

**【S-24】**

## The adsorption and desorption properties of CO on Mo(110) surface

T. S. Yang, H. -G. Chi, S. J. Cho, H. Oh, J. H. Boo, S. -B. Lee

Institute of Basic Science and Department of Chemistry, Sungkyunkwan University

The adsorption and the desorption of CO on clean and oxygen-modified Mo(110) surfaces have been investigated using synchrotron radiation. According to the valence band spectra, two CO peaks at near 10.7 eV( $4\sigma$ ) and 7.0 eV( $5\sigma+1\pi$ ) were observed, indicating molecular CO adsorption on Mo surface at 120 K. Even heating the adsorbed surface to 1070 K, we could also detect the CO  $4\sigma$  peak that can be an important factor for identifying a contribution of the CO  $4\sigma$  molecular orbital to the CO-metal bond.

In addition, a detailed investigation of the oxygen-inhibition effect on the lying-down orientation of CO on Mo(110), including both CO adsorption on oxygen-preexposed Mo(110) and the postadsorption of O<sub>2</sub> on CO/Mo(110), has been carried out.