

Scanning Tunneling Microscopy (STM) experiments were performed to demonstrate the ultimate performance of our CreaTec LT-STM systems. Therefore, an ordinary Au(111) single metal crystal was used to evaluate atomic resolution at 4 K using the latest CreaTec electronics. Although such images were already shown very often, unfortunately, a lot of these images do not provide real atomic resolution since they were acquired with an additional tip atom or molecule increasing resolution by an order of magnitude. This is expressed by unreal corrugation in the range of a few hundred pico- or even nanometer. In contrast, the images below show real atomic resolution (2 pm) as well as the well-known herringbone (20 pm) and a standing wave on top.

IMAGES AND LINESCANS

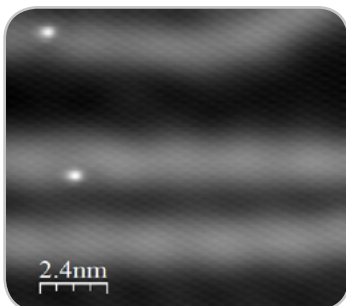


Fig. 1: Topography Image of Au(111) showing real atomic resolution, the herringbone structure and a standing wave atop.

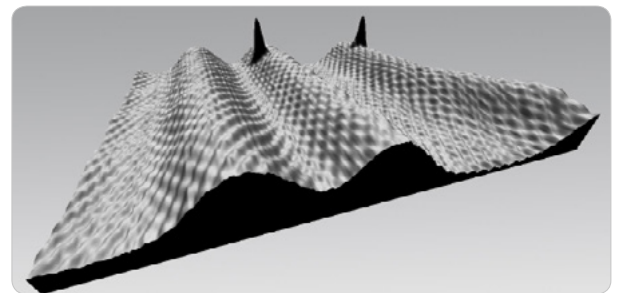


Fig. 4: 3D representation of the same surface as shown in Fig. 1.

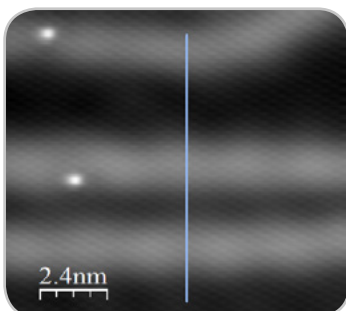


Fig. 2: Line profile across the herringbone structure of Au(111). The overall height is ca. 20 pm.

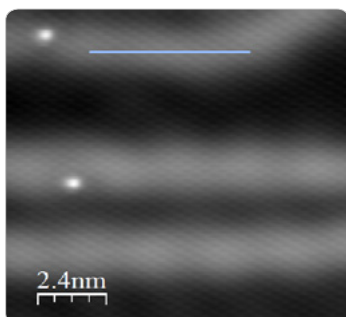
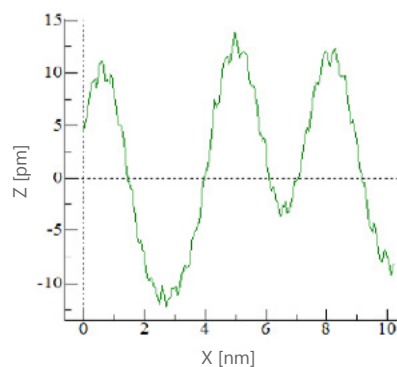


Fig. 3: Line profile showing atomic resolution on Au(111). The overall height is ca. 2 pm.

