

Sweccha Joshi

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Project	Enhanced bioresolution and miniaturization of Surface Plasmon Resonance optical sensing (SPRing)
Fields of interest	Surface chemistry, iSPR, biosensing
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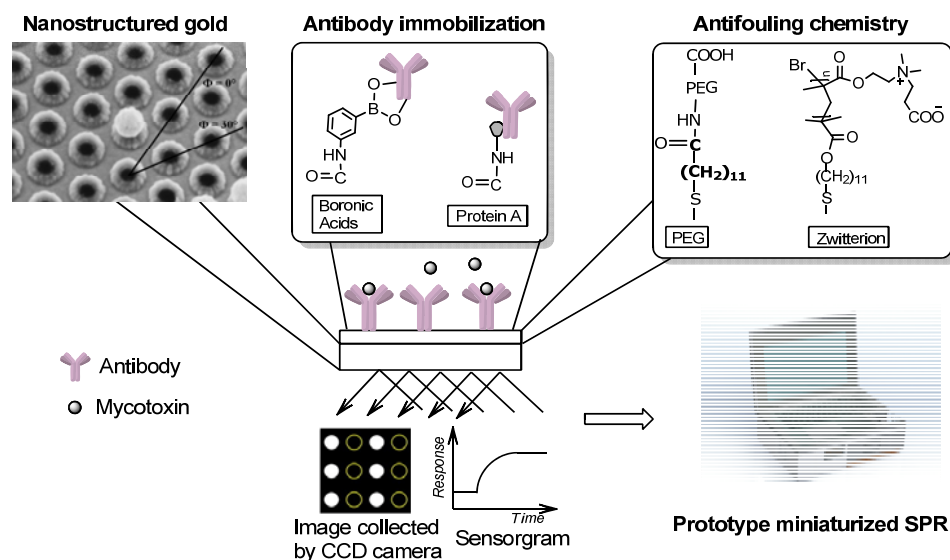


Introduction

Surface Plasmon Resonance based (SPR) biosensors have received considerable attention and have been the center of protein-ligand biointeractions research for the past two decades. SPR biosensors have proven to be highly complementary to other techniques such as GC or LC/MS, HPLC and immunoassays mainly due to their ability to afford simple, label-free detection of biointeractions and to provide real-time information on the binding kinetics.¹

Goal

The SPRing project aims to utilize the current knowledge of nanostructuring, plasmonics and surface chemistries to develop a true handheld imaging SPR device for detection of biomolecules in the food chain and ultimately to bring the lab to the sample. The advancements in nanopatterning and plasmonics have made it possible to produce a nanostructured gold surface that allows considerable cost and size reduction of the proposed prototype device. Studies directed towards antifouling chemistries and oriented antibody immobilization will help to create a highly sensitive and specific surface capable of multiplex biodetection. As a model system, mycotoxin assays will be developed with demonstrated applicability in the food industry.



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References

1. Breault-Turcot, J.; Masson, J.-F. *Anal. Bioanal. Chem.* **2012**, 403, 1477-1484.