



Departament
d' Electrònica
Universitat de Barcelona



Fabrication of optical gratings coated with Si_3N_4 for efficient immunosensing monitored by Optical Waveguide Spectroscopy

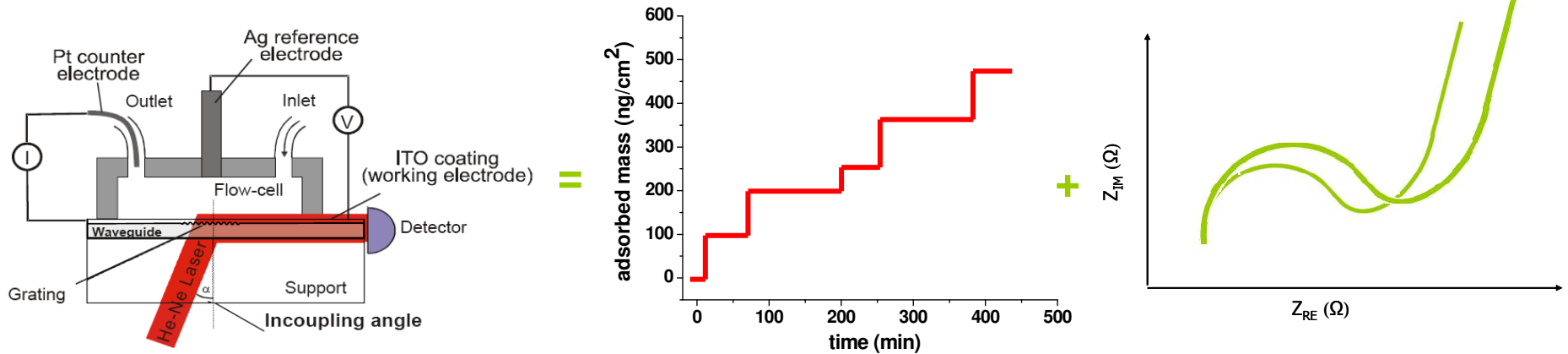
Lorena Diéguez

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Motivation

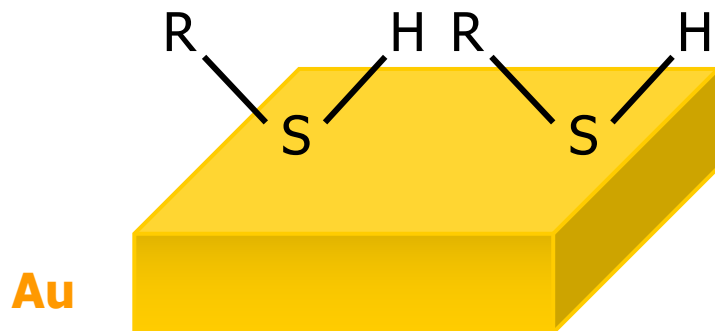
ElectroChemical Optical Waveguide Lightmode Spectroscopy (EC-OWLS)



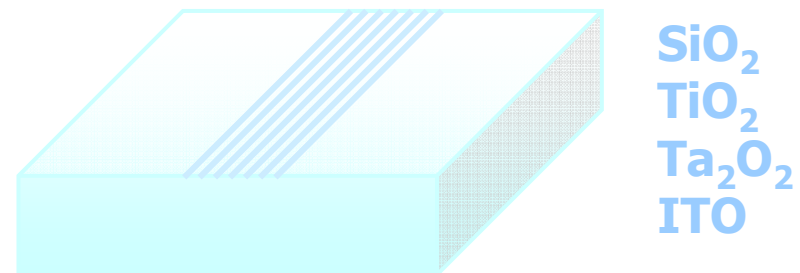
Active Surfaces in Label free

ElectroChemical sensors

Thiol-based functionalization chemistry

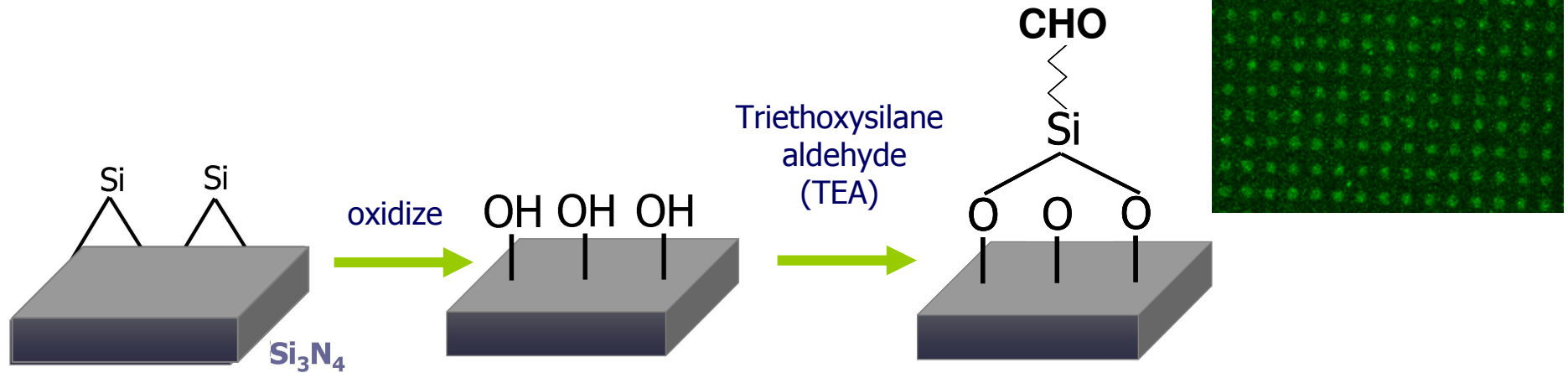


Grating couplers



Si_3N_4

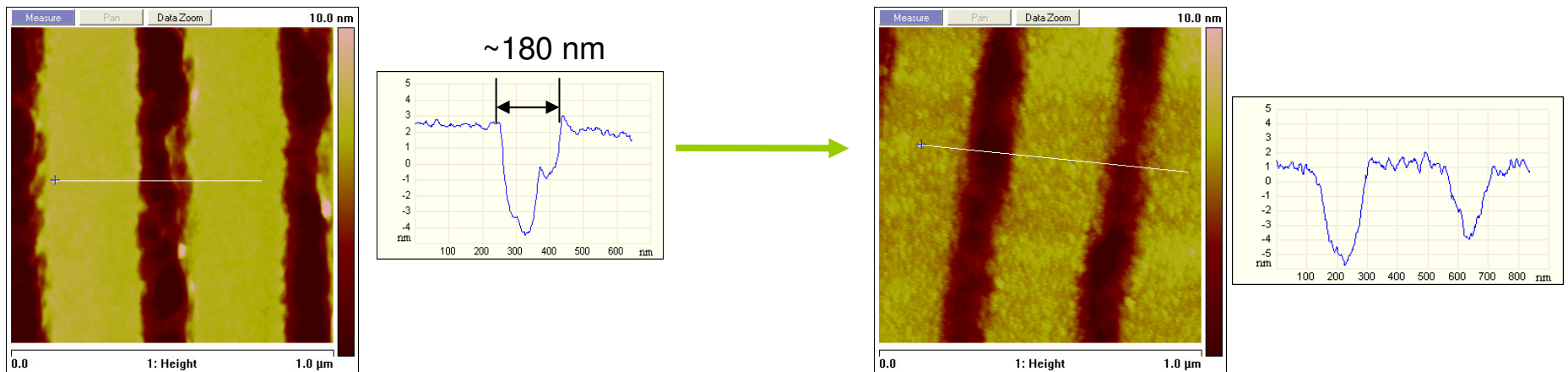
Functionalization



NEW!! Direct immobilization of CHO groups

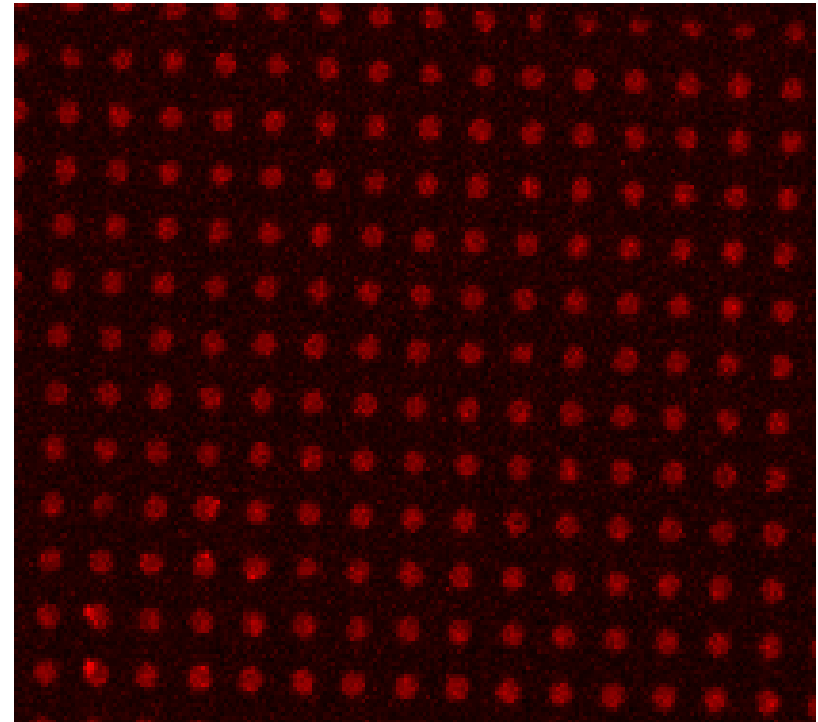
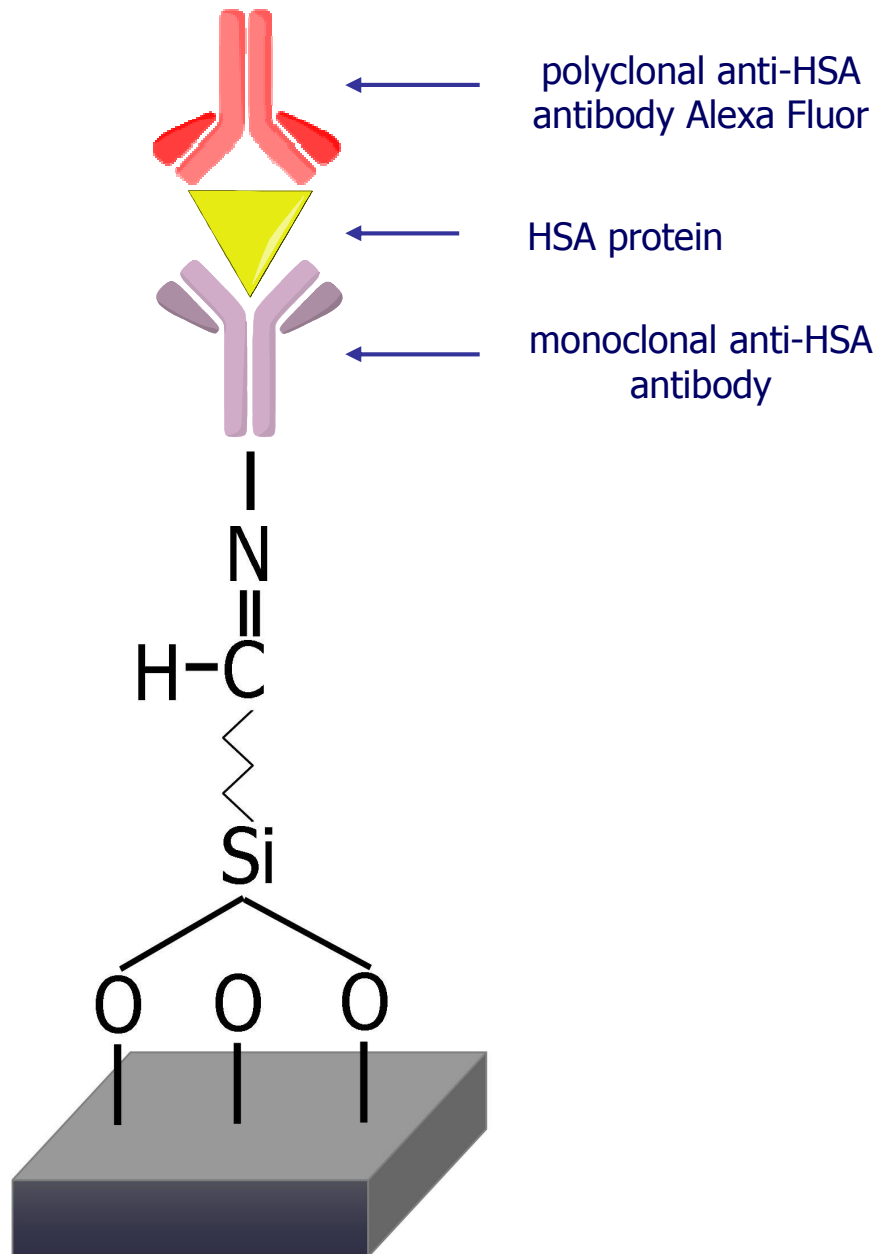
[D. Caballero et al. Small 5 (2008)]

Grating Fabrication

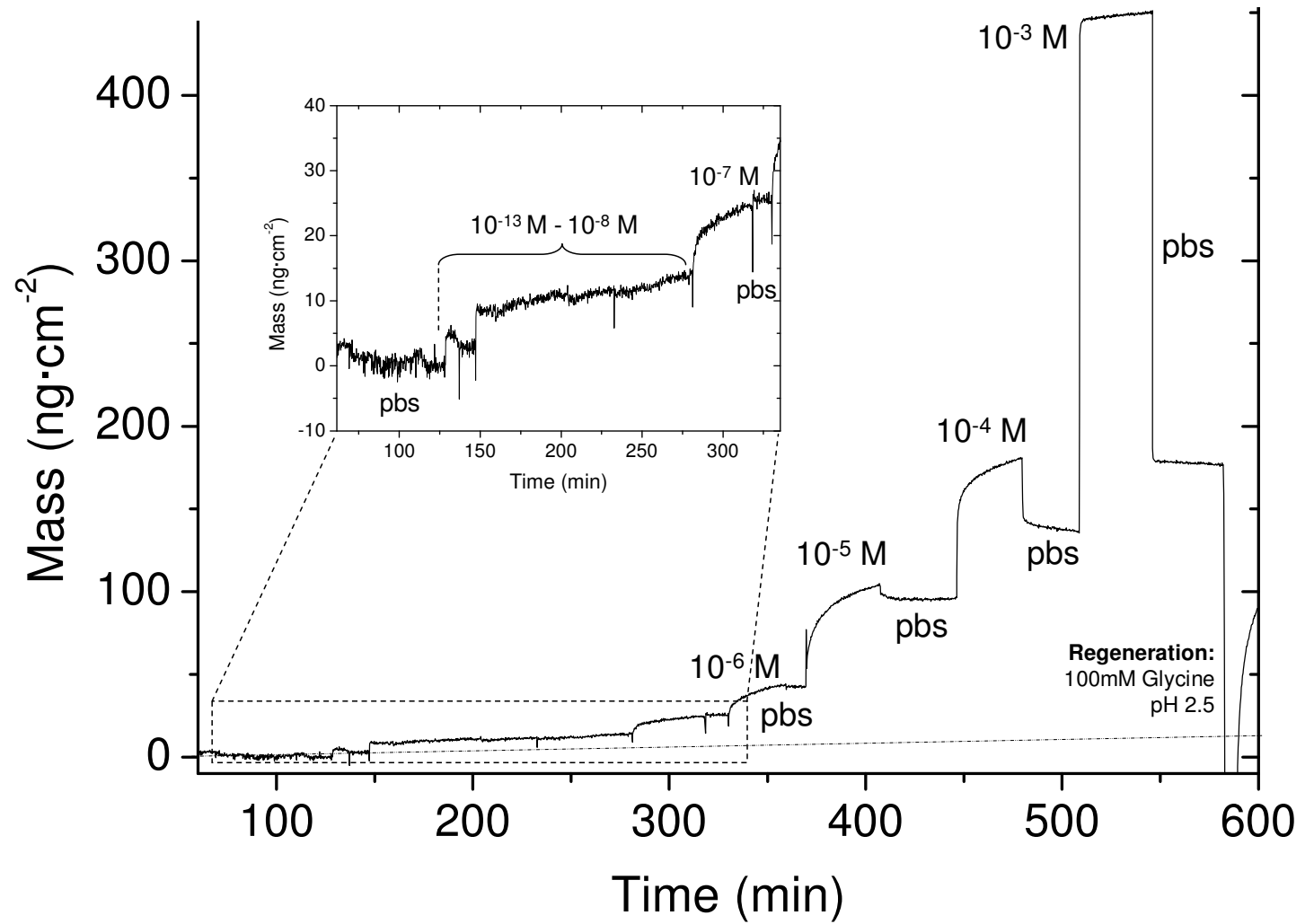
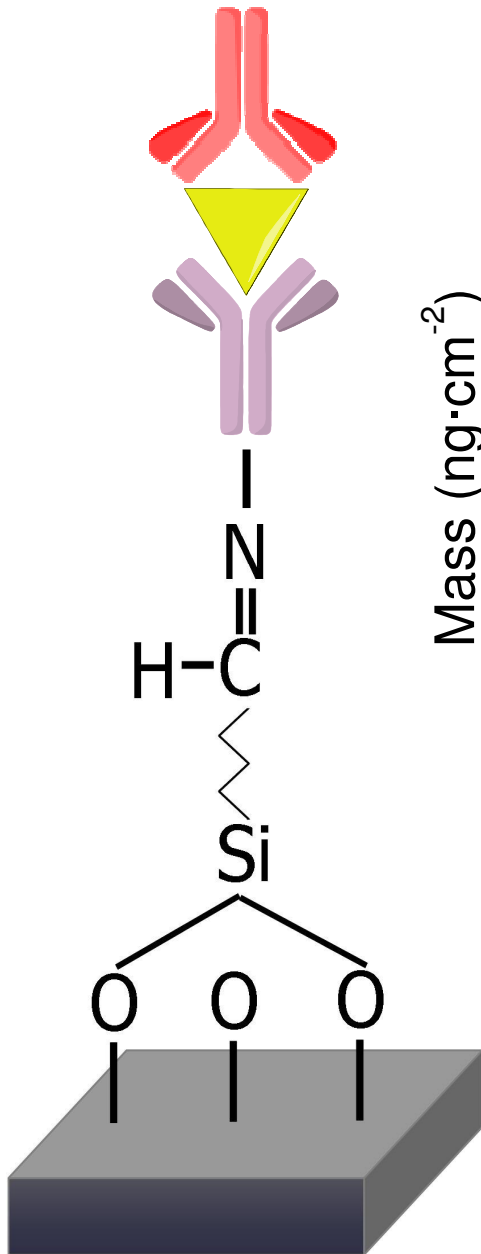


Commercial optical grating covered with 10nm Si_3N_4 by sputtering

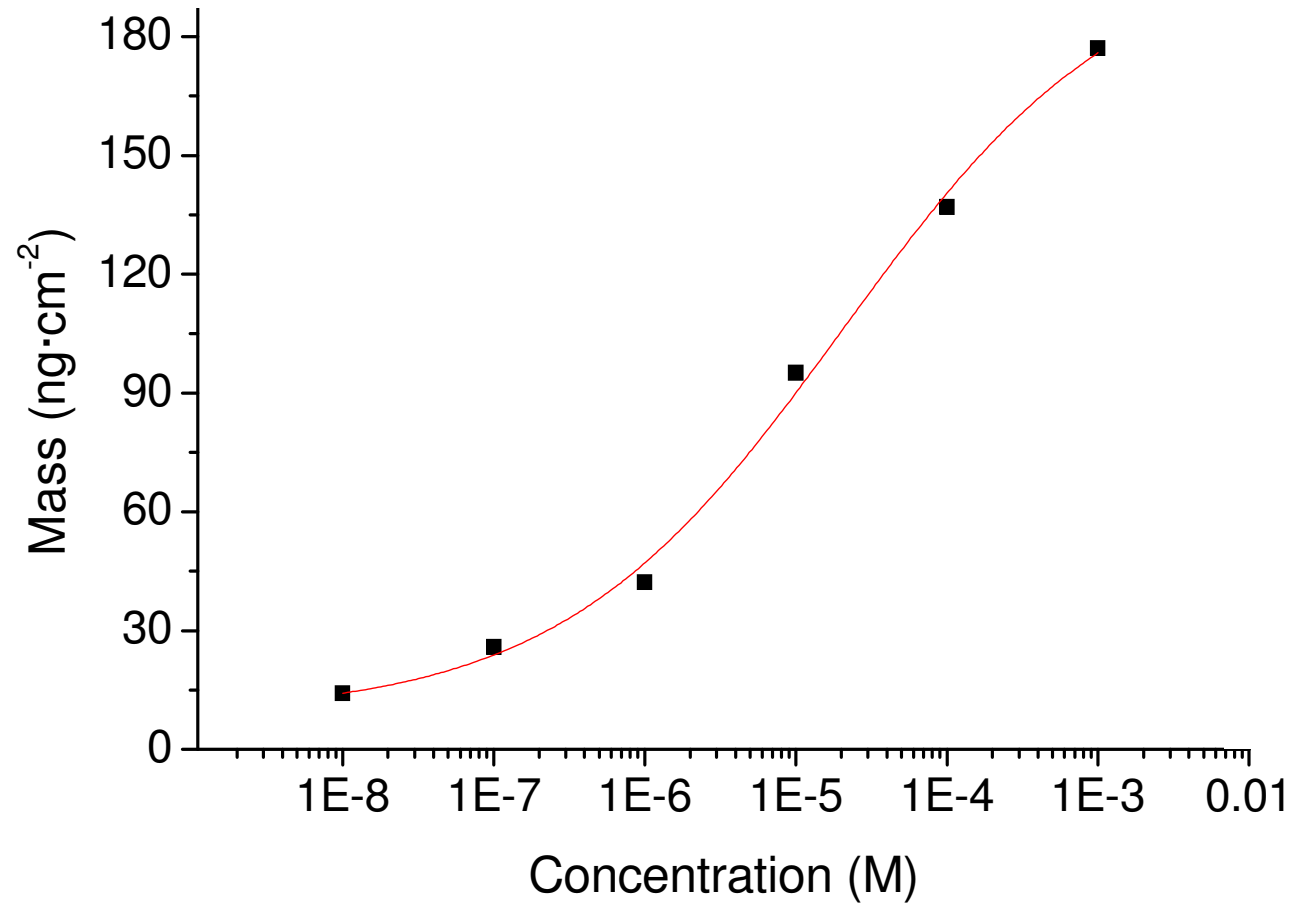
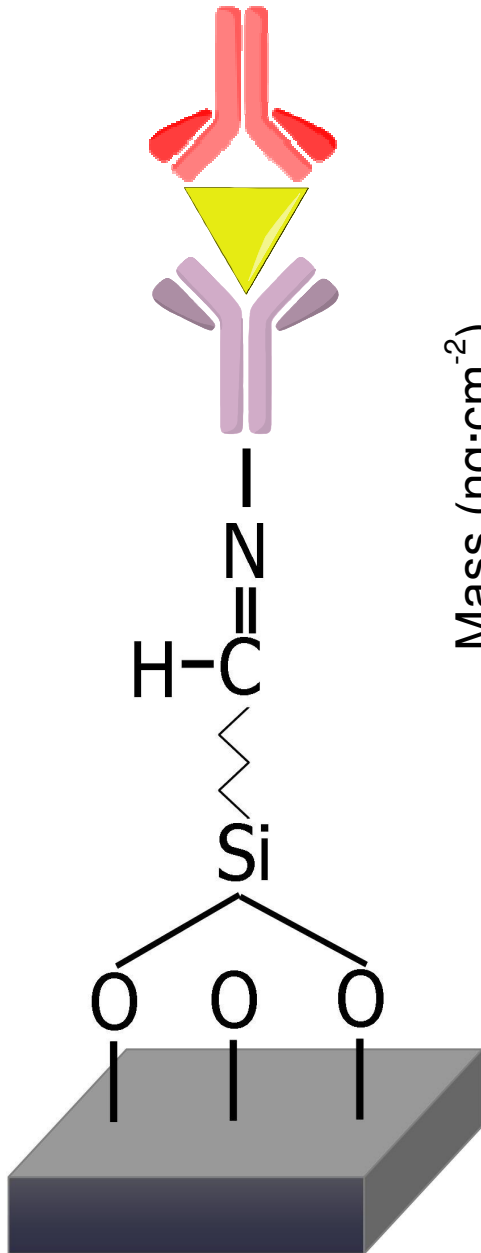
Immunosensing test by OWLS



Immunosensing test by OWLS



Immunosensing test by OWLS



Detection limit of 10⁻⁸M

Sensitivity of 1ng/cm²



Thank you!
See you at poster 12

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