Abstract Submitted
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Atomic
Steps on Thermally Annealed Oxide Substrates[1] ICON MAZZACCARI, RAFIYA JAVED, AMLAN BISWAS, Department of Physics, University of Florida — Atomically smooth perovskite oxide substrates are necessary for high quality thin-film growth. We have optimized the annealing conditions for the substrates, $LaAlO_3$, $SrTiO_3$ and $NdGaO_3$, which are commonly used substrates for growing thin-film perovskite oxides. The optimal annealing temperatures were between 950 ^{o}Cand 1050 ^{o}C and the annealing time for each sample was varied by approximately 20%. Atomic force microscopy was used to compare the surfaces of the annealed substrates with the unannealed ones. These images capture the terrace steps that occur due to the annealing process, and we have confirmed that the heights of the steps are approximately one unit cell (0.4 nm). Currently, we are investigating methods for determining the site termination of the substrates and their effects on thin-film growth.

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