

SCANNING TUNNELING MICROSCOPY
INVESTIGATION OF THE Si(001)-c(8 × 8)
NANOSTRUCTURED SURFACE

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S u m m a r y

The rarely observed Si(001)-c(8 × 8) reconstruction is a unique nanostructured state of the Si(001) surface. It was obtained through the sample contamination with trace amounts of Cu below the electron spectroscopy detection limit. As our detailed STM investigation shows, the surface is not atomically flat in the c(8 × 8) state. Instead, the principal elements of this reconstruction belong to two subsequent atomic layers. They are the epitaxial Si ad-dimers in the first atomic layer and the double dimer vacancies in the second atomic layer.