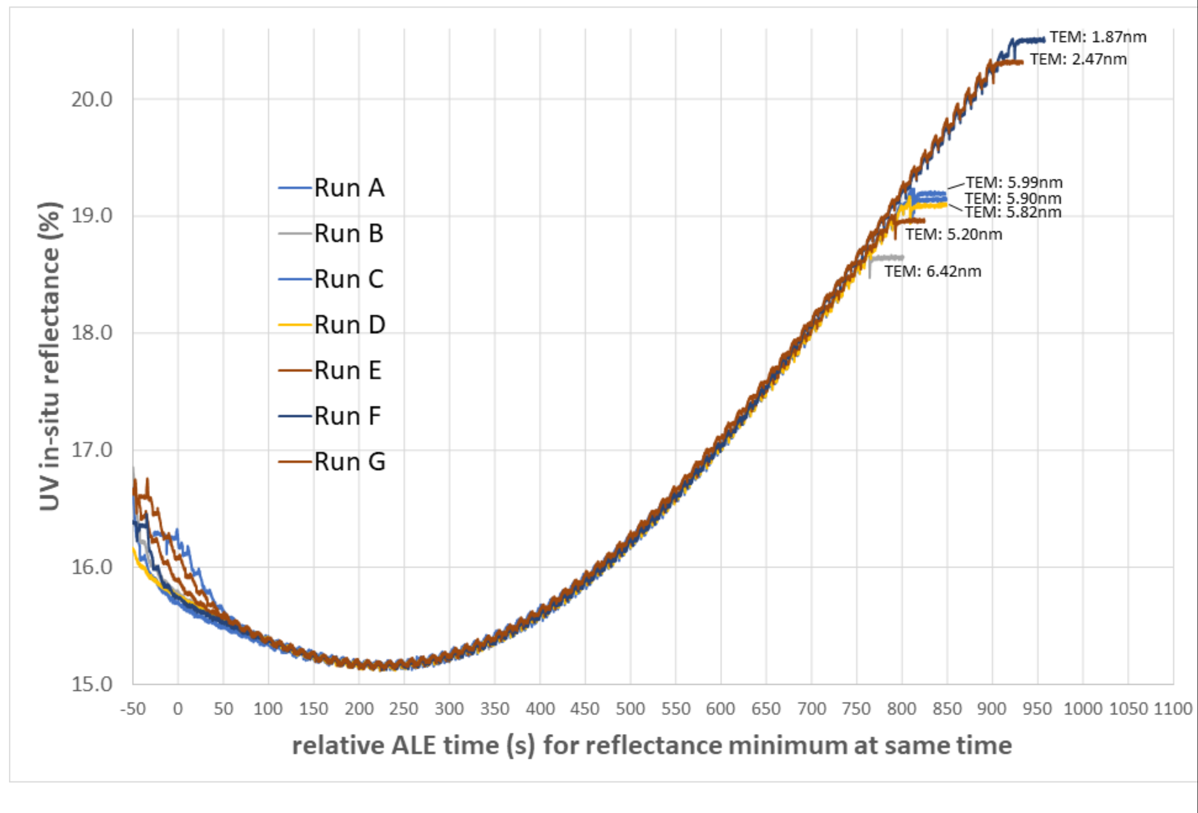

Fig. 2. Correlation of remaining thickness measured by TEM (Figs. 1 and 2) versus that measured by UV reflectance (Fig.3). The remaining differences can be related to the different spatial resolutions of the methods (20 nm for TEM and 300 µm averaging for UV reflectance in the test pad).

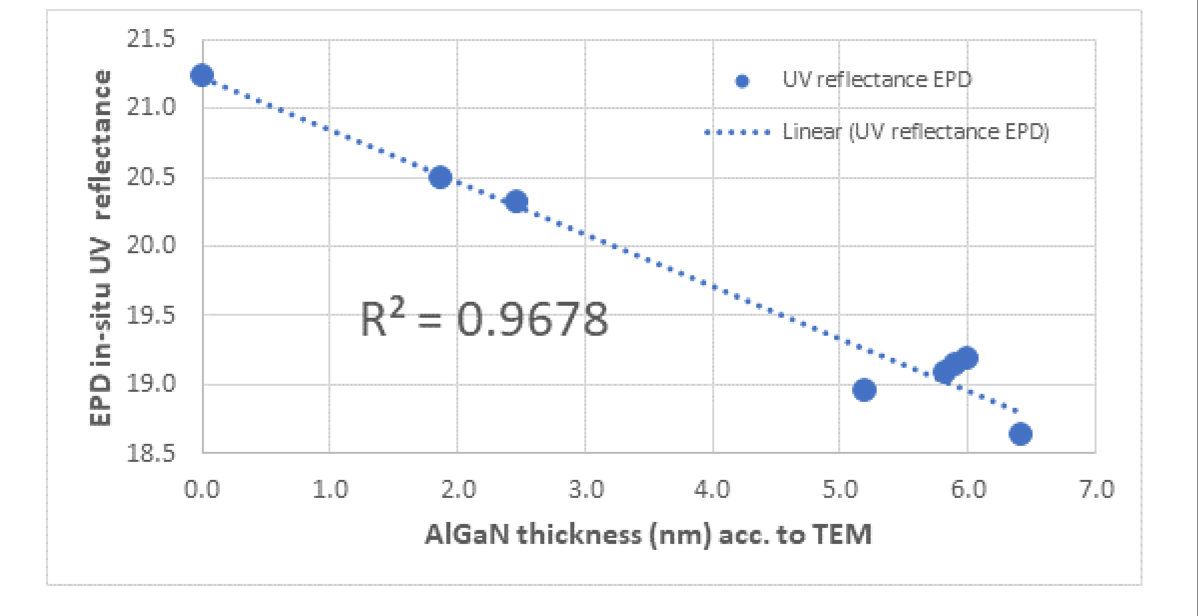

Fig.3. Native oxides have been detected into ~5nm of top GaN/AlGaN layers by EELS, EDX and corresponding TEM cross-section.