

Figure 1. Multilayer representation of the developed process, in time vs. thickness.

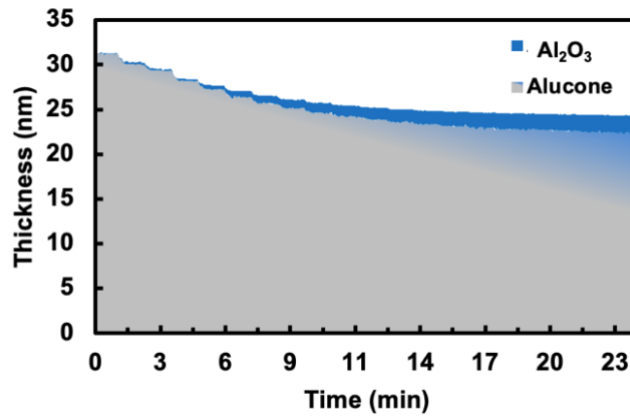


Figure 2. In situ thickness evolution graph of an alucone film being densified upon an O₂ plasma exposure.

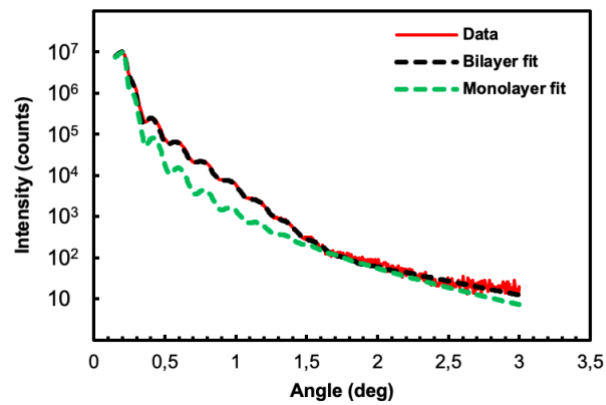


Figure 3. X-ray reflectivity data of a sample after densification, fitted with a monolayer model (green) and a bilayer model (black).

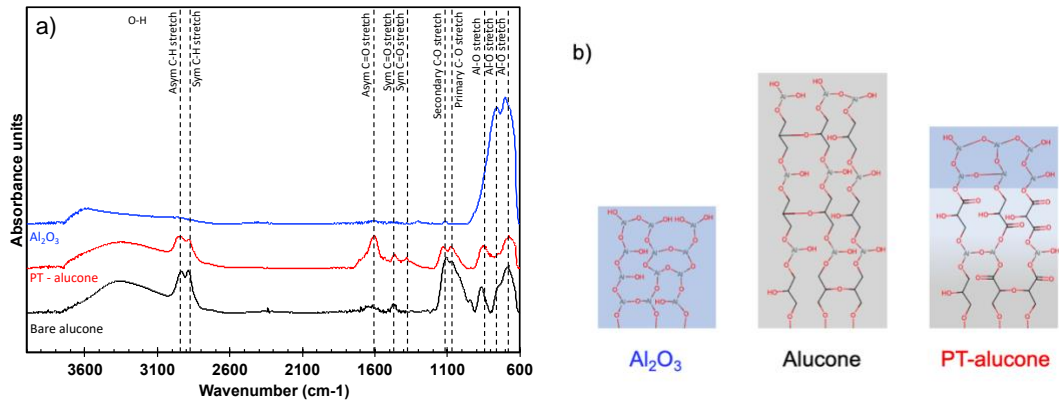


Figure 4. a) FTIR comparison of Al_2O_3 , bare alucone and PT-alucone; b) Proposed structures of the topmost part of the films, consistent with the FTIR data. Peak intensities are found to be lower overall in the bare alucone film, which only corresponds to a thinner (35 nm) sample compared to the other two (65 nm).

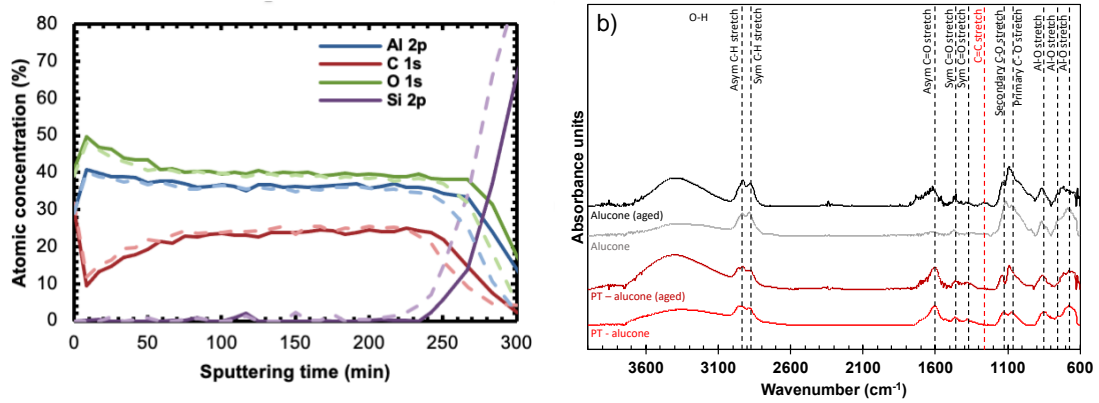


Figure 5. a) XPS depth profile of a PT-alucone, as-deposited (dashed line) and after aging in air for 11 weeks (solid line). b) FTIR spectra of an alucone (black) and PT-alucone (red) films, both as-deposited (light colour) and after aging in air for 11 weeks (dark colour).

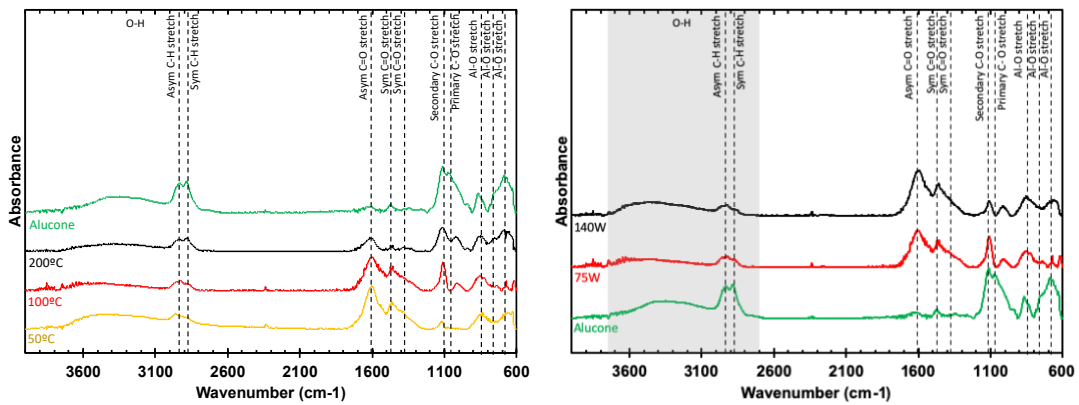


Figure 6. FTIR comparison of PT-alucones densified at different temperatures, compared to bare alucone (left) and at different plasma power settings (right)