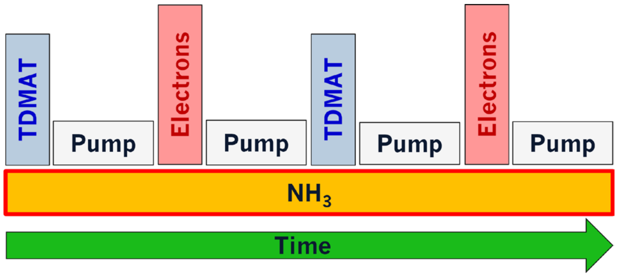

Figure 1. Schematic of an EE-ALD process with reactive background gas (RBG) showing alternating TDMAT precursor doses and low energy electron exposures separated by pumping. NH_3 RBG is flowed into the reactor during the entire cycle.

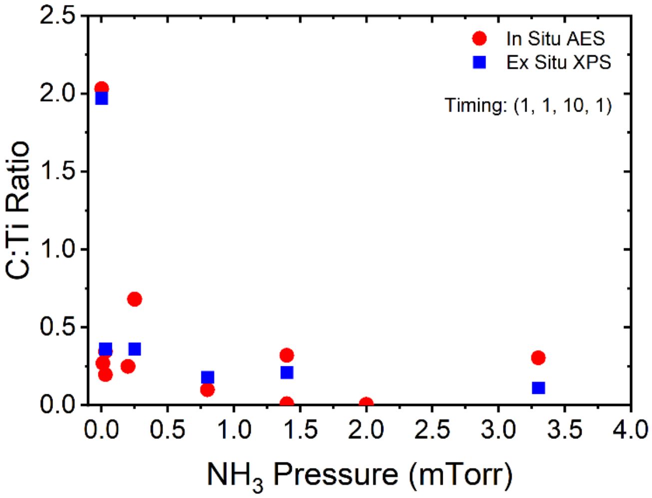

Figure 2. In situ AES and ex situ XPS measurements of the C:Ti ratio of TiCN films grown with varying NH_3 partial pressures.

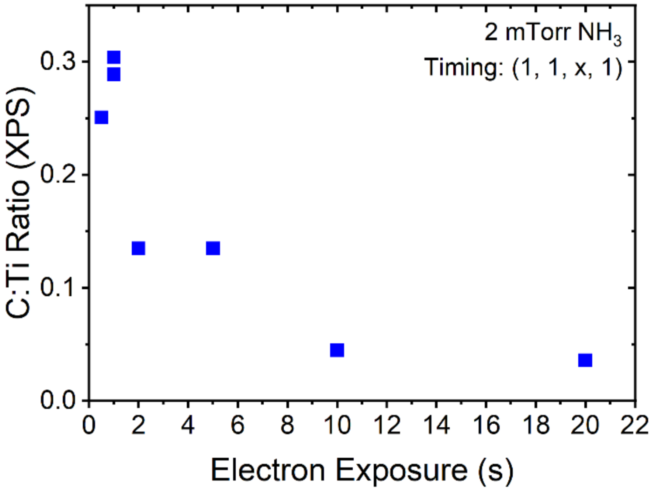

Figure 3. Ex situ XPS of the C:Ti ratio in TiCN films grown with varying electron exposures.