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Inverse photoemission and LEED investigation of the ion-bombarded Ni(110) surface BENJAMIN YOUNG, JIM WARNER, DAVID HESKETT, University of Rhode Island — Ion bombardment of the clean Ni(110) surface is investigated by a combination of Inverse Photoemission Spectroscopy (IPES) with a Geiger-Muller detector and Low Energy Electron Diffraction (LEED) with a homebuilt video capture system. Disorder of the surface is induced by argon ion bombardment with various combinations of argon pressure and sputtering time. The intensity of the unoccupied surface state at $\sim 2\text{eV}$ above the Fermi level at the \bar{Y} point of the surface Brillouin zone decreases with increasing surface bombardment. Simultaneously, intensity profiles of diffraction spots in LEED exhibit broadening and a rising background level for increasing surface disorder. Multiple attempts at correlation between the results of the two techniques are presented.

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