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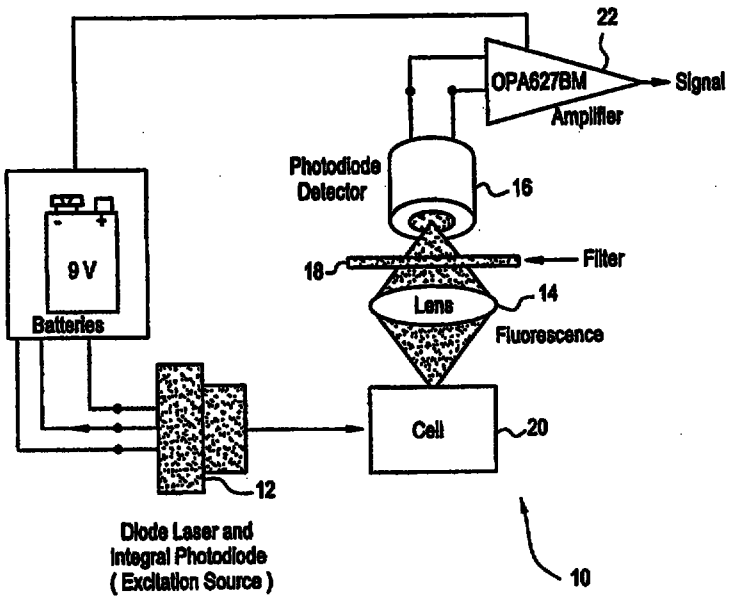
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(54) Title: SOLID–STATE FLUOROMETER AND METHODS OF USE THEREFOR



(57) Abstract

The fluorescent resulting from the diode laser (12) or LED excitation source (112) is imaged (optionally with a lens) (14, 114) onto a silicon photodiode detector (16, 116). An optical filter (18, 118) is placed between the sample cell (20, 120) and the photodiode detector to reject scattered excitation light. The output from the photodiode is amplified (22, 122) to produce an output voltage proportional to the quantity of fluorescence striking the photodiode detector. Since fluorescence is proportional to the concentration of the fluorophore present in the sample stream, and the concentration of the fluorophore is further proportional to the concentration of a chemical treatment agent or other additive present, then continuous monitoring of a voltage output may be performed which allows real–time measurement of the amount of chemical treatment agent or other additive present in the system.