

ABSTRACT**OPTICAL WAVEGUIDE SENSOR FOR DETECTING ARSENIC IONS AND
METHOD OF FABRICATING THE SAME**

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The present invention relates to a method for forming an optical waveguide sensor for detecting arsenic ions in an aqueous solution. The method comprising the steps of treating a substrate with solvents, coating the treated substrate surface with a crosslinking agent selected from a group comprising carboxylic acid functional group containing organic molecules for forming a crosslinked substrate surface, coating the crosslinked substrate surface with a ligand comprising an amine functional group and mercaptan functional group for forming a functionalized substrate surface containing a layer of ligand surface, and complexing the layer of ligand surface with a solution containing iron ions for forming a functionalized substrate surface containing layer of ligand surface containing iron ion cores that is capable of binding with arsenic ions in an aqueous solution. The present invention also relates to the optical waveguide sensor for detecting arsenic ions fabricated with the method of the present invention.

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Figure 1