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(54) Title: *IN-SITU* NON-INVASIVE DEVICE FOR EARLY DETECTION OF FOULING IN AQUATIC SYSTEMS

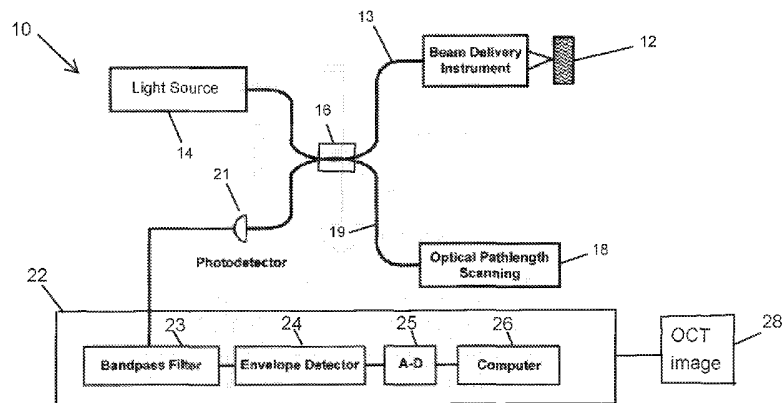


FIG. 1A

(57) Abstract: An *in-situ*, non-destructive sensor device, system and method are provided to detect or assess fouling at a very early stage of development. They can be used to detect or assess fouling on a surface of an aquatic system. They can be used to obtain a depth profile of the fouling. Data concerning the depth profile can be extracted and used to assess the fouling on the surface, in one or more aspects, the method can include providing an optical tomography spectrometer; optically positioning the optical tomography spectrometer in association with a surface of an area to be assessed for fouling in an aqueous system; irradiating the surface; acquiring, from irradiating the surface, a plurality of signals as a function of a distance from the surface at different times; extracting data from the signals as a function of the distance to obtain a depth profile of the surface at the different times; and determining a change in the depth profile between the different times to assess fouling on the surface.

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