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The effect of top $LaAlO_3$ surface treatment on the q-2DEGs at the $LaAlO_3$/ $SrTiO_3$ interface[1] SHAN HU, JEREMY LEVY, CHENG CEN, DANIELA F. BOGORIN, University of Pittsburgh — We investigate the effect of various adsorbates on the ability to create and erase nanostructures at the $LaAlO_3/SrTiO_3$ interface. Our results show that when the top $LaAlO_3$ surface is made hydrophobic, the conductivity of nanostructures decays much slower than for hydrophilic treatments. This dependence provides further support that H_2O plays an important role in the writing and erasing process.

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