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## Chemisorption of CO on ultrathin epitaxial Ni films on Cu(001) surface

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The chemisorption effect of CO on the Ni/Cu(001) surface was investigated using LEED(Low Energy Electron Diffraction) and EELS(Electron Energy Loss Spectroscopy) under the UHV conditions. After mounting the Cu(001) single crystal in the UHV chamber (base pressure  $1 \times 10^{-10}$  Torr), a clean surface was obtained after a few cycles of repeated Ar<sup>+</sup> ion sputtering and annealing at about 400 °C. The epitaxial thin Ni films were formed on the Cu(001) by evaporation from 99.999% Ni block. The pseudomorphic growth and the orderness of the thin Ni films were monitored by c(2×2) LEED pattern. CO adlayers on Ni epitaxial thin films were prepared by dosing pure CO gas through a leak valve. After CO adsorption at room temperature, two pairs of peaks were observed by EELS, whose relative intensities are changed as the film thickness is varied and time is elapsed. These two pair of peaks are likely related to different bonding sites(-top and bridge sites) of C-Ni as well as C-O vibration. Experimental results and qualitative interpretation of the spectra will be discussed. The possibility of using EELS in combination with a probe species (CO) to investigate the nature of thin film growth is mentioned. We will report the experimental result of O<sub>2</sub> dosage on Ni film and interaction of CO and O<sub>2</sub>.