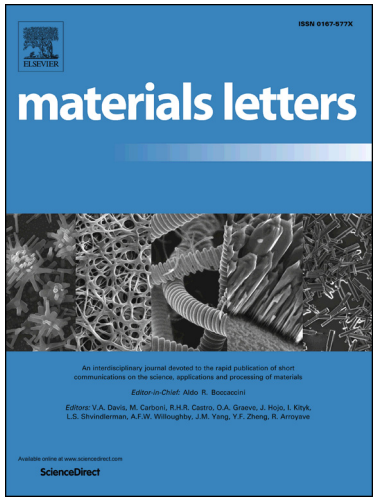

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Cost-effective plasmonic device for label-free streptavidin detection

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Abstract

NLS was used to prepare holed plasmonic substrates with high sensitivity to streptavidin detection. SEM and AFM characterizations showed substrates with holes distribution of 240.1 ± 27.8 nm and periodicity of 420.2 ± 25.4 nm. These substrates showed a sensitivity of 382.40 ± 11.60 nm/RIU in solutions with different refractive indexes. The sensor has demonstrated high sensitivity in the biosensing of biotin-streptavidin. The immunoassay showed a 1.8 ± 0.3 nm LSPR peak redshift in the protein detection. This work forms a foundation towards the cost-effective plasmonic biosensors.

Keywords: SPR, biosensor, immunoassay, NSL