

Imaging and vibrational spectroscopy of single pyridine molecules on Ag(110) using a low-temperature scanning tunneling microscope

한재량

전북대학교 화학과

A scanning tunneling microscope (STM) was used to extract the images of single, isolated pyridine molecules adsorbed on Ag(110) and to record their vibrational spectrum at 13 K. On the STM image, the pyridine molecule appears as an elongated protrusion along the [001] direction on top of a silver atom, indicating that it is bonded through its nitrogen lone pair electrons. STM inelastic electron tunneling spectroscopy of the adsorbed pyridine revealed C-D and C-H stretch modes at 282 and 378 meV, respectively.

