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[256] Surface structures of $\text{La}_{0.8}\text{Sr}_{0.2}\text{MnO}_3(110)$ and $\text{La}_{0.8}\text{Sr}_{0.2}\text{MnO}_3(001)$

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Solid-oxide fuel cell (SOFC) cathode materials like lanthanum–strontium manganite ($\text{La}_{0.8}\text{Sr}_{0.2}\text{MnO}_3$, LSMO) are an active field of study for efficient chemical energy conversion into clean electricity. Since the surfaces play a crucial role in the relevant reactions, closer investigation is needed for establishing a model. We use our setup for pulsed laser deposition (PLD) and surface science techniques to grow and analyze single-crystalline LSMO(110) and LSMO(001) films on suitable substrates. The material analysis is facilitated by scanning tunneling microscopy (STM), low-energy electron diffraction (LEED) and x-ray photoelectron spectroscopy (XPS) as well as density-functional theory (DFT).

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