

[22-S09]

## Surface etching on Si substrates induced by Ce adsorption studied using STM

Dohyun Lee, Han Gil Lee, Sung-Soo Bae, Sehun Kim, Chanyong Hwang\*

Department of Chemistry and School of Molecular Science (BK21)

Korea Advanced Institute of Science and Technology

\*Nano-Characterization Group

Korea Research Institute of Standards and Science

We report that the terraces and step edges on Si(111) and Si(100) are highly etched by Ce adsorption at room temperature (RT) followed by annealing to 500°C using variable temperature scanning tunneling microscopy (VT-STM). Step meandering phenomena on both substrates are found as a result of surface etching induced by Ce adsorption and subsequent annealing, which can be related to the formation of Ce silicide above 500°C. We suggest a possible mechanism of surface etching on Si(111) and Si(100) based upon our STM results.