Electronic Supplementary Material (ESI) for RSC Advances.

Atomic-scale investigation of MgO growth on fused quartz using angle dependent NEXAFS measurements

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Supplementary information

Table S1: Simulated parameters for Rutherford Backscattering Spectroscopy (RBS) for MgO thin films

Layers	**Composition**	**Thickness (nm)**
Layer 1	$Mg_{0.5}O_{0.5}$	78
Layer 2	$Mg_{0.05}O_{0.2}Si_{0.4}$	25
Layer 3	Si	5000

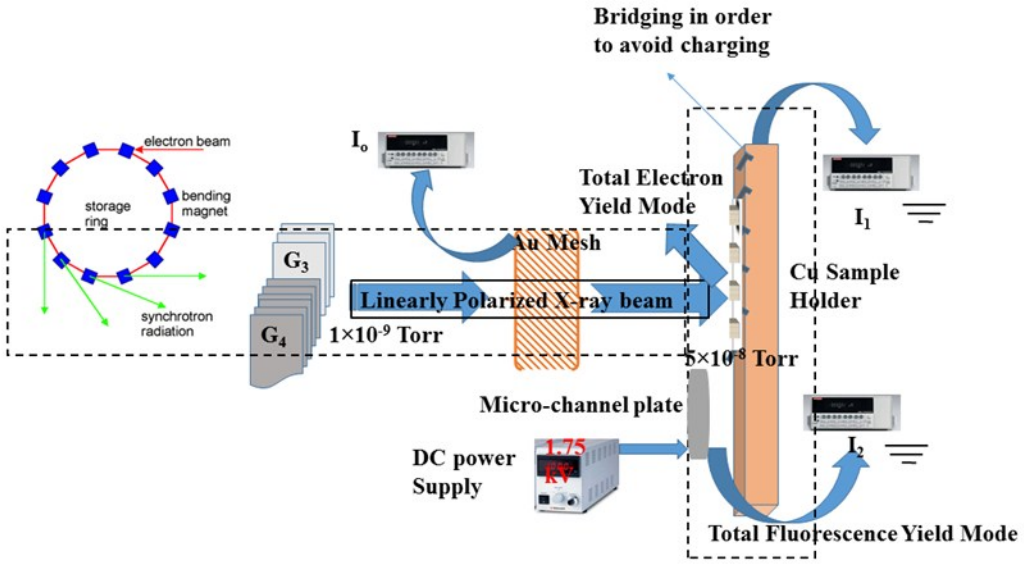

Fig. S1: Procedure for measuring NEXAFS spectra of sputtered MgO in TEY and TFY mode

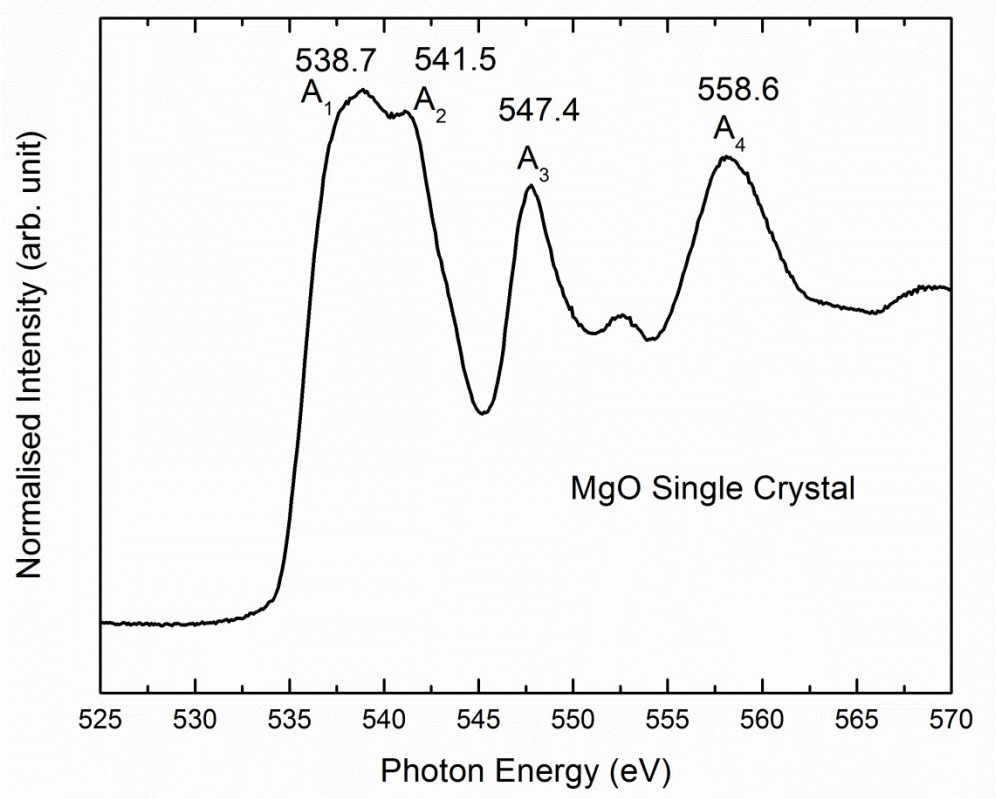

Fig. S2: O *K*-edge spectra of MgO single crystal measured in TFY mode.

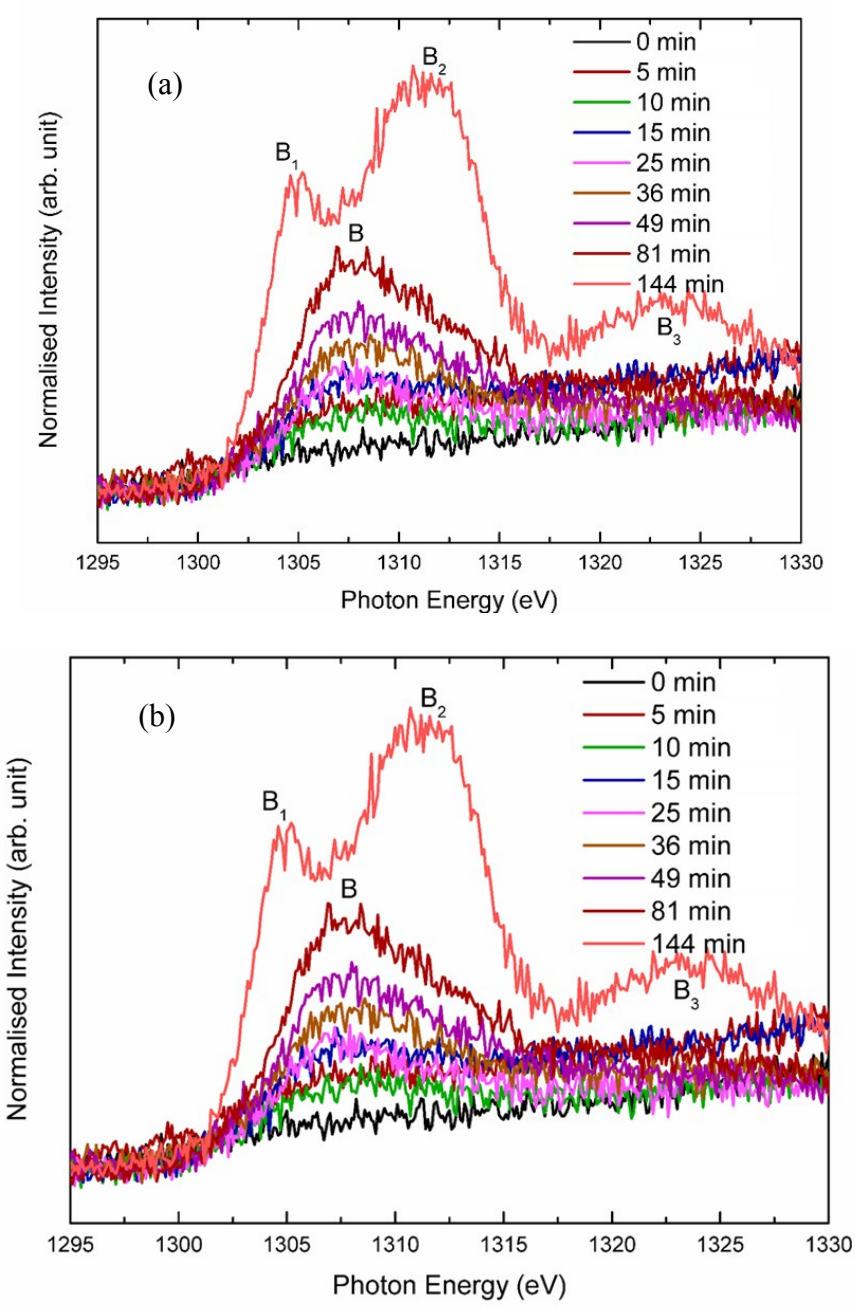

Fig. S3: (a) TFY and (b) TEY Mg *K*-edge spectra of sputtered MgO for different durations in the range 1295-1330 eV

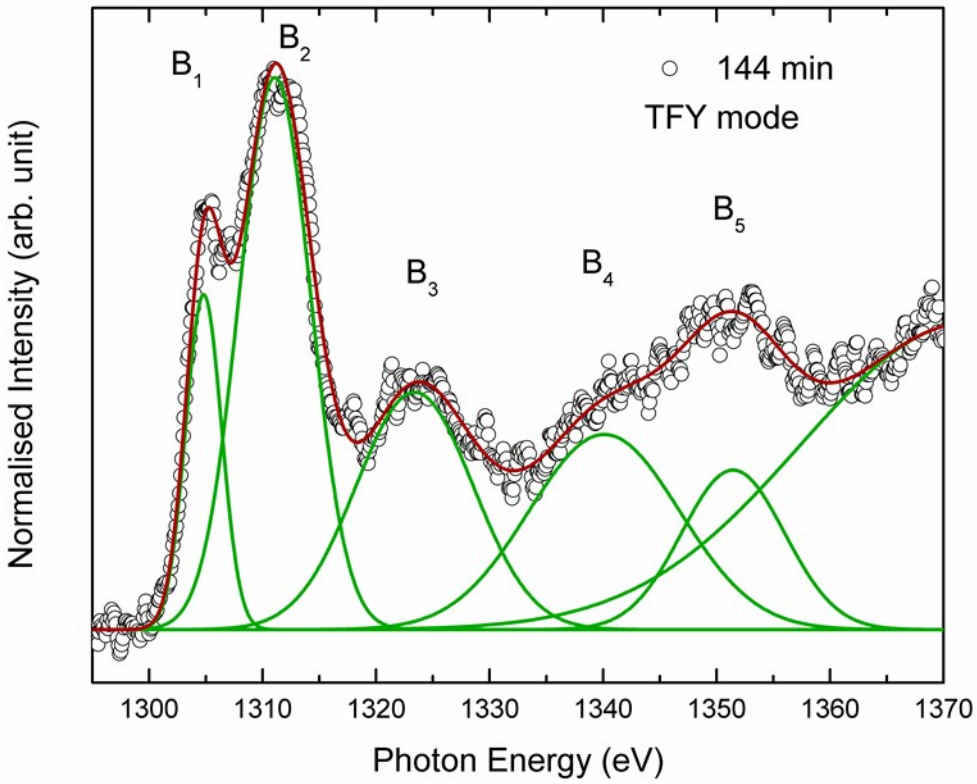

Fig. S4: Gaussian fitting of Mg *K*-edge spectrum at sputtering duration of 144 min. B_1, B_2, B_3, B_4 and B_5 are the spectral features of this spectrum

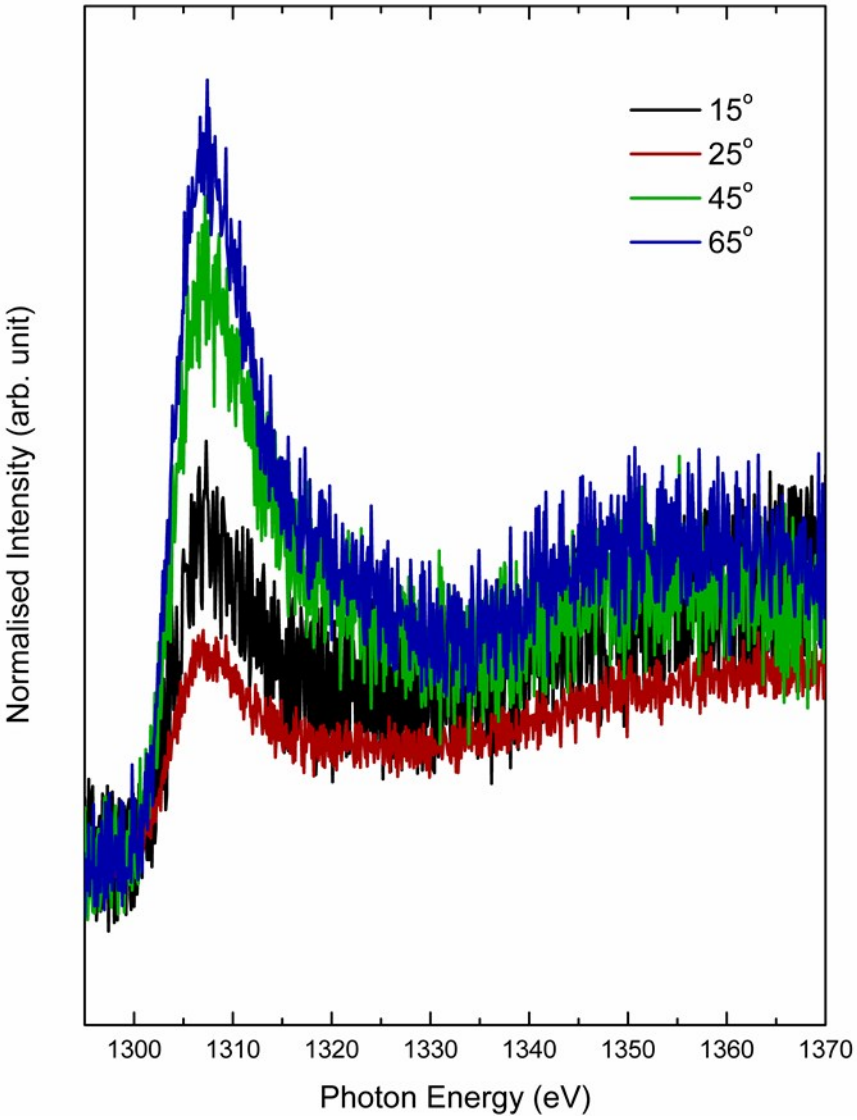

Fig. S5: TFY Mg *K*-NEXAFS spectra at different angles for sputtering durations of 5 min

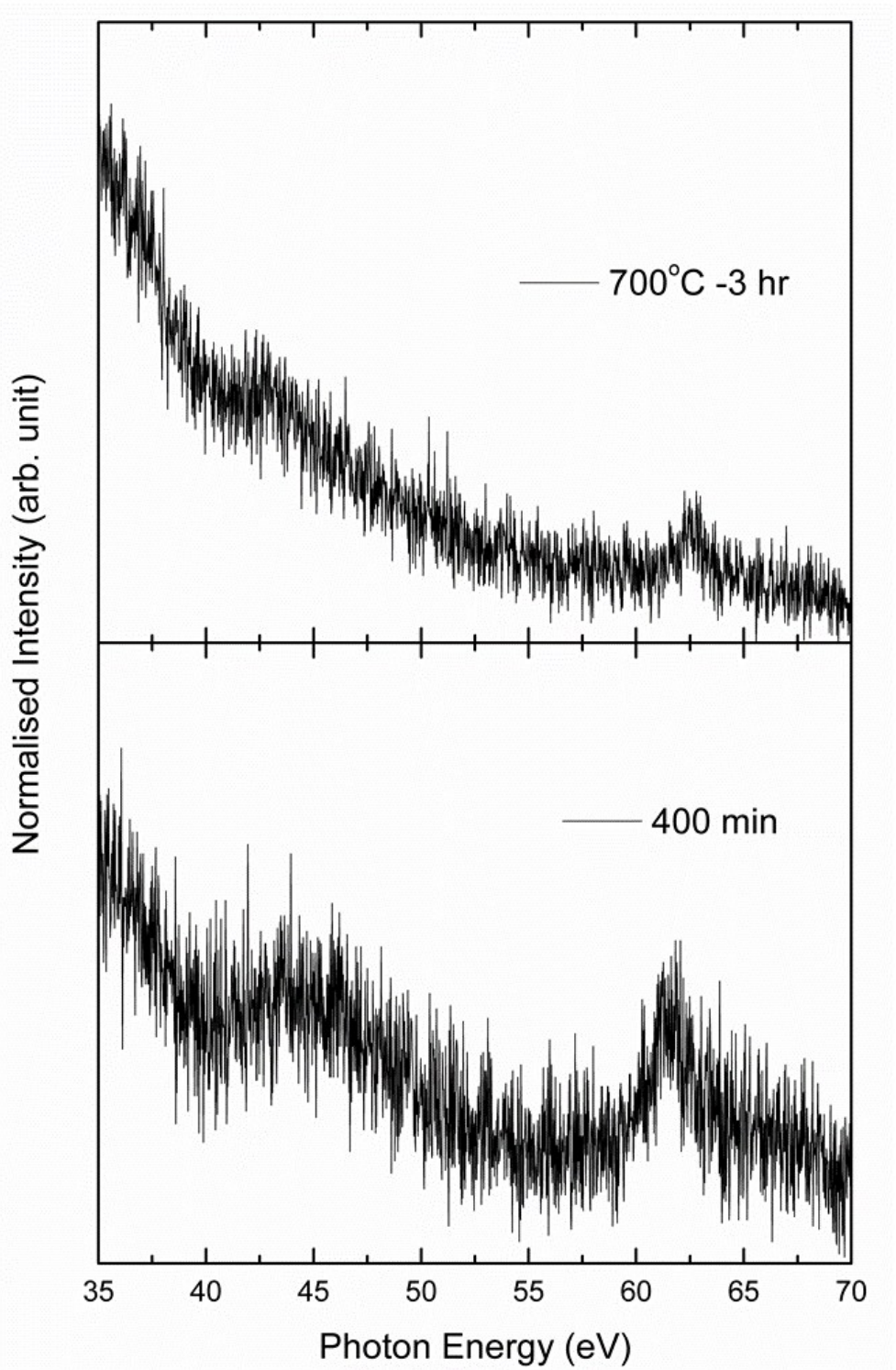

Fig. S6: XRD study of MgO for sputtering duration of 400 min and annealed counterpart