

Abstract Submitted
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Ordering of CN species on copper (001) B.J. HINCH, E.Z. CIFTLIKLI, I.G. SHUTTLEWORTH, S.E. SYSOEV, A. V. ERMAKOV — Work function measurements during the adsorption of cyanogen (NCCN) on Cu(001) imply a dissociative adsorption of CN species over 130K. Helium atom reflectivity also indicates uptake of the radical species up to exposures of approximately 4 Langmuir, and also the onset of a weak ordering phenomena as adsorption temperatures exceed $\sim 240\text{K}$. At 260K quasi hexagonal $c(6\times 10)$ superstructures are observed with helium diffraction. At least two exposure ranges are observed with differing $c(6\times 10)$ superstructure diffraction peak intensity ratios. The saturated phase shows strong long range ordering but also an intense diffuse scattering component. Inelastic scattering studies indicate a marked multiphonon scattering component to the diffuse intensity, and an absence of single phonon excitation features. Models for this simultaneously ordered/disordered surface will be discussed. The thermal stability of the CN superstructures will also be addressed.

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