Atomic resolution in dynamic force microscopy across steps on Si(111)7 x 7

JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)

ID 171222
Author(s) Luthi, R; Meyer, E; Bammerlin, M; Baratoff, A; Lehmann, T; Howald, L; Gerber, C; Guntherodt, HJ
Author(s) at UniBasel Meyer, Ernst ;
Year 1996
Title Atomic resolution in dynamic force microscopy across steps on Si(111)7 x 7
Journal Zeitschrift für Physik. B, Condensed matter
Volume 100
Number 2
Pages / **Article-Number** 165-167
In this note we report the first observation of salient features of the Si(111)7 x 7 reconstructed surface across monatomic steps by dynamic atomic force microscopy (AFM) in ultrahigh vacuum (UHV). Simultaneous measurements of the resonance frequency shift Delta f of the Si-cantilever and of the mean tunneling current <(I)over bar (t)>from the cleaned Si tip indicate a restricted range for stable imaging with true atomic resolution. The corresponding characteristics vs. distance reveal why feedback control via AS is problematic, whereas it is as successful as in conventional STM via <(I)over bar (t)>.

Publisher Springer
ISSN/ISBN 0722-3277
edoc-URL http://edoc.unibas.ch/dok/A5839473
Full Text on edoc No;
Digital Object Identifier DOI 10.1007/s002570050106
ISI-Number ISI:A1996UP72700001
Document type (ISI) article