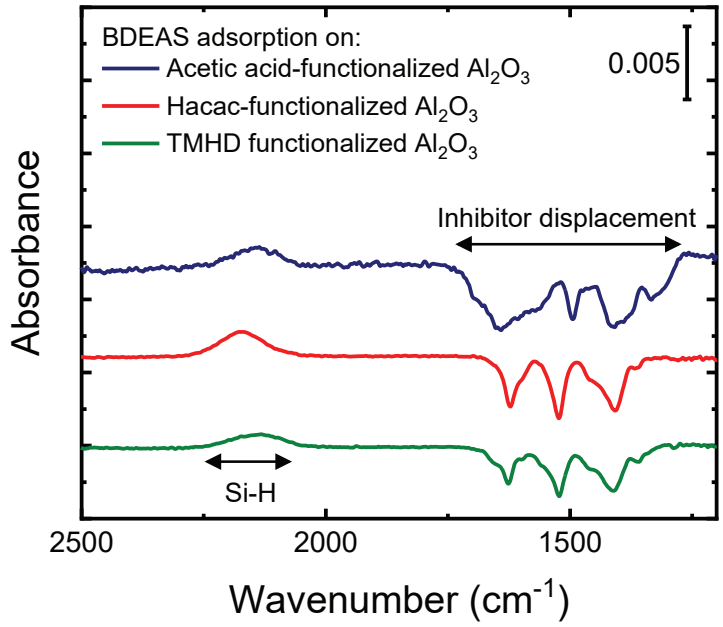

Figure 1: IR difference spectra on BDEAS blocking by acetic acid, Hacac, and TMHD showing the SiH stretch (indicating BDEAS adsorption) and the displacement of inhibitor molecules. The BDEAS blocking efficiency was found to be 92%, 92%, and 96% for acetic acid, Hacac, and TMHD respectively, showing that TMHD is more effective in blocking BDEAS adsorption. Moreover, only 3% inhibitor displacement was observed for TMHD, whereas ~5% displacement occurs for acetic acid and Hacac.

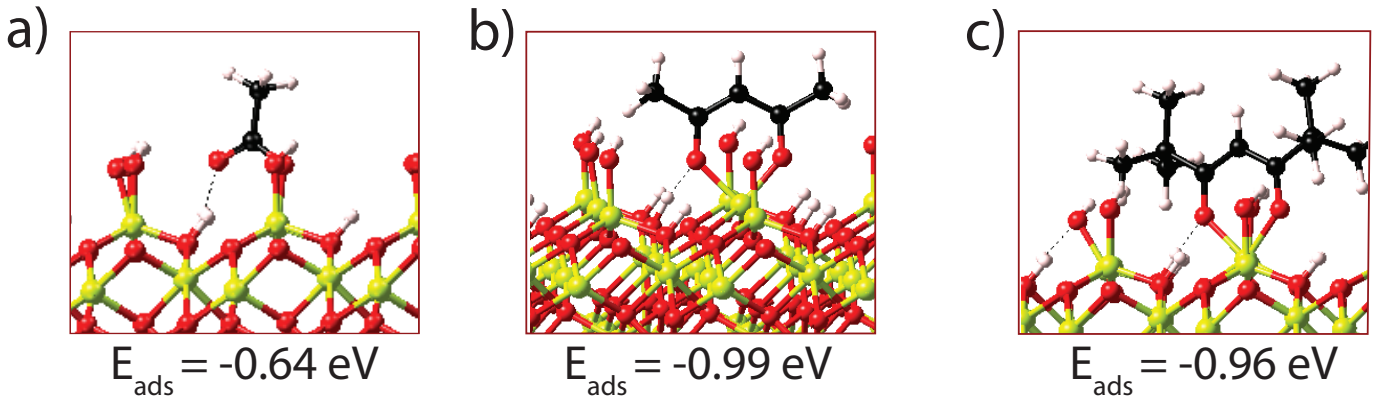

Figure 2: Density functional theory calculation results on the adsorption energies for (a) acetic acid, (b) Hacac, and (c) TMHD on an Al_2O_3 surface.

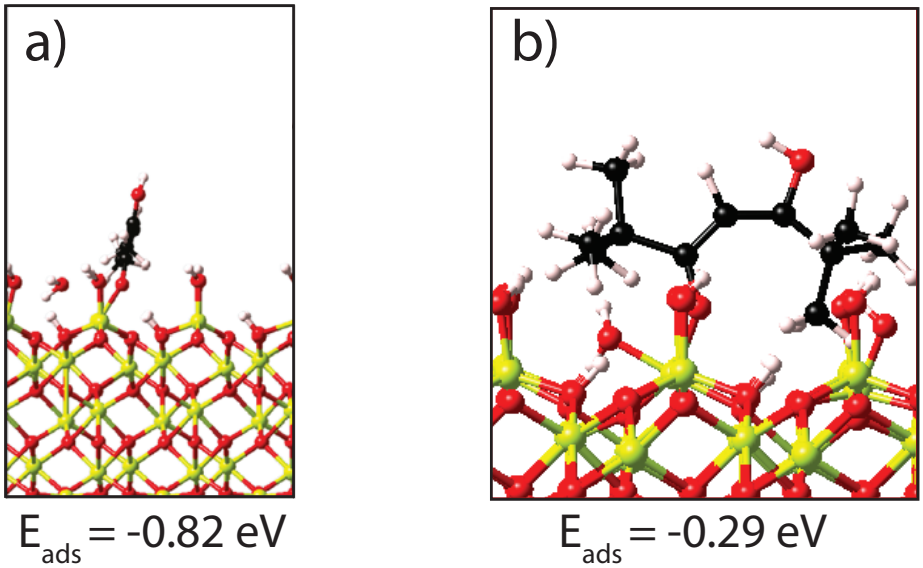

Figure 3: Results of the density functional theory calculations showing the adsorption energy for the monodentate configuration of (a) Hacac and (b) TMHD. DFT shows that TMHD cannot form monodentate species on an Al_2O_3 surface and, as a result, TMHD adsorbates cannot interact with incoming precursors