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(54) Title: OPTICAL WAVEGUIDE SENSOR FOR DETECTING RADIOACTIVE ISOTOPES AND METHOD OF FABRICATING THE SAME

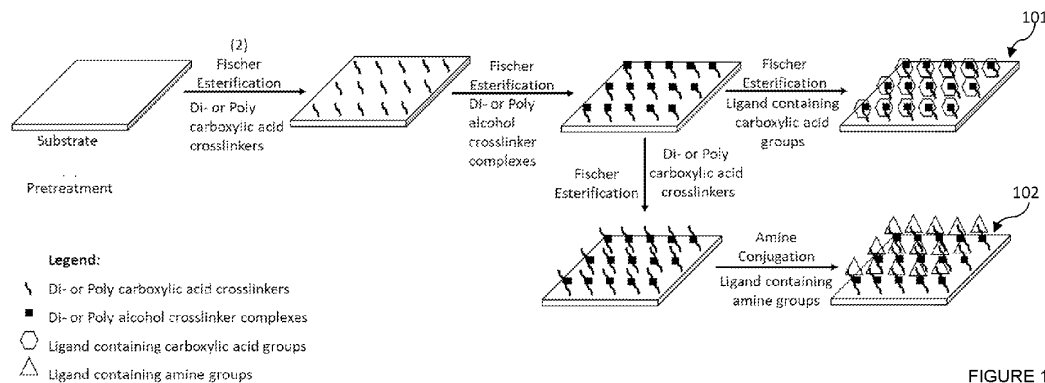


FIGURE 1

(57) Abstract: The present invention relates to a method for forming an optical waveguide sensor for detecting ions containing radioactive isotopes in an aqueous solution. The method comprising the steps of treating a substrate surface by cleaning the substrate surface with one or more solvents for enabling coating of the treated surface with a crosslinking agent, the substrate being selected from a group comprising a silica or a silicon substrate, coating the treated substrate surface with the 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 scintillating agent for forming a substrate surface containing scintillating agent, and coating the substrate surface containing scintillating agent with a ligand capable of reacting with a radioactive isotope in an aqueous solution for forming a functionalized substrate surface, thereby forming the optical waveguide sensor comprising a layer of the ligand and the scintillating agent. The present invention also relates to the optical waveguide sensor for detecting radioactive isotopes fabricated with the method of the present invention.

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