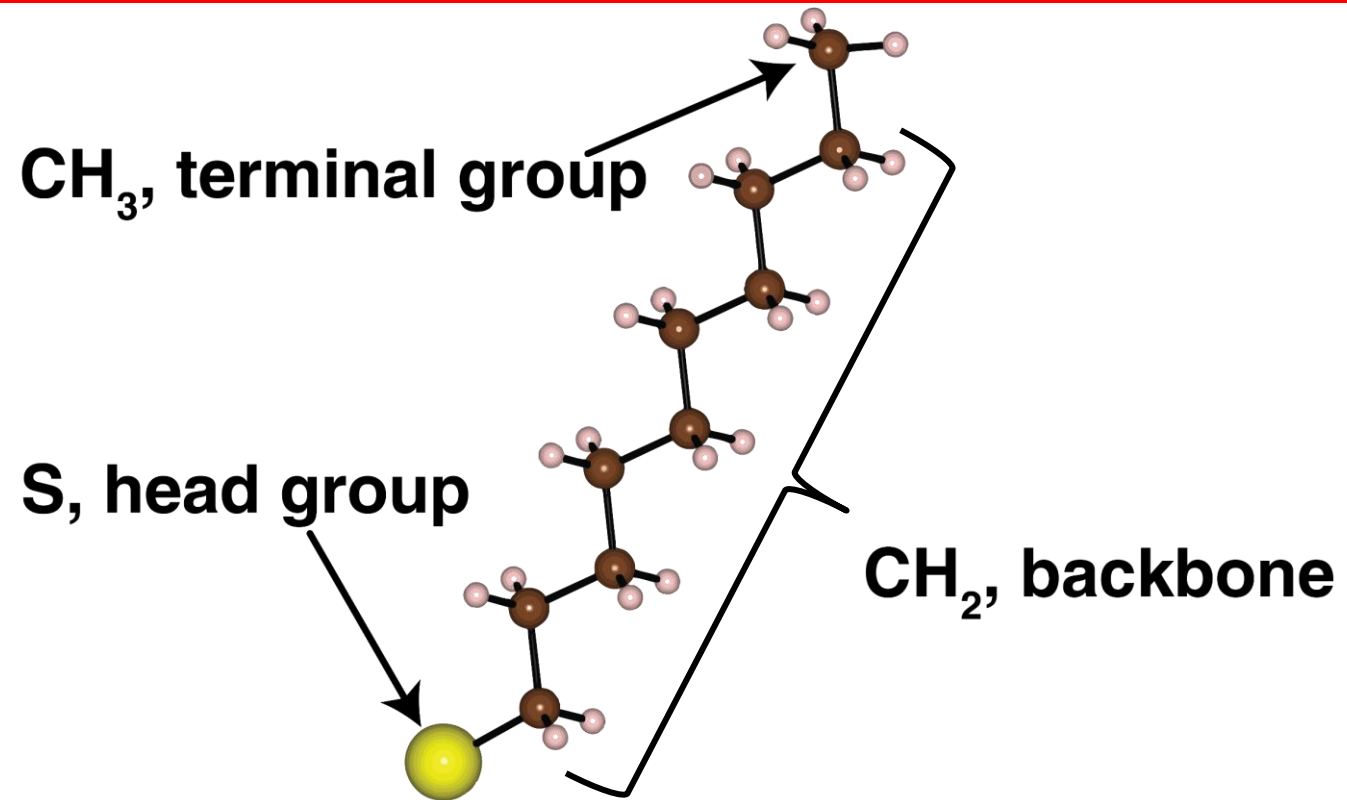
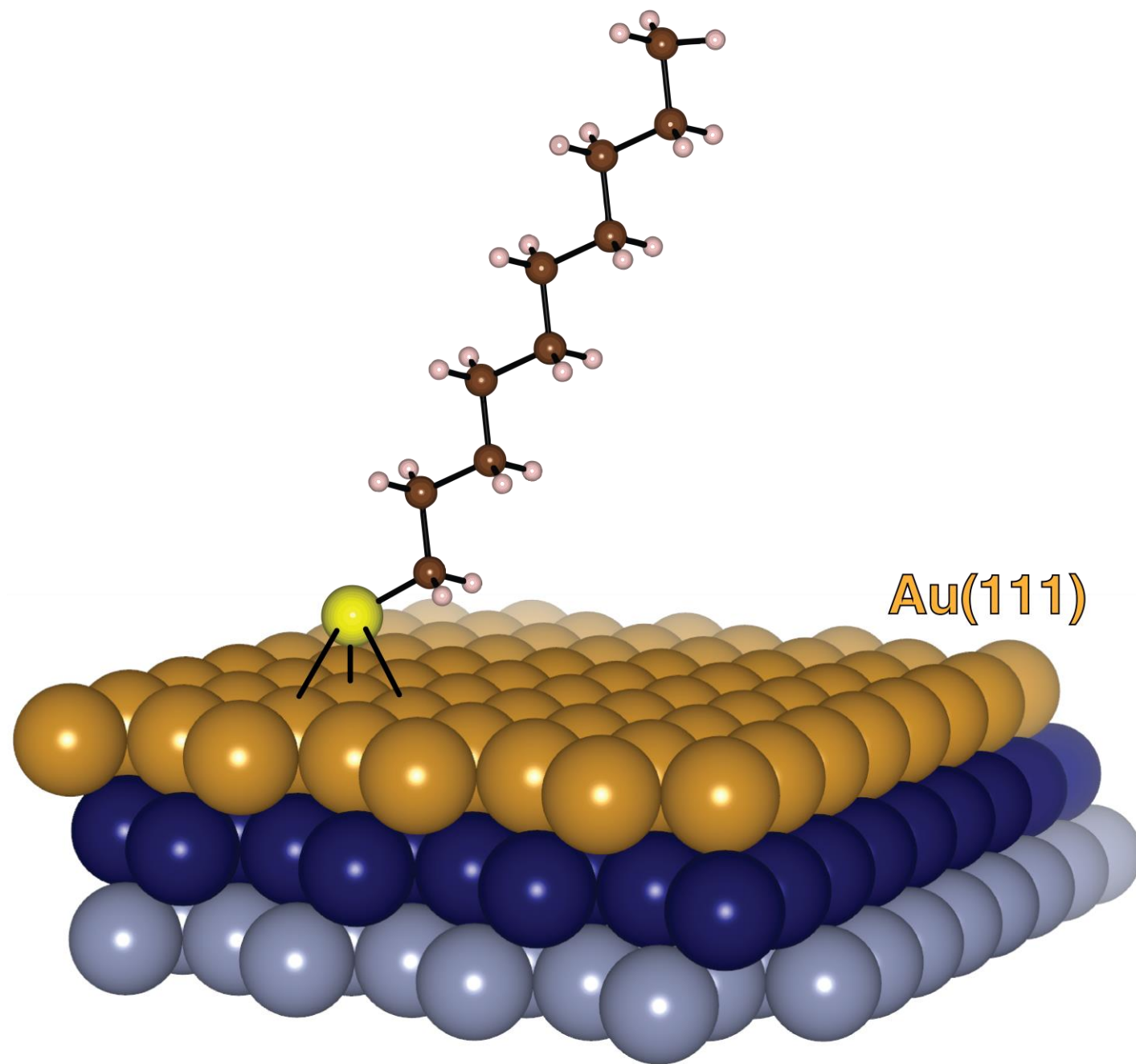


Alkanethiol Self-Assembled Monolayer Structure and Temperature Dependency

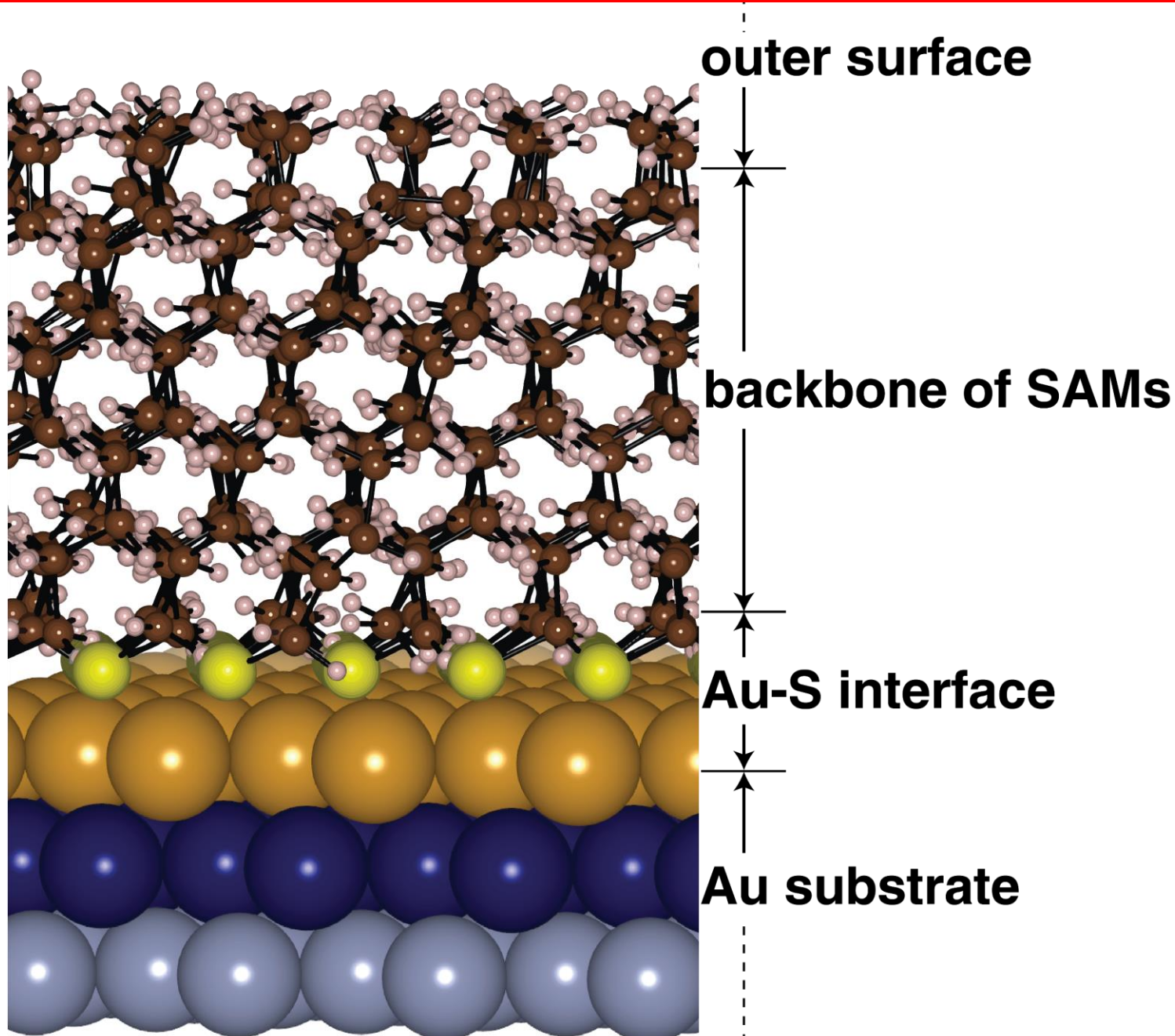
Juan Zuñiga
Advisor: Lloyd Bumm

n-Decanethiol Molecule





Self-Assembled Monolayer (SAM)



Outer surface:

Scanning tunneling microscope (STM), He atom diffraction

Backbone:

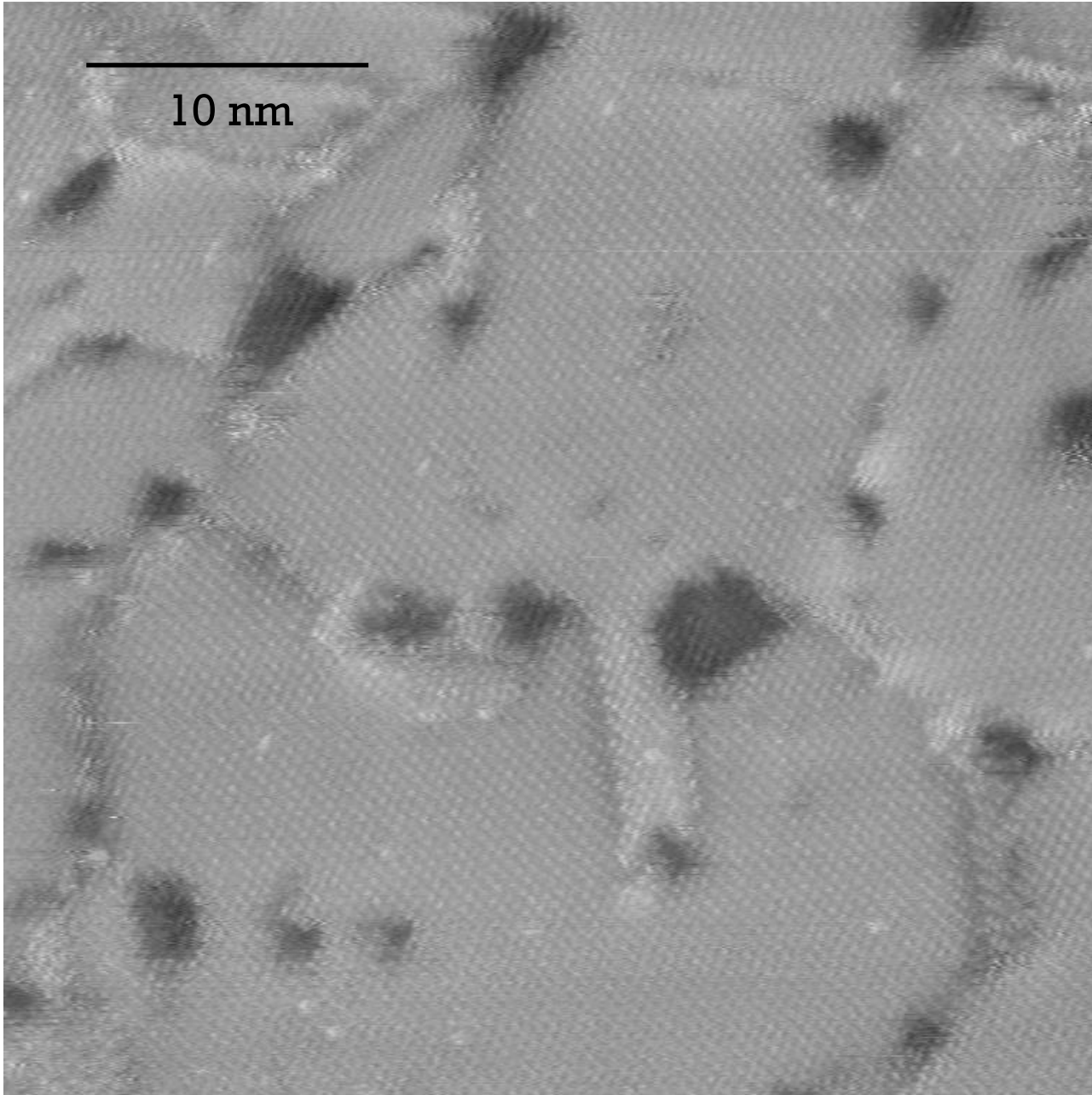
Infrared reflection absorption spectroscopy (IRRAS)

Au-S interface:

X-ray diffraction (XRD), Low energy electron diffraction (LEED)

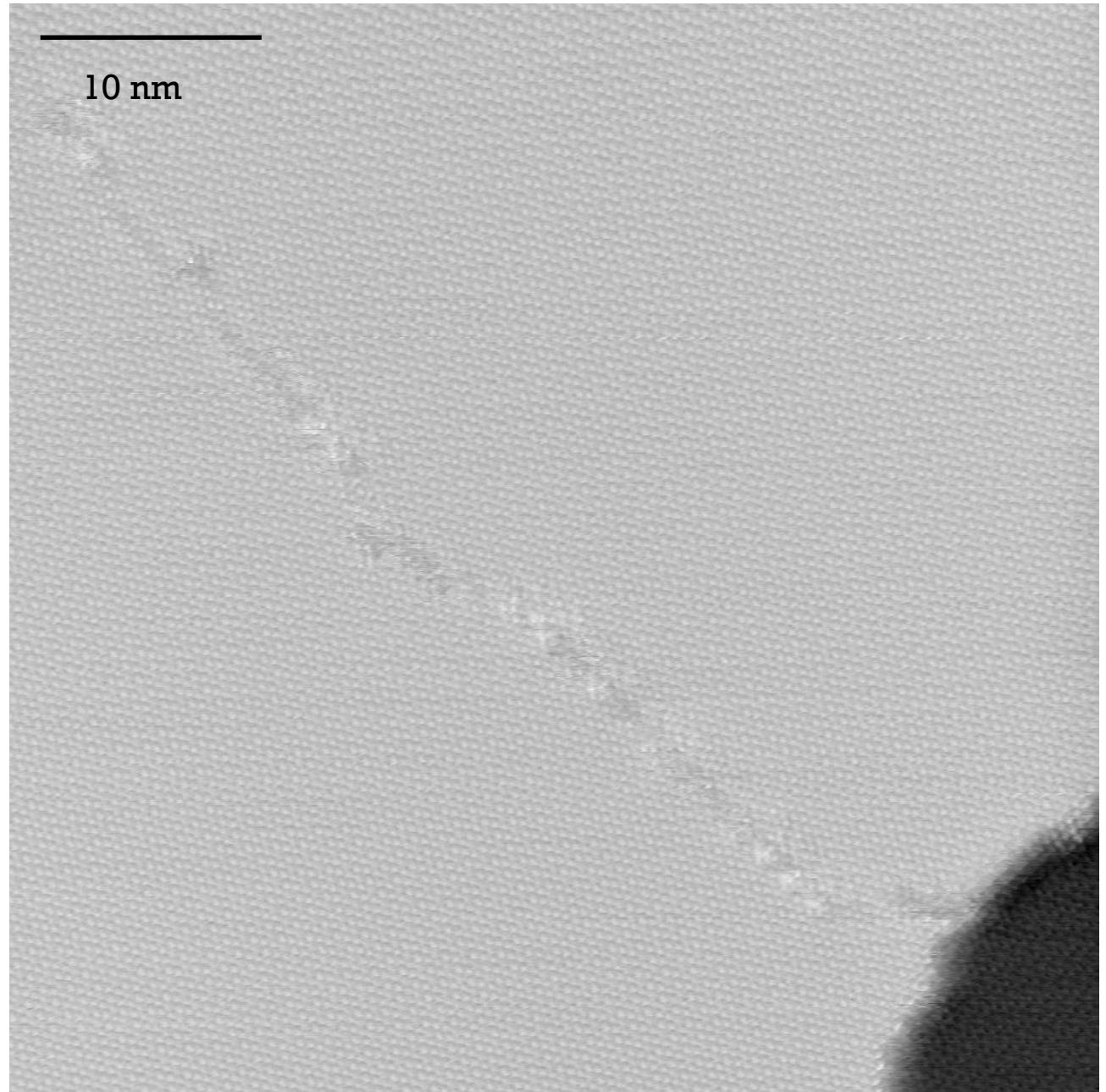


Defects/Irregularities



Low
Temperature
Deposition
Room Temperature

High
Temperature
Deposition
100°C



Application

- Pharmacological
- Nanotechnology
- Hydrophobic characteristic modification

What will I be
doing?

- Decanethiol deposition on Au(111) substrate at temperatures ranging from 80°C to 180°C.
- Studying multiple sample structures using STM
- Determine sample structure dependency on temperature

The background of the slide features a series of concentric circles in a light gray color, centered on a dark gray background. The circles vary in radius and are distributed across the entire frame, creating a subtle, abstract pattern.

Pictures and diagrams:
▼ Courtesy of the surface and
molecular interface group

Questions?