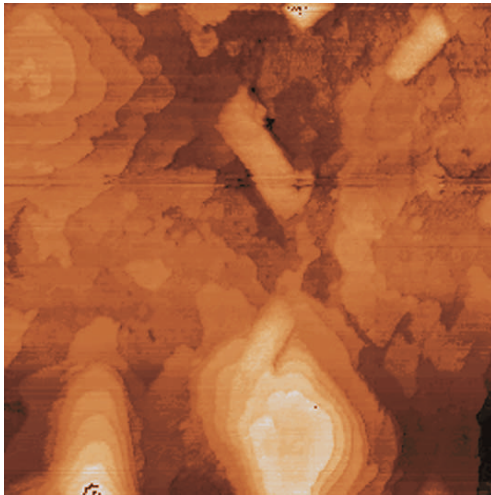


STM on High Transition Temperature Superconductor YBCO Thin Films

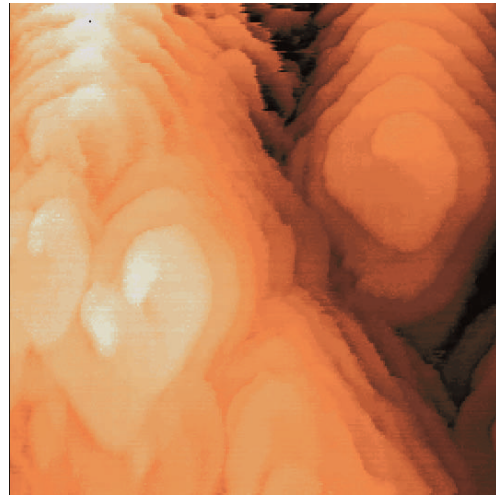
Nanosurf® STM Application Note

High temperature superconducting thin films have been deposited using the pulsed laser deposition method onto SrTiO_3 single crystalline substrates. The substrate temperature was kept at 750°C and the deposited film thickness was 200nm (sample provided by University of Basel).

STM measurements on High Transition Temperature Superconductor ($\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$) thin films (raw data):



scan size: 500 nm



scan size: 200 nm

From the STM experiment, typical defect mediated spiral growth hills can be observed (see also Gerber et al. Nature 350 (1991) 279). The step height of the growth hills correspond to the unit cell of the superconductor material $\text{YBa}_2\text{Cu}_3\text{O}_7$ of 1.2nm. The tunneling parameters were -1nA tunneling current and -0.8V gap voltage.