



Figure 1. (a) Selectivity as a function of film thickness on the growth surface for different ALD processes. Selectivity is defined here as

$$\text{selectivity} = \frac{\theta_{\text{GA}} - \theta_{\text{NGA}}}{\theta_{\text{GA}} + \theta_{\text{NGA}}}$$

with θ_{GA} and θ_{NGA} the amounts of deposited material on the growth and non-growth surfaces, respectively [1]. The growth surface is OH-terminated SiO₂, while the non-growth surface is CH₃-terminated SiO₂, obtained by reaction of dimethylaminotrimethylsilane with OH-terminated SiO₂. The amount of deposited material is measured by Rutherford Backscattering Spectrometry, X-ray Photo-electron Spectroscopy or Spectroscopic Ellipsometry.

(b) Cross-section Transmission Electron Microscopy image for 7.5 nm TiN ASD by TiCl₄/NH₃ ALD at 300°C on H₂ plasma pretreated aC-Si₃N₄ line-space patterns.