

[S-07]

## Adsorption Structure of Purine on Ge(100)

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The adsorption of purine molecule onto Ge(100) was investigated using scanning tunneling microscope (STM). We find that purine molecules adsorb with very high order and selectivity onto Ge(100) via the formation of multiple Ge-N dative bonds through a Lewis acid-base type reaction. The filled-state STM image of Ge(100) surface recorded after the exposure of 0.01 ML purine molecules, the round shape protrusions are attributed to purine molecules and appear to reside between the buckled dimer rows. The STM image also shows local rearrangements of the purine adsorbed Ge(100) surface from a  $c(4 \times 2)$  to  $p(2 \times 2)$  structure. This STM result indicates that the adsorption of purine on Ge(100) surface proceeds preferentially via multiple Ge-N dative bondings between three N atoms and the surface dimers. At the saturation coverage (0.25 ML), purine molecules adsorb on the substrate producing a highly ordered monolayer. Based on the STM results, we may conclude that purine molecules adsorb on every other dimer via only Ge-N dative linkage forming a  $c(4 \times 2)$  structure.

[참고문헌]

1. Young Eun Cho, Jae Yeol Maeng, and Sehun Kim, *J. AM. CHEM. SOC.* **2003**, *125*, 7514.