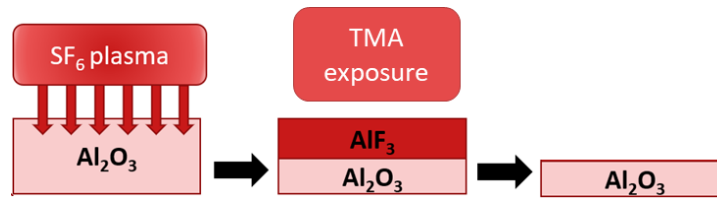
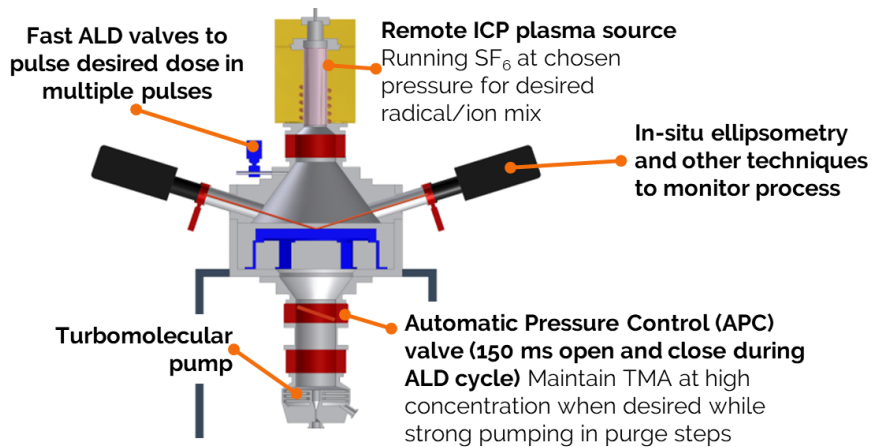


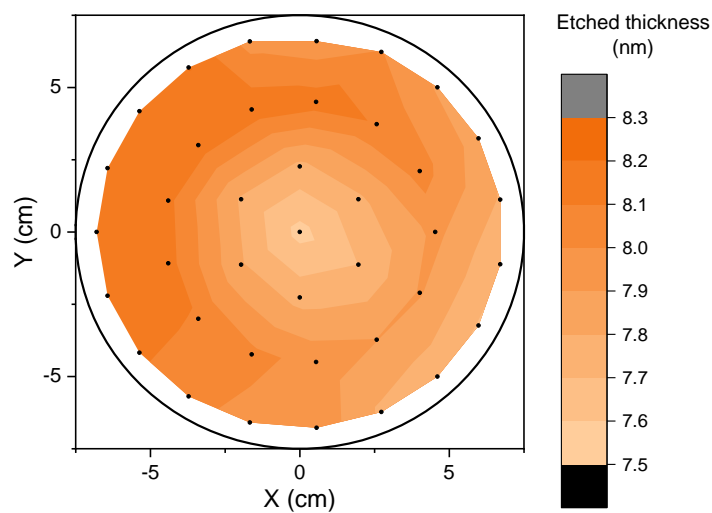
ALE process cycle



Schematic representation of isotropic plasma ALE of Al_2O_3 using SF_6 plasma and AlMe_3 . The degree of fluorination affects the required TMA (AlMe_3) exposure for effective etching.



FlexAL system to which the process was transferred. Although both the home-built and this tool have an ICP plasma and turbomolecular pumping, different options in precursor dosing and chamber heating require consideration of the process parameters.



After better understanding of the process parameters a decent ALE uniformity ($\sim 2\%$ 1-sigma thickness non-uniformity over 150 mm wafer area was obtained). The etched thickness for an ALD Al_2O_3 sample before and after 100 cycles of ALE is shown.