Figure 1: Proposed mechanism for Hacac and O_3 on metal oxides

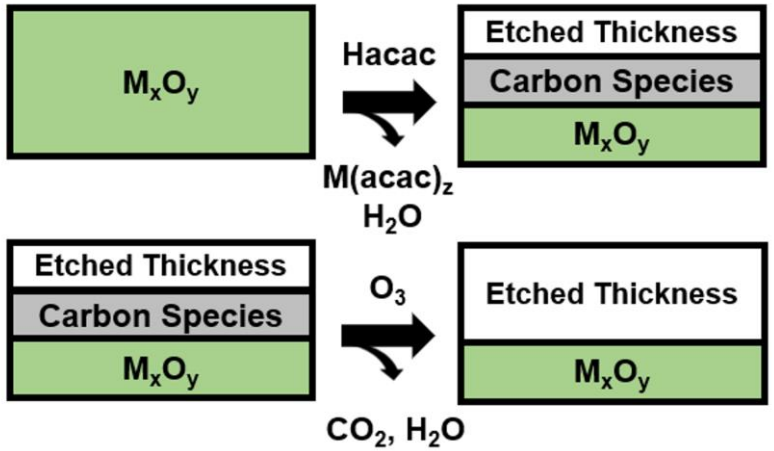

Figure 3: Time resolved QMS signal intensity for x5 Hacac, x1 O_3, x1 Hacac dosing on VO_2 shows two distinct etch products, $VO(acac)_2$ and $V(acac)_3$, which decrease in intensity with each sequential Hacac dose, and increase after exposure to O_3.

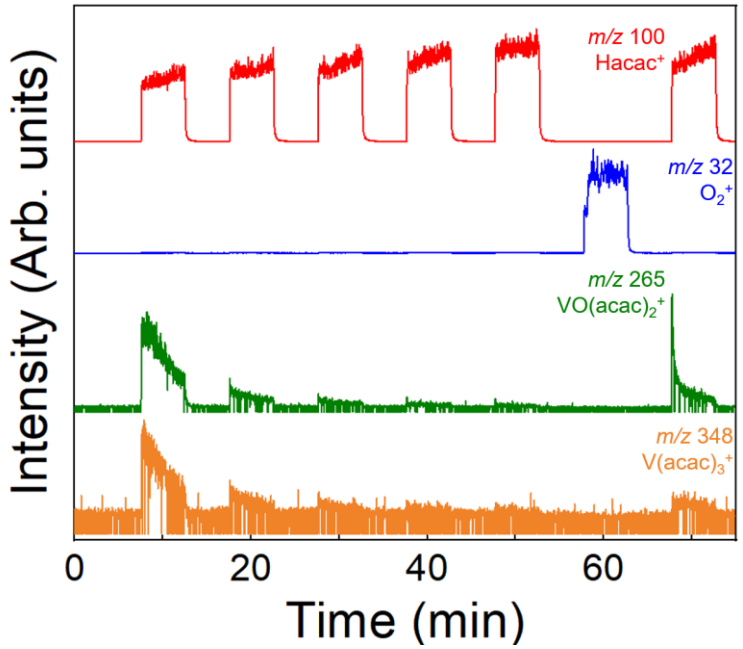

Figure 2: $Zn(acac)_2$ etch product during Hacac exposure on ZnO at 250 °C matches expected isotopic ratios

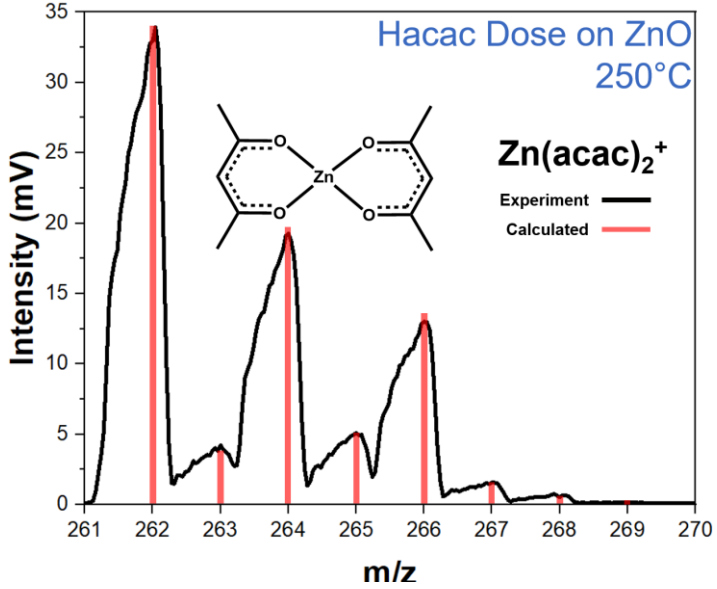

Figure 4: Overview of the survey of first row d-block metal oxides thermal etching with Hacac and O_3 at 250°C