

Au Films for Protein or DNA Chip

inostek

INOSTEK Inc.
#707 Gyeonggi Technopark
1271-11 Sa 1, Sangnok,
Ansan, Gyeonggi 426-901, KOREA

Tel : 82-31-500-4110
Fax: 82-31-500-4112
<http://www.inostek.com>
E-mail: information@inostek.com

Biochip for SPR Analysis

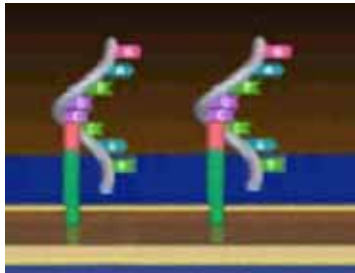
❖ Requirements for Biochip

- Metals which exhibit high free electron emission (Au, Ag, Cu, Al)
- Good chemical stability (Au)
- Thickness range (40~50nm)
- High longitudinal charge density propagation of the surface plasmon
- Sharp SPR resonance peak

❖ Requirements of Au Film for SPR Analysis

- Good thickness uniformity
- Excellent adhesion for good ligand synthesis and interaction
- Highly textured orientation
(for determination of Au surface adsorption sites)
- Good surface roughness (for optical detection)

❖ SPR System

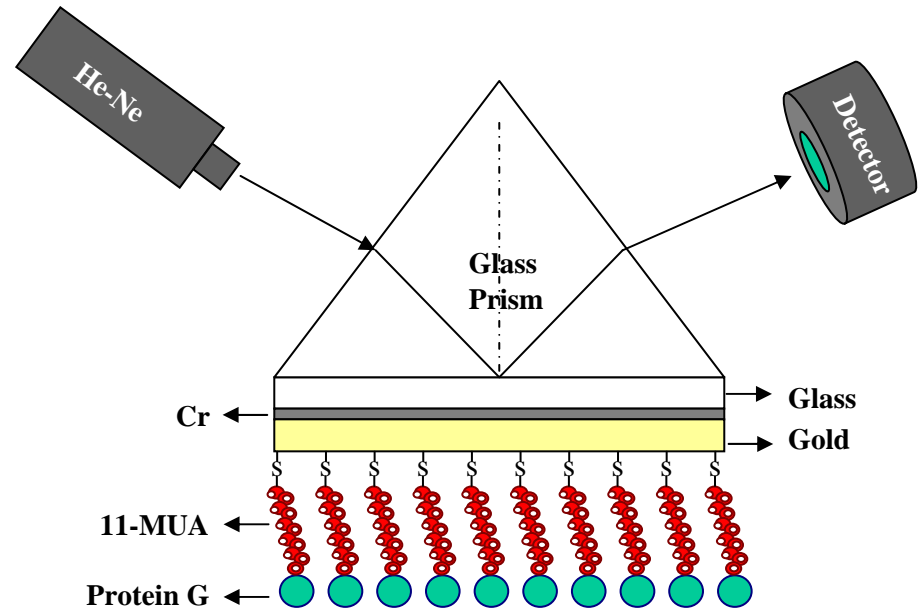


Immobilization

- Amine Coupling
- Thiol Coupling
- Avidin-Biotin Coupling
- Aldehyde Coupling

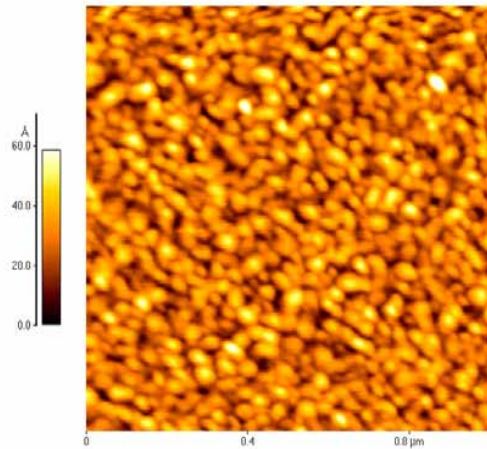


Multiskop, Germany



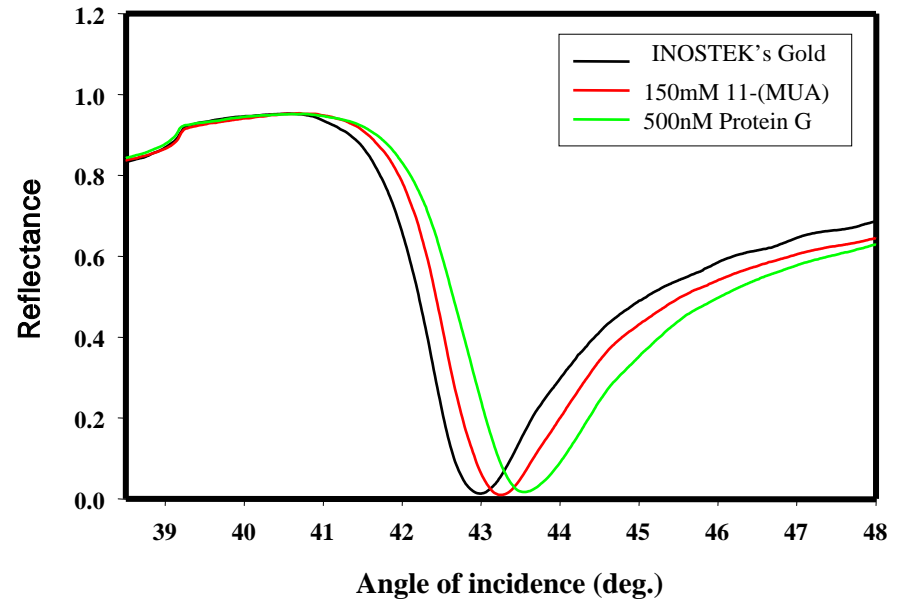
Schematics of SPR Characterization

❖ Gold Film by Inostek



AFM images of Inostek's gold film

SPR characterization for protein G



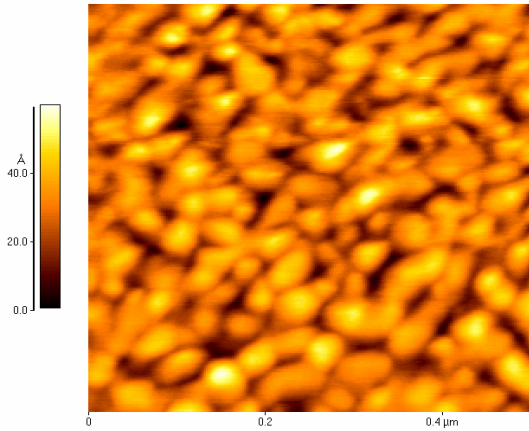
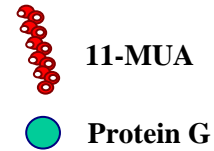
SPR minimum position

Bare : $43.002^\circ \pm 0.02$

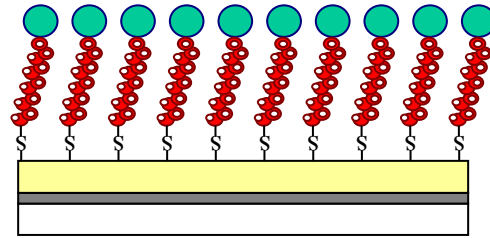
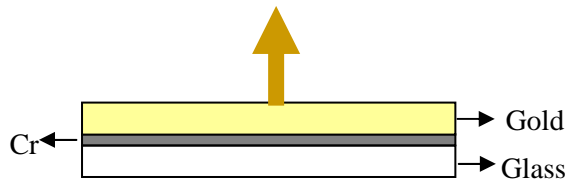
11-(MUA) : $43.257^\circ \pm 0.03$

Protein G : $43.547^\circ \pm 0.03$

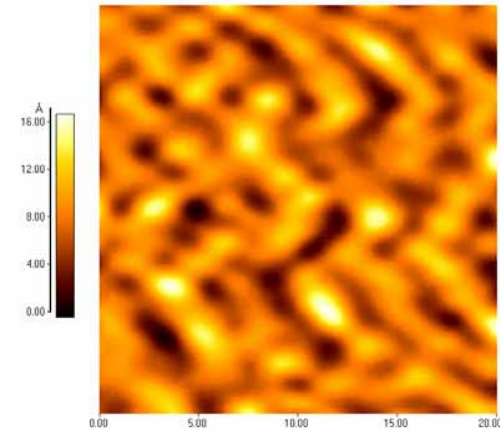
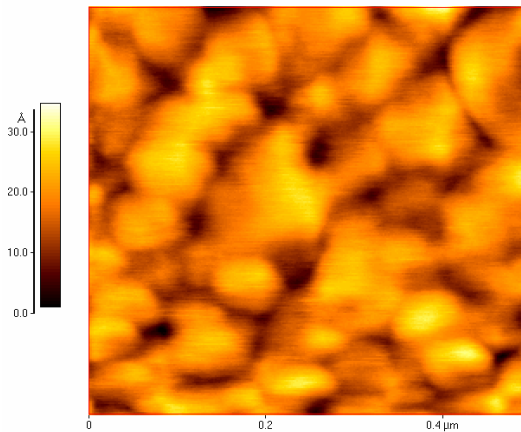
AFM Images of Chip Surface



Bare gold
scan size (0.5μmX0.5μm)



Protein G
scan size (0.5μmX0.5μm)



11-(MUA)
scan size (20 X20)

