

1.1 Layered crystals

MoTe₂, a layered crystal of the family of transition metal dichalcogenides (Wilson and Yoffe, 1969), was employed to calibrate the piezo scanner of the AFM. It was prepared by chemical vapor transport (CVT), with chlorine or bromine as carrier gases in a temperature of 100°C across the quartz ampoule (Jungblut *et al.*, 1992), and was a kind gift.

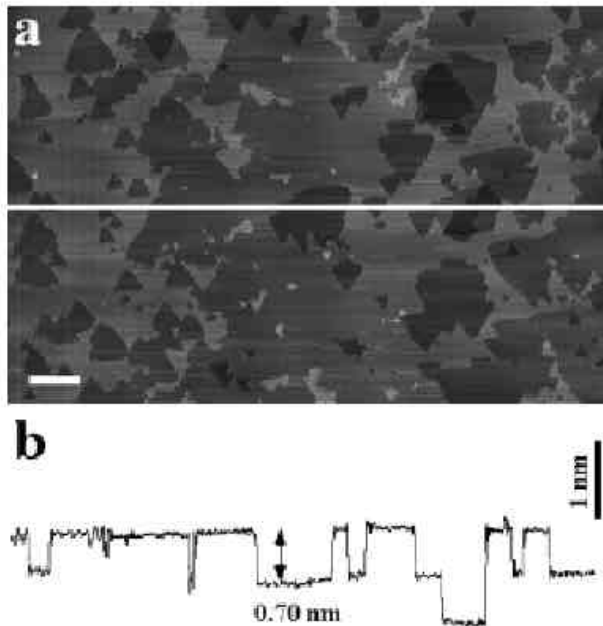


Fig. 1. Vertical calibration of the piezo scanner using defects of the layered crystal MoTe₂. a) Height image of the etched surface, scale bar = 500 nm. The crystal layers are visible, while the triangular defects can be directly related to the trigonal prismatic elements that assemble the layers. b) Height profile along the line indicated in a). The height differences were multiples of a single crystal layer thickness including the van der Waals gap ($c = 0.698$ nm).

References:

- 1 **The height of biomolecules measured with the atomic force microscope depends on electrostatic interactions** Biophysical Journal 1997, 73:1633-1644
Daniel J. Müller and Andreas Engel

Can be found at: <http://www.mih.unibas.ch/>