

Figure 1 Scheme of chemical surface modification by H plasma and second metal precursor step.

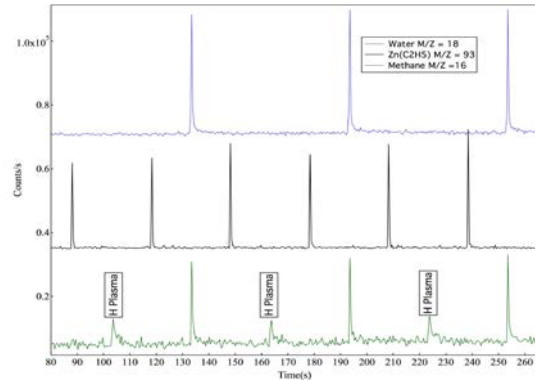


Figure 2 Mass spectral data demonstrating methane evolution upon H plasma reaction.

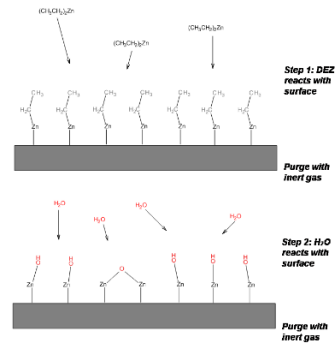
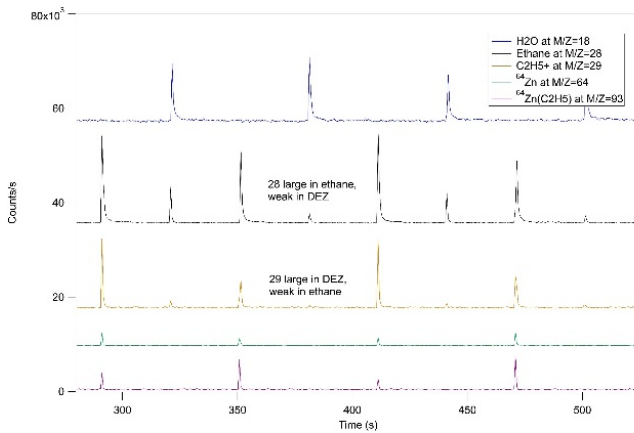


Figure 3 Mass spectral data of several species during thermal ALD of ZnO, demonstrating product desorption species as well as reactant pulses.

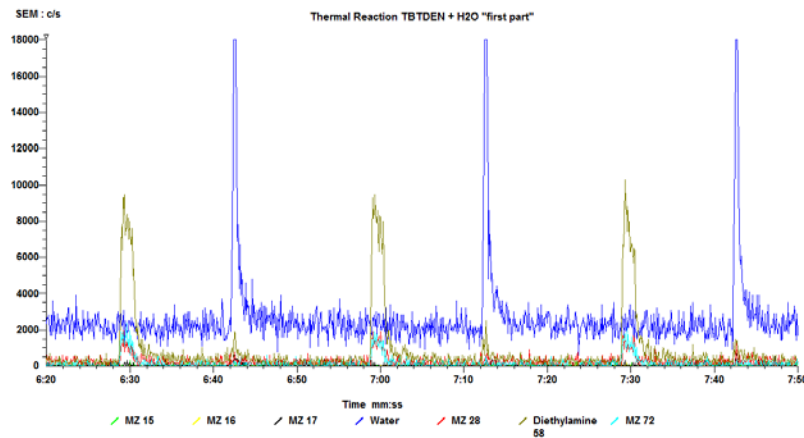


Figure 4 Mass spectral data showing niobium precursor reaction with water for NbO_x growth. M/Z=58 (likely diethylamine) peaks appear to have slower decay than other peaks from the precursor, indicating possibility they are due to product desorption. Small diethylamine peaks are also seen during the water pulse.