Abstract: H23.00005 : Plasmonic Halos Towards Molecular Sensing of Target Biomarkers*

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Diagnostic tools *e.g.*, those used in the biomedical field, have greatly benefited from taking advantage of the properties of plasmonic phenomena in micro- and nano-scale thin films and structures [1]. Here, we discuss the considerations involved in the design and fabrication of a previously reported plasmonic microstructure towards the goal of sensitive detection of disease biomarkers [2]. We show current fabrication results and motivate relevant processes, parameters and materials therein. We describe our measurement setup and provide comparison to a commercially available system, particularly to motivate how our device can extend existing detection tools to point-of-care applications. We introduce preliminary device responses and our approaches to current obstacles of the project.

[1] T. Chung, S. Lee, E.Y. Song, H. Chun, B. Lee, *Sensors*, **11**, 10907–10929 (2011)
[2] F. Ye, M.J. Burns, M.J. Naughton, *Nano Lett,* **13**, 519-523 (2013)
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