

Removing Defects from InGaP Surfaces Using Thermal Atomic Layer Etching (ALE)

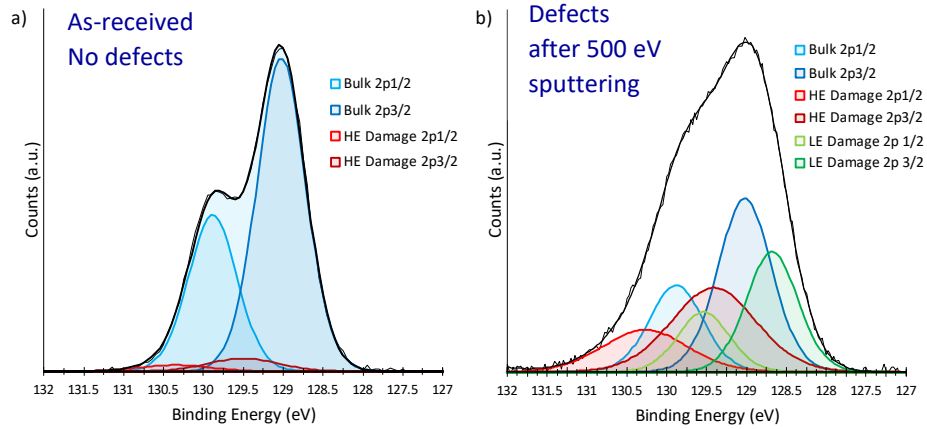


Figure 1: XPS spectra of the P 2p region of a) an as-received InGaP sample showing the bulk doublet and b) a sample after sputtering with 500 eV Ar ions for 30 minutes showing the bulk doublet as well as two doublets shifted to higher energy (HE) and lower energy (LE) that both correspond to sputter damage.

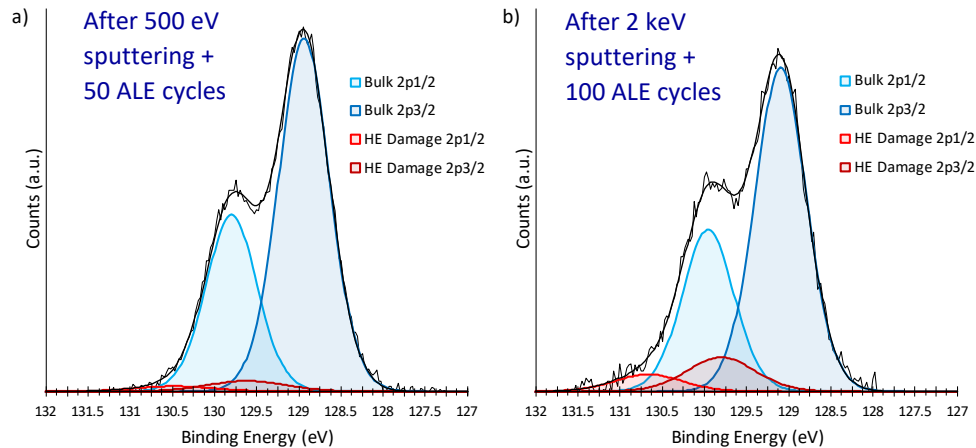


Figure 2: a) XPS P 2p scan of a sample sputtered at 500 eV and then etched for 50 cycles, completely removing the sputter damage. b) XPS scan of a sample sputtered at 2 keV and then etched for 100 cycles, removing the majority of the sputter damage and increasing the bulk doublet to 88% of the total area.