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【116】 Tuning the electronic structure of LaNiO₃ thin films

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Since many years, rare earth nickelates attract the researchers interest due to their huge variety of fascinating physical properties which are tunable by the interplay of electron correlations and crystal structure. Further, these systems show dimensionality-driven transitions (e.g. LaNiO₃ (LNO) thin films), and strain-induced transitions (e.g. NdNiO₃ heterostructures).

We investigate the evolution of the electronic structure of LNO thin films in proximity to doped L_{1-x}S_xMnO₃ (LSMO) grown on STO and NGO substrates by pulsed laser deposition (PLD). The combined study of angle resolved photoemission spectroscopy (ARPES) and transport measurements demonstrates that the electronic properties of LNO thin films can be tuned via the LSMO buffer layer. The results will be explained in terms of charge transfer mechanism and electron-phonon coupling.

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