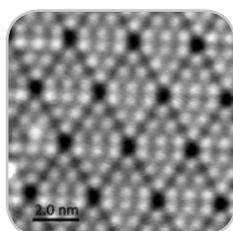


In contrast to Scanning Tunneling Microscopy (STM), non-contact Atomic Force Microscopy (nc-AFM) allows the characterization of forces between an oscillating cantilever and a surface. One clear advantage of nc-AFM is the possibility to investigate conducting as well as electrically insulating surfaces. Here, we present results obtained on different benchmark surfaces to show the versatility and ultimate performance of our CreaTec LT-SPM system. The experiments were performed with a qPlus® sensor. In order to enhance the contrast for AFM imaging, the tip of the qPlus® sensor is decorated with an additional atom or molecule, such as Xe or CO. Here, the tip has not been functionalized intentionally, thus the tip termination is unknown.

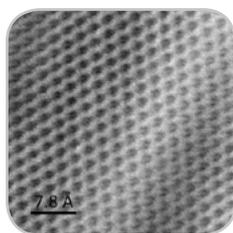
qPlus® is a registered trademark of Professor Franz J. Giessibl, Regensburg, Germany

CONDUCTING SURFACES



Si(111)	
TEMPERATURE	4.8 K
FEEDBACK MODE	constant df
SETPOINT	df = -3.59 Hz
BIAS	U = 0 V

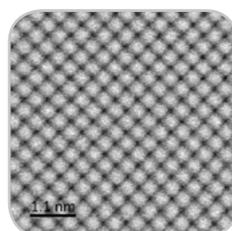
Recorded using Specs Nanonis Controller



Au(111)	
TEMPERATURE	4.7 K
FEEDBACK MODE	constant df
SETPOINT	df = -17.5 Hz
OSCILLATION AMPLITUDE	A = 470 pm
BIAS	U = 0.47 mV

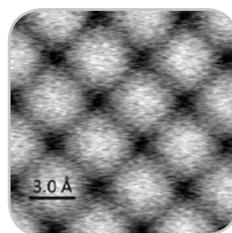
Recorded using CreaTec DSP electronics

INSULATING SURFACES



NaCl(100)	
TEMPERATURE	77 K
FEEDBACK MODE	constant df
SETPOINT	df = -4 Hz
OSCILLATION AMPLITUDE	A = 150 pm
BIAS	U = 1 V

Recorded using Specs Nanonis Controller



NaCl(100) smaller scan area	
TEMPERATURE	77 K
FEEDBACK MODE	constant df
SETPOINT	df = -4 Hz
OSCILLATION AMPLITUDE	A = 150 pm
BIAS	U = 1 V

Recorded using Specs Nanonis Controller