

Übungen zur Oberflächenphysik

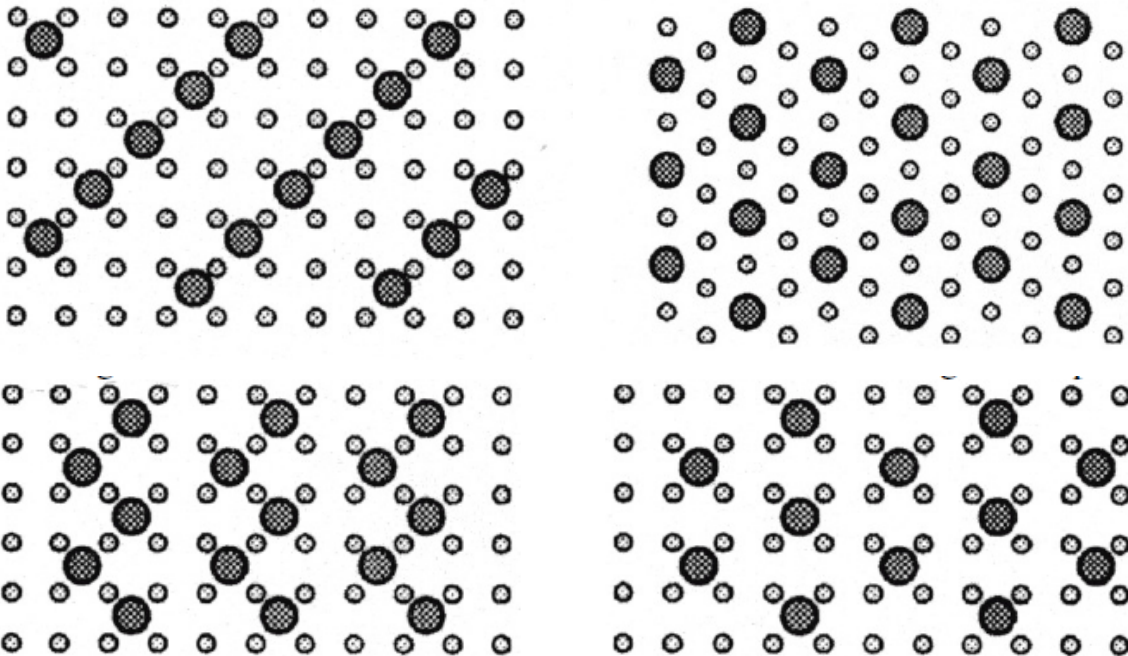
Blatt 2 – 18-19.3.2014

1. Titanium sublimation pump

- Calculate the performance of a titanium sublimation pump, assuming it consists of a cylindrical recipient with 35 cm diameter and 30 cm height. The recipient is connected to the main chamber via a metal tube of 20 cm length. Calculate its minimal width. ($p=10^{-8}$ mBar)
- At what pressures does it make sense to use this type of pump? Explain.

2. Superstructures & Wood notation

Determine the matrixes for the given superstructures and give also the Wood notation.



3. LEED

- Draw the diffraction pattern of the $c(2 \times 2)$ oxygen reconstruction on a Co(100) substrate.
- Assume you find a not labeled single crystal substrate stored in your vacuum system. Which techniques (and why?) would you use to characterize it?

4. Getting a feeling for energies

- Calculate the energy of electrons having a wavelength of 1 Å.
- Compare this to the energy of corresponding He atoms.