

Abstract Submitted
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Ion-surface Interactions at Cu(100) and Cu(111) Surfaces¹ JAMIE STAFFORD, BOGDANA BAHRIM, Department of Physics, Lamar University — We study the electron dynamics at Cu(100) and Cu(111) surfaces by using wave-packet propagation techniques. In recent years, the interest to study these surfaces has largely arisen due to the availability of more experimental data and the development of more realistic potentials to model their complex band structure. By solving the time-dependent Schrodinger equation for the active electron during ion collisions with Cu(100) and Cu(111) surfaces, we investigate ion and surface energy levels, state populations, and ion fractions. We have found that the ion fractions are affected by the location of the band gap and the presence of adsorbates. Ion-surface interactions are important both for fundamental research and technological applications, such as, plasma wall interactions, aeronautical engineering, and scanning electron microscopy.

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