

KPFM Test Grating Au on Si



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Technical Data

Substrate	N(Ph 1-5 Ohm·cm) Si
Au Height	10 ± 5 nm
Chess Pitch	5 µm
Chess Area	500 µm x 500 µm
Line Pitch	20 µm
Line Length	500 µm

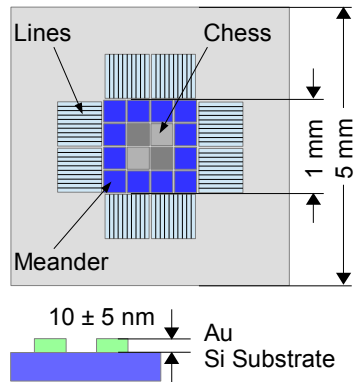
The active area of 1 mm x 1 mm is divided into 4 x 4 fields, each of them 250 µm by 250 µm large. The outer (blue) fields show meander structures of 10 µm pitch. The inner 2 x 2 fields are chesses of 5 µm pitch with 2 different aspect ratios.

Typical Application

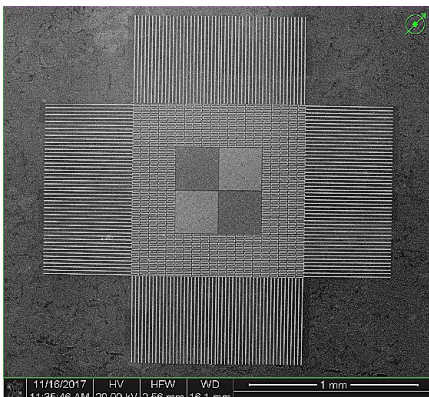
- KPFM/EFM test measurements
- Lateral calibration

This grating has been developed as a reference sample for KPFM / EFM measurements where a well-defined material contrast is desired. The chess pattern allows calibration in lateral direction, too.

Grating Structure



SEM Image Full Structure



Important Information

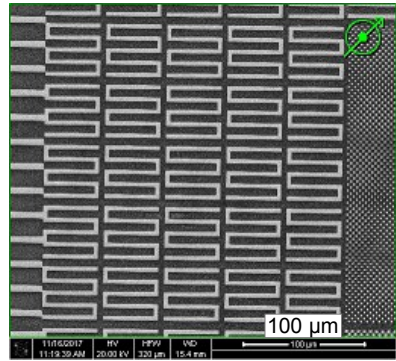
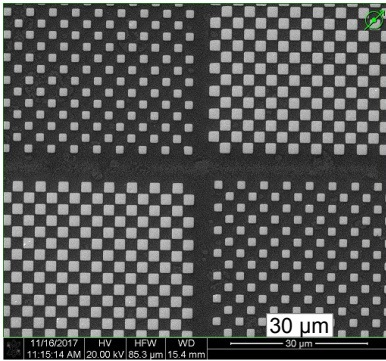
The Schottky barrier height of the sample is ~0.79 eV according to literature [1].

The estimated Debye length is 60 – 150 nm for this substrate.

For cleaning purposes the sample may be treated with Argon plasma or washed with typical solvents.

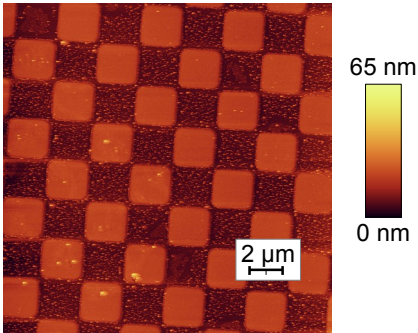
[1]: Singh, J. (2001). *Semiconductor Devices: Basic Principles*. New York: Wiley.

SEM Images



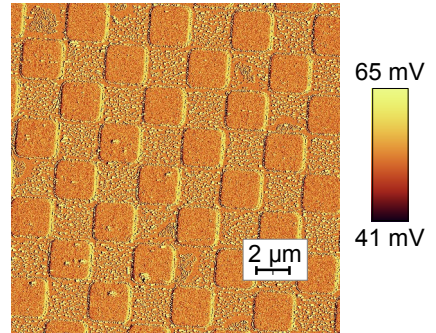
FM-KPFM Images

Topography

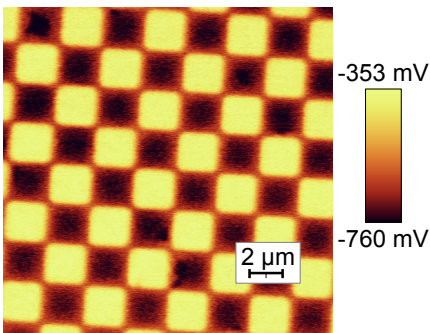


Scan Range: 20 μm

Amplitude



Surface Potential



Phase

