ADSORPTION INTERACTION OF OXYGEN WITH Mo(110) SURFACE: KINETICS, STRUCTURE, AND CHEMICAL TRANSFORMATIONS

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S u m m a r y

The formation of an oxide layer on the Mo(110) surface is investigated with the help of low-energy electron diffraction (LEED), Auger spectroscopy, thermodesorption spectroscopy, and the contact potential difference method. The potential barrier for oxygen atoms moving in the subsurface region is calculated in the framework of the density functional theory (DFT). The DFT calculations have shown that oxygen penetrates under the surface layer near step boundaries. An oxide monolayer is formed at a temperature of approximately 800 K under conditions of a sufficient surface concentration of oxygen.